

**COMPREHENSIVE
DEVELOPMENT PLAN**

for the

**WEST CENTER
CITY ANALYSIS
AREA**

Census Tracts 16 & 21

PREPARED BY

**Derrick E. Lightfoot, Planner II
Peter D. Besecker, Director**

**THE DEPARTMENT
OF PLANNING &
DEVELOPMENT
CITY OF WILMINGTON**

SEPTEMBER 2000

**Recommended By
City Planning Commission
Resolution: 24-00
Date: September 19, 2000**

**Adopted By
Wilmington City Council
Resolution: 00-116
Date: October 19, 2000**

**Amended by
City Planning Commission
Resolution: 14-12
Date: September 18, 2012**

**Adopted By
Wilmington City Council
Ordinance: 12-045
Date: November 1, 2012**

BANCROFT PARKWAY BOULEVARD
BROWNTOWN/HEDGEVILLE CENTRAL
CHERRY ISLAND DELAWARE AVENUE
EAST SIDE MIDTOWN/BRANDYWINE
NORTHWEST PRICES RUN RIVERSIDE
SOUTHWEST SOUTH WILMINGTON
WEST CENTER CITY WEST SIDE
BANCROFT PARKWAY BOULEVARD
BROWNTOWN/HEDGEVILLE CENTRAL
CHERRY ISLAND DELAWARE AVENUE
EAST SIDE MIDTOWN/BRANDYWINE
NORTHWEST PRICES RUN RIVERSIDE
SOUTHWEST SOUTH WILMINGTON
WEST CENTER CITY WEST SIDE
BANCROFT PARKWAY BOULEVARD
BROWNTOWN/HEDGEVILLE CENTRAL
CHERRY ISLAND DELAWARE AVENUE
EAST SIDE MIDTOWN/BRANDYWINE
NORTHWEST PRICES RUN RIVERSIDE
SOUTHWEST SOUTH WILMINGTON
WEST CENTER CITY WEST SIDE
BANCROFT PARKWAY BOULEVARD
BROWNTOWN/HEDGEVILLE CENTRAL
CHERRY ISLAND DELAWARE AVENUE
EAST SIDE MIDTOWN/BRANDYWINE
NORTHWEST PRICES RUN RIVERSIDE
SOUTHWEST SOUTH WILMINGTON

TABLE OF CONTENTS

	PAGE
I. INTRODUCTION.....	1
II. GENERAL CHARACTERISTICS OF THE WEST CENTER CITY ANALYSIS AREA	3
A. Natural Environment and Land Form.....	3
B. Land Use Descriptions.....	3
C. WCC Demographics & Housing Statistics	8
III. RECOMMENDATIONS PROPOSED FOR THE WEST CENTER CITY ANALYSIS AREA.....	11
A. Land Use & Zoning Recommendations.....	12
B. WCC's Overall Transportation Recommendations	16B
• Streets & Highway Recommendations.....	16B
• Public Transportation Recommendations.....	20
C. Economic Development Recommendations	23
D. Recommendations for Parks & Recreational Facilities	25
E. Recommendations for City Services & Facilities.....	26
F. Recommendation for Environmental Clean Up – Helen Chambers Park.....	28
G. Recommendations for Focused & Directed Special Purpose Programs	29

APPENDIX A Department of Environmental Control & Natural Resources: Helen Chambers Park

MAPS

- A. CENSUS TRACTS AND BOUNDARIES
- B. CURRENT LAND USE
- C. CURRENT ZONING
- D. PROPOSED ZONING (Map D1 through Map D4)
- E. PROPOSED LAND USE
- F. HISTORICAL AND CULTURAL RESOURCES
- G. URBAN RENEWAL AREAS
- H. PARKS & RECREATIONAL FACILITIES
- I. MAJOR THOROUGHFARES AND INTERSECTION ACCIDENT SITES
- J. PUBLIC TRANSIT ROUTES & SERVICE AREAS

INTRODUCTION

In the late 1950s, the Wilmington Comprehensive Development Plan was prepared and adopted. It consisted of a Citywide Land Use Plan and fifteen individual plans which addressed the land use and zoning issues for each of the separate neighborhood analysis areas or planning districts. The West Center City Analysis Area (WCC), one of the thirteen planning districts, was included in the original 1957 comprehensive plan. The boundaries of the WCC are shown in Map A. This document supercedes and updates the 1957 West Center City Analysis Area Comprehensive Development Plan as well as the 1968 West Center City Urban Renewal Plan and its specific land use, regulatory, and development controls and sets forth goals for the WCC's long-term growth and development over the next 10-15 years.

A companion document, the **West Center City Analysis Area Community Notebook - October 1999**, and a detailed land use map were developed by Department of Planning and Development staff after completing a cursory analysis and inventory of the WCC's social, legal, economic, environmental, political and other factors (commonly referred to collectively as SEE Factors) and items of general public interest. The Community Notebook, designed to be a statement of facts which contains virtually no analysis or consideration of City policy, is not intended for adoption as part of the WCC Comprehensive Development Plan. Instead, the **West Center City Analysis Area Community Notebook - October 1999** was disseminated to the public in order to provide a data base for neighborhood residents and City staff and to be a basis for further discussion.

The draft **West Center City Analysis Area Community Notebook - October 1999** was disseminated to the WCC residents and interested persons attending the first public meeting held in November 17, 1999 for review and comment pursuant to SEE Factor analysis within the WCC. The residents responded with suggestions for subsequent **West Center City Analysis Area Community Notebook - October 1999** revisions and for future public meetings. Staff from other City Departments also reviewed and provided comment on the **West Center City Analysis Area Community Notebook - October 1999** prior to its distribution at the November 17th public meeting. Copies of the draft **West Center City Analysis Area Community Notebook - October 1999** were also disseminated at other public meetings held in WCC neighborhoods for review and comment prior to finalization.

Based on the draft **West Center City Analysis Area Community Notebook - October 1999**, issue-oriented discussions were held at WCC public input forums and meetings. Through expressed input and ideas, the attendees at the public input forums and meetings demonstrated their willingness to be active WCC stakeholders and to partner with resource providers to improve the WCC as a desirable place to live and raise a family. Proposed action steps to address the identified concerns in the form of policy statements and policy recommendations were developed. Likewise, this stakeholder input and participation formed the basis for community consensus and support for developing plan recommendations.

The WCC Comprehensive Development Plan contains recommendations which, when implemented, have been designed to satisfactorily address the identified concerns. The recommendations have been reviewed by the appropriate departments and agencies and their input considered before the Comprehensive Plan was finalized. Therefore, the West Center City Analysis Area Comprehensive Development Plan's recommendations provide a strategy and framework to guide, direct, and

influence the future growth and development of the WCC's communities and neighborhoods.

This Comprehensive Development Plan is not static and is meant to be amended as the need arises and as the West Center City Analysis Area changes. When conditions change significantly which may prompt changes to the WCC, amendments to the Comprehensive Development Plan should be made. Any resulting plan amendments or updates should be adopted only after thorough and comprehensive analysis of the changes and the impacts that they may have on the WCC. Likewise, significant public participation and opportunities for input and dialogue concerning the proposed changes and their anticipated impacts should occur such that community consensus is achieved concerning the proposed plan amendments or update. The analysis effort and community consensus should be achieved prior to approval by the City Planning Commission and by City Council.

II. GENERAL CHARACTERISTICS OF THE WEST CENTER CITY ANALYSIS AREA

A. WCC Boundaries and Natural Land Form Description

The West Center City Analysis Area (WCC) boundaries include Adams Street and Interstate 95 on the west; Lancaster Avenue/Martin Luther King Boulevard/2nd Street on the south; Tatnall, West, and Jefferson Streets on the east; and 7th, 8th, 9th, Delaware Avenue on the north. These boundaries also define Census Tracts 16 and 21 (See Map A).

Overall, the WCC's topography and land form is characterized by a flat-topped ridge and hills that gently slope towards the Christina River (south and southeast) and towards a former stream, Shipley Run, that flowed roughly parallel to current day Monroe Street into the Christina River but long buried by development. The WCC's peak elevation of approximately 110 feet above sea level is located near the intersection of Adams Street and Pennsylvania Avenue. From this peak elevation, the WCC slopes and gradually drains towards the former stream named Shipley Run, Martin Luther King Boulevard, and ultimately towards the Christina River. Consistent with the topographic pattern displayed therein, the lowest point within the WCC is about 20 feet above sea level and located in the vicinity of the Adams Street and Martin Luther King Boulevard intersection.

B. Land Use Descriptions

1. Parking and the Local Street Network

The WCC's surface transportation network is a grid network with the boundary arterials linked by collectors and fed by local streets at the local neighborhood operating level. With the exception of Delaware Avenue, the WCC's boundary streets operate as one-way streets as do the interior local streets. In similar manner, with the exception of West 4th Street, the WCC's traffic flow patterns consist of one-way local streets, few which operate in a traditional matched pair scheme. Because the WCC's overall residential development is primarily row houses with seemingly low auto ownership per capita or per dwelling unit, field observation has revealed that on-street parking and off-street parking opportunities continue to serve the parking needs of most residents with hardly any observed instances of auto parking inspired congestion. It should be noted that auto parking congestion, as an exception to this observation, occurs on Sundays and is directly related to church attendance since it is noted mainly in mornings and early afternoons. What's more, field observation noted persons walking to and from parked cars and churches. By late afternoon or early Sunday evening, virtually all evidence of auto parking congestion has disappeared.

Field observation also revealed that in several blocks, apartment buildings contain internal parking garages or interior parking lots in order to accommodate their tenants' parking needs. Additionally, the Trinity Vicinity residential areas closest to Delaware Avenue and the Quaker Hill residential areas closest to the CBD's western fringe appear to be experiencing the greatest amounts of competition for on-street parking spaces, albeit typically during the business work week (i.e. 8am to 6pm). Field observation also noted that some residents park their cars in alleys and driveways directly behind their homes.

2. Transportation for the Public

Taxi companies and other private transportation service companies provide limousine and other types of pre-scheduled or on-demand for hire transportation service to WCC residents (i.e. non-emergency assisted medical) for trips to airports, hospitals, and other destinations. Because this service is pre-scheduled, depending on the provider, it can be available 24 hours per day, 7 days per week primarily using sedans, vans, or small buses (i.e. body on chassis modified vans).

Because of the WCC's location proximate to the public transit system's major transfer point, a significant number of DART 1st State bus routes traverse it. These include Routes 4, 5, 6, 8, 9, 10, 19, 20, 23, 24, 28, 32, 33, 36, 40, 59, and 301. However, only a very small number of these public transit routes actually provide on-off service to customers seeking to board or alight within the WCC. Most of the aforementioned bus routes operate closed door service within the WCC via Martin Luther King Boulevard, West 2nd Street, I-95, or Delaware Avenue - simply using these roadways for passage through the WCC while permitting passengers to neither board or alight.

In October 1999, twelve DART 1ST State bus routes provided service to WCC residents linking it with the Wilmington CBD and, via transfers, to other locations throughout Delaware. By using thoughtful trip planning, a WCC resident's public transit travel options can be extensively broadened by using DART 1ST State, New Jersey Transit Corporation (NJT) buses and Southeastern Pennsylvania Transportation Authority (SEPTA) trains in the Wilmington CBD as well as AMTRAK to reach destinations within the mid-Atlantic region and beyond. What's more, the same thoughtful trip planning can become multi-modal and international since DART 1st State and SEPTA serve regional or international airports.

DART 1st State also provided a paratransit service (formerly known as DAST) for persons certified as eligible for such service under the guidelines of the Americans with Disability Act (ADA). The eligible are persons unable to use regular fixed route, fixed schedule bus service. As configured in October 1999, the DART 1st State paratransit service's operating parameters essentially mirrored the characteristics of fixed route service. There are, however, key differences between fixed route services and paratransit services including advance reservation required for demand-response service versus walk-up service at any designated bus stop for fixed route, fixed schedule service and its widespread availability as well as customer cost for service differences (i.e. \$2.00 flat fare versus zone fares & multi-ride passes for fixed route service).

Commonly accepted transit operations planning standards for measuring and evaluating the public's access to public transit service reveal that any site within 1,320 feet of a bus route is typically served by it. While not the case in WCC, there are exceptions to this standard that may occur if there are land forms which create physical barriers to a bus route. Moreover, DART 1st State's paratransit service operates door-to-door in the WCC to serve persons registered for this service. Therefore, all of the WCC (See Map H) is accessible to some form of DART 1st public transit service.

3. Residential, Commercial, Public, & Institutional Land Use Descriptions

The WCC generally consists of essentially five land use types including residential; commercial; manufacturing; institutional/public/quasi-public; and open space. Among these, residential is the primary land use category since WCC's land uses in this category constitute the majority of the

WCC's land area. What's more, the WCC has been the site of several urban renewal programs as well as on-going public and private non-profit community revitalization efforts whose focus has been housing. Because of this, the WCC contains pockets of housing less than 10 years old mixed in with housing that is nearly 100 years old. Likewise, while the WCC has experienced much deterioration during the last 15-25 years, the Lafayette Boulevard neighborhood as well as Trinity Vicinity and the Quaker Hill neighborhoods are examples of large scale WCC residential areas that have witnessed strong urban renewal and revitalization efforts. There are also other scattered examples of small scale residential revitalization occurring within the WCC on individual parcels and properties. Additionally, some of the existing single housing stock has been converted from semi-detached dwellings to apartments and from one family row houses to multi-family units.

While the WCC is predominantly residential, there is also appropriately scaled neighborhood commercial and retail establishments that provide the goods and services commensurate with those needed by typical urban residential areas. Within the WCC, the Adams Four Shopping Center is its largest retail commercial area. Outside of this shopping center, however, in October 1999 there were actually very few neighborhood level stores and commercial areas situated along the busiest streets and roadways within the WCC which offered the products and goods necessary to satisfy the local residents' broad range of demand for goods and services. Currently, the main commercial and retail corridors within the WCC are West 4th Street, West 9th Street, Washington Street, and, to a limited extent, Delaware Avenue. In addition, field observation revealed that few of the WCC's streets have small retail outlets on them.

Because the WCC is close to the Wilmington CBD, many retail and commercial establishments normally associated with a CBD are located either within the WCC; along the street approaches to the WCC; or in areas immediately adjacent to WCC boundaries. The increasing use of personal computers, the Internet, and fax machines has resulted in an increased number of home based businesses and small professional offices locating along the WCC borders. These small businesses rely on the WCC's proximity to the CBD for ease of access to clients and customers. For example, located along the WCC's eastern perimeter are commercial land uses which house banking, doctor or dentists offices, insurance, professional business computer application training offices, and other types of professional service providers in both low-rise and high-rise commercial buildings. What's more, the WCC houses several large surface parking lots located within easy walking distance of several major high-rise buildings which constitute significant CBD employment centers. Finally, within the WCC there are a number of churches, day care centers (for both infants, children, and elderly seniors), and social service agencies.

Recently, several transportation construction projects have been undertaken to improve linkages between WCC and the emerging commercial area along the Christina Riverfront. The transportation projects currently under way include:

- a redesign of Martin Luther King, Jr. Boulevard to make it more pedestrian friendly and less prone for high speed travel between King and West Streets;
- an extension of West and Tatnall Streets to their former segments located on the south side of the AMTRAK Viaduct adjacent to the Christina Riverfront;
- remedial traffic engineering reconstruction to improve right turn movements at the intersection of Martin Luther King, Jr. Boulevard and Madison Street; and

- traffic lane realignment and signal installation at the intersection of Madison and West 2nd Streets.

Each of these transportation improvement projects are designed to improve and increase the number and quality connections between WCC and the emerging riverfront commercial areas.

4. Parks, Recreation, & Open Space Land Use Descriptions

As described in the **West Center City Analysis Area Community Notebook - October 1999**, there is limited recreational land or open space within the WCC that is available for the general public. An inventory analysis of the recreational areas within the WCC reveals that while its major large recreational areas are primarily clustered together, there are a few small tot lots and pocket parks scattered throughout the WCC. The tot lots and pocket parks are play areas created when former buildings were razed and their footprints made into small public parks. The WCC contains three playgrounds (one located adjacent to the McDonald's Restaurant on West 4th at Madison Street and two that are City-owned playgrounds at Helen Chambers Park and the Jennie Weaver Playground), one City-owned park and one multi-purpose recreational center.

Helen Chambers Park has a total area of 1.73 acres, the West Center City "Hicks Anderson" Community Center covers an area of 1.38 acres, the open space play area adjacent to McDonald's on W. 4th Street of less than .50 acres, and the Jeanne Weaver Playground has an area of about .40 acres (Map F). Even when combined, WCC contains substantially less park land per person than the Citywide average of one acre for every 272 persons. There are additional recreational areas (Cool Spring Park, Brandywine Park, Tubbman-Garret Riverfront Park, Frawley Stadium, and Kirkwood Park) located nearby but outside the WCC boundaries. Only two, Cool Spring Park and Tubbman-Garret Riverfront Park, may be considered within the upper range of reasonable walking distance from the WCC boundaries.

Using the WCC's 1990 total population and the number of acres devoted open space and recreation, there are approximately 1,275 people per acre of park land within the WCC. Similarly, establishing an age bracket of persons 18 and under and then assuming that persons in this age category would most likely be interested in going to parks, there are approximately 386 people per acre. Therefore, when the Citywide average of one acre of park land for every 272 persons is compared to WCC's adjusted park land per person averages, it is clear that WCC's park land acreage per person average are significantly less than the Citywide average.

The West Center City Community Center also known as the William "Hicks" Anderson Center is a multi-purpose community center. The center houses basketball courts, a swimming pool, weight training and fitness center as well as numerous offices and classrooms. The Community Center is also the site of public meetings as well as many community activities and programs that operate both seasonally and year-round.

Surrounded on all sides by residential areas, Helen Chambers Park is a 1.73 acre park in the WCC. The park is encompassed by West 7th Street on the north; West 6th Street on the south; North Madison Street on the east; and North Monroe on the west. The park contains one basketball court, two tennis courts, steel play equipment for children, baseball field and a grassy area that is frequently

used by local churches and civic groups for community activities during the summer months. Helen Chambers Park is heavily used as the City sponsors summer recreational programs at this site. The park's grassy area is also the site of tent revivals and open air community festivals during summer months by churches and community organizations in the area.

Field investigations by the Delaware Department of Natural Resources and Environmental Control (DNREC) in the City of Wilmington have uncovered numerous sites containing buried hazardous materials and toxins. These investigations revealed that the buried and discarded materials were once associated with no longer functioning industrial and manufacturing processes. Within WCC, for example, on October 26, 1998, about six test pits were dug in Helen Chambers Park as part of a preliminary environmental and geotechnical evaluation for the proposed development of a regional swimming pool complex within this park. Environmental and geotechnical laboratory testing was performed on selected samples obtained from the excavated test pits. Highly variable miscellaneous fill, including debris and substances of environmental concern, was encountered throughout the site during the exploration from depths as shallow as 2.5 feet to as great as 13 feet. While no environmental remediation strategies for this site were identified or recommended for implementation at the time of the excavation, Wilmington City Council Resolution 99-096 was passed on August 12, 1999. That resolution requested a legal opinion from the City Solicitor's Office identifying whether it is safe for children to continue playing at the park and to draft an appropriate notification regarding the same for distribution to residents surrounding the park.

At the December 8, 1999, WCC Comprehensive Development Plan public meeting that was held at the Hicks Anderson, staff from the Delaware Department of Natural Resources & Environmental Control (DNREC) presented the latest findings pursuant to the debris and substances of environmental concern buried within Helen Chambers Park. The Delaware Department of Natural Resources & Environmental Control information on Helen Chambers Park was presented in a fact sheet which is included in this document as Appendix A.

A special public meeting was held on February 9, 2000 at the Hicks Anderson Community to provide information to the public concerning DNREC's findings at Helen Chambers Park. At this meeting it was announced by DNREC that its research found hazardous materials and cancer causing toxins at shallow depths (about 6 to 12 inches below the surface) of the grassy area of Helen Chambers Park as well as at the deeper levels that were noted in 1998 Duffield Study. The assembled persons requested that the toxins be expeditiously removed and that access to the Park's grassy area be prohibited by fencing it. The City Officials present agreed to install a fence around the Helen Chambers Park grassy area. The City Officials present also agreed to undertake a more detailed study of Helen Chambers Park with the goal of creating a remediation plan and an implementation timetable for the Park. No other commitments were made at this meeting about timetables for cleaning up the Park.

Field observation in February 2000, revealed that signs had been posted on the existing fence stating that the park was closed and that no digging was permitted in the grassy area.

C. Description of WCC Demographics & Housing Statistics:

The WCC is comprised of Census Tracts 16 and 21. Accordingly, the analytical focus on the demographic and housing statistical data was on each census tract as contrasted against the City overall. In addition, the data for each census tract was combined to present a single image of the WCC as a whole and it too was contrasted against the overall City. Contained within the **West Center City Analysis Area Community Notebook - October 1999** are tables which delineate the aforementioned analysis for each census tract and for the overall WCC as well as contrasting it against the overall City. Within the **West Center City Comprehensive Development Plan - December 1999**, the salient points of the analytical findings from the demographic and housing statistics as delineated in the aforementioned document will be largely summarized for the total WCC.

1. Current Population:

In the last twenty years, the WCC's overall population has experienced dramatic population swings. In this regard, both Census Tract 16 and Census Tract 21 experienced population swings. From 1970 to 1980, the Census Tract 16 population decreased by about 38.41% and Census Tract 21 population decreased by nearly 45.2%. During the period 1980 to 1990, by contrast, Census Tract 16 population increased by nearly 25.2% and Census Tract 21 population increased by nearly 76.2%. It is noteworthy that population increases were largely due to new construction of row houses and apartment units especially south of West 4th Street.

By comparison, between 1970 and 1980, the City's overall population decreased by 12.7% the population of the overall WCC decreased dramatically by about 41.1% from 5,267 to 3,100 during the same period. Similarly, during the 1980 -1990 period, the City's population increased by about 1.9% while the WCC population increased between 1980 and 1990 by nearly 44.35%, from 3,100 in 1980 to 4,475 in 1990. Based on the 1990 Census, the WCC population was 4,475 and comprised about 6.26% of the City's total population of 71,529.

2. Minority Population:

During the period 1970 -1990, unlike the racial composition of the City overall which changed dramatically, the racial composition of the WCC shifted slightly but overall remained fairly constant. The City's overall population decreased from 80,386 to 70,195 in 1980 and increased to 71,529 in 1990. Within this population swing, the racial City's overall racial composition also shifted, from about 56% white in 1970 to nearly 63.2% minority in 1990. By contrast, the WCC's demographic shifts within the resident population were far more constant and considerably less dramatic. During 1970-1990 period, the WCC resident population shifted from about 27% white and 73% minority to about 22% white and nearly 78% minority.

3. Age of Population:

The 1990 Census data for age distribution in the WCC indicates that nearly 30.3% of the residents are under 18, about 63.0% are between 18 and 64, and nearly 7% are over 65. When compared against City wide figures, the comparison reveals that WCC has a higher number of persons under 18 years of age; more people who are in the 18-64 age bracket, and fewer persons who are 65 years

of age and over.

The percentage of the WCC population under 18 gradually shifted from 37.1% of the population in 1970 to 36.94% in 1980. This population segment registered a further dramatic shift in 1990 by decreasing to 30.26% of the WCC resident population. The population segment between the ages 18 and 64 increased slightly between 1970 and 1980 from approximately 52.7% to about 54.7% and increased again in 1990 to about 63%. This increase may in part reflect the maturation of those that were under 18 in 1980 but most likely reveals the in-migration of this age group into WCC. The segment of the population over 65 has shown a steady decrease between 1970 and 1990, dropping from about 10.25% in 1970 to approximately 8.35% in 1980 to nearly 6.84% in 1990.

4. Gender:

In both 1970 and 1980, the WCC and the City had slightly different ratios of male to female residents. For example, in 1970, the percentage of WCC males was nearly 48.6% and for females, it was about 51.4%, by comparison the City's overall gender profile was nearly 46% males and about 54% females. In 1980, the WCC gender profile percentage was about 46.7% male and nearly 53.3% female. By contrast, the City gender profiles in 1980 changed only slightly to about 44.8% males and nearly 55.2% females. In 1990, WCC gender profile was about 46.8% male and nearly 53.2% the percentage of males. For the City, the gender profile was nearly 46.5% male and about 53.5% female.

5. Income:

A review of the **West Center City Analysis Area Community Notebook - October 1999** data category concerning income reveals that the WCC's overall income was below the Citywide averages. What's more, a closer examination reveals that there is a substantial difference between Census Tract 16 and Census Tract 21. Likewise, this examination also reveals that there was a smaller variance between WCC's Census Tract 16 and the Citywide performance than between Census Tract 21 and the Citywide performance.

For example, in 1980 the WCC's Census Tract 16 income data revealed that the mean household income was \$15,406 and Census Tract 21 had a mean household income of \$9,259 or a difference of \$6,147 or about 39.9%. This is contrasted against a Citywide 1980 mean household income of \$16,333. Similarly, in 1990 Census Tract 16 had a mean household income of \$32,192 and Census Tract 21 had a mean household income of \$20,758 while the Citywide mean household income in 1990 was \$35,060. While both WCC Census Tract 16 and 21 had mean household incomes which were below that of the City's, the data clearly shows that the magnitude of the gap between the Census Tract 21 mean household income was even greater than that of Census Tract 16 when compared against the Citywide mean household income.

Reviewing the 1980 and 1990 U.S. Census data regarding low & moderate income households reveals that the WCC's had a higher percentage of low & moderate income households than the Citywide average. For example, in 1980, the WCC had approximately 52.7% low-income households while there were about 36.5% located throughout the City. In 1990, the WCC had about

48.9% low-income households while 40.8% were scattered throughout the City. The data indicated that while the gap is decreasing, the WCC still has a higher percentage than the overall Citywide average.

6. Employment:

In the **West Center City Analysis Area Community Notebook - October 1999**, the employment characteristics of the WCC's Census Tract 16 and Census Tract 21 are examined and contrasted between each other as well as against the Citywide employment characteristics. The findings from this analytical effort reveal the reasons for the variance in mean household income in subtle differences both the 1980 or 1990 occupational categories of the residents and the responses within each. For example out of thirteen occupational categories in 1990, Census Tract 16's recorded rate of participation was below the Citywide-figures in eight of them. Similarly, Census Tract 21's recorded rate of participation was below the Citywide figures in seven of them. Even when the recorded rate of employment participation in the identified occupational for Census Tract 16 and Census Tract 21 are combined into a single WCC total, this total remains below the Citywide figures in seven of the thirteen occupational categories.

7. Housing & Household Characteristics:

A review of housing & household characteristic data from the 1980 and 1990 U.S. Census, reveals that, on average for both periods, the overall WCC had a higher percentage of rental housing units; a higher percentage of female-headed households; and a lower percentage of vacant units than did the overall City. Also between 1980 and 1990, the percentage of owner-occupied housing units in the WCC increased, from 18.64% to 25.89%, while the Citywide percentage of owner-occupied housing units increased slightly by 1.51% for the same period. Between 1980 and 1990, the number of owner occupied units in the WCC increased by 194 units, from 321 to 515, while the number of rental units increased dramatically from 708 to 1227. In 1980, the WCC's median gross rents were nearly 28% lower than those Citywide; this difference decreased slightly in 1990 as WCC median gross rents were about 13.4% lower than those Citywide.

Between 1980 and 1990, the percentage of families in the WCC with a female head of household increased from slightly more than 53.7% to about 56.2%. These rates are well above the Citywide figures of nearly 34.7% and 38.2% for the same years. Moreover, while the City's vacancy rate decreased between 1980-1990, from 11.7% to 8.6%, the WCC's vacancy rate of 37.98% in 1980 decreased dramatically to 12.42% during the same period.

III. RECOMMENDATIONS PROPOSED FOR THE WEST CENTER CITY ANALYSIS AREA

Overall, the majority of residential blocks within the WCC are in fair-to-good physical condition and some are in excellent condition. Field observation of external housing conditions and of review of public records pursuant to housing code inspections and violations by the City's Department of Licenses & Inspections reveal that many buildings and residential dwelling units within the WCC are currently boarded up, i.e. vacant and secure. Further, many dwelling units have also been cited for housing code violations. When follow-up inspections have been conducted, many of these meet the lowest threshold of housing code inspection standards. However, there are specific residential dwelling units within the WCC but which have been identified as marginally fit for human habitation and actions are underway by the City to remedy this situation. Collaborative partnerships involving public and private nonprofit agencies whose main thrust is housing rehabilitation in WCC is gaining momentum.

As major gateways into the Wilmington CBD, the WCC's streets and sidewalks receive considerable use. The streets and sidewalks are generally in good condition with few of them needing major re-surfacing or re-construction except for those limited high traffic areas which experience extremes in wear and tear as well as weather related pavement breakdowns. There are, however, issues of concern which were discovered during field observations and revealed via input from attendees at the WCC public meetings. What's more, the strategic location of the WCC, as well as its history, places its streets on a fast track for needed capital improvements.

Transportation projects impacting the flow of traffic through the WCC began to move from concept to implementation. Many of the transportation projects are focused on improving access into the Wilmington CBD and the riverfront area and to the emerging commercial center along the Christina Riverfront. Contained within this report will be recommendations for transportation projects which will improve traffic movement within and directly benefit WCC. More detail on transportation recommendations specific to the WCC are delineated herein.

Consistent with sound comprehensive urban planning practice, the WCC Comprehensive Development Plan received public review and public input which was included into the plan's preparation and development process. It was stressed repeatedly at the public input meetings that the Comprehensive Development Plan's public policy goals would reflect the community's collective interests pursuant to enhancing and strengthening the indigenous communities by addressing their multi-faceted needs. Given this, residents requested recommendations to increase the number of owner-occupied residential dwellings within the WCC. Similarly, public input recommended that economic development should be spurred within the WCC particularly along its major traffic corridors. Others stated that recommendations should address issues concerning various social, environmental, and transportation concerns of residents.

Given the public input concerns and the field observations, a series of recommendations have been developed for the WCC. The following are preliminary land use and zoning as well as other types of recommendations for the West Center City Analysis Area (WCC). Maps D-1 through D-4 depict the WCC's proposed land use zoning recommendations.

A. Land Use and Zoning Recommendations (2000)

1). Recommendation - It is recommended that the existing C-1 zone located at the intersection of Madison and West 7th Streets and which straddles both sides of Madison Street while extending mostly north along the west side of Madison Street be re-zoned to R-4. This rezoning is proposed because it's with the surrounding land uses and will better guide future land use decisions for the overall area's proposed pattern of growth and development (See Map D-1).

Presently, the existing C-1 zone contains two types of land use activities, neither of which is a neighborhood commercial or retail store. Located on the east side of Madison Street and extending north, from the intersection West 7th and Madison Streets to about mid-block of Madison between West 7th and West 8th Streets, is the West Center City Day Care Nursery, Inc. On the west side of Madison Street, between West 7th and 8th Streets, is the YWCA Home Life Management Center. This is a residential social services program for females and their children that are or have been victims of domestic violence.

Rationale - There are several reasons for this re-zoning recommendation. First, there are currently no neighborhood commercial land use activities occurring within this zone. Second, the land use activities that are occurring within this zone are commensurate with those delineated as R-4 Uses Permitted As Matter of Right. Third, the existing C-1 zone is surrounded on three sides by residential zones - on its eastern and western sides by R-4 zones and by an R-3 zone to the north. To the south of this C-1 zone is located Helen Chambers Park, an Open Space zone. Fourth, implementing the proposed re-zoning for this area will make the area's zoning category consistent with the actual land use activity occurring within it and surrounding it. Moreover, this proposed re-zoning is part of comprehensive package of re-zoning recommendations for the WCC.

2). Recommendation - It is recommended that the residential areas bounded by Madison Street on the west; West 2nd Street on the south; West 4th Street on the north; and generally by West Street on the east and presently zoned R-5B be re-zoned R-3 (See Map D-2). The proposed rezoning is suggested to be appropriate with existing residential land uses, will conserve the single family row house character of this area, and will guide future land use and zoning decisions as they impact the area's proposed pattern of growth and development.

Rationale - The residential areas, presently zoned R-5B and bounded by Madison Street on the west; West 2nd Street on the south; West 4th Street on the north; and generally by West Street on the east are part of a recent 1968 West Center City Urban renewal program (See Map D-2). The land use activities within the aforementioned area contains one family row houses of various ages. The housing units contained therein are a mix of various ages but are generally occupied by the owner occupant. If the row house is a rental unit, it has not been converted for multi-family use and therefore houses only a single family. What's more important however, as evidenced by well kept exteriors and rear yards, is the overall condition of this area's housing stock which reflects a demonstrated pride in home ownership and a commitment to keeping the surrounding area well kept also.

This area's row houses are part of the overall 1968 West Center City Urban Renewal Project which included the construction of the aforementioned row houses bordering on Lafayette Boulevard. But more than that, the row houses bordering on both sides of Lafayette Boulevard are single family units which are well kept and have not been converted for use by two or more families. Extensive field observations of this area reveals that the front yards and rear yards and even the public alleys are well kept. Field observation also reveals a residential makeup that includes strong values and solid incomes, as persons living in this area appear to have household incomes which allow them to drive well kept late model automobiles. In summary, the single family row areas bordering on Lafayette Boulevard have all the visible exterior signs and symbols of a area that is populated by residents who care about both their homes and their neighborhoods.

At the same time, the row houses located on West 4th Street between Madison and Washington Streets are part of the Quaker Hill City Historic District and include some of the City's older homes. These row houses along the south curb of West 4th Street are well kept and, like the Lafayette Boulevard community's row houses, have not been converted for use by two or more families. The row houses located on the south curb of West 4th Street between Washington and West Streets Jefferson are newer units and not included in the Quaker Hill City Historic District but are single family units which have not been converted.

By contrast, the R-5B district which permits, as a matter of right, any use permitted in R-4 districts, also permits more intense land use activity than that permitted in an R-4 district. The R-5B district medium is designed to accommodate density elevator apartments with ample light and air at medium or high rentals. Historically, R-4 uses typically include row houses with conversions where the landlords are absent. Within the WCC, field observation and empirical evidence of its other R-5B areas have revealed that the permitted uses, especially row house conversions and absentee landlords, have been found to have a deleterious impact on an area's single family row house residential character.

Input at the WCC comprehensive plan public meetings stated a preference for increasing the number of owner occupied residents dwelling within the WCC. Past practices indicate that, in all probability, maintaining the R-5B designation for this area would not serve to preserve its single family row houses or its unique urban single family row house character. On the contrary, an R-5B district permits, without zoning board of adjustment approval, the conversion of the single family row houses into multiple family units.

This area's location on one of the City's major east-west transportation gateways that is proximate to several nearby high interest areas coupled with the land uses permitted in an R-5B zone would most likely undermine the area's owner occupied single family character and lead to its deterioration. If real estate speculation via row house conversion was permitted to occur, without zoning board of adjustment approval, adversely impact this important gateway and residential community. The results of the wholesale row house conversion, with a rise in absentee landlords and direct decrease in owner occupied home ownership, would most likely have a negative impact on these residential areas and be counter to the expressed interests of WCC residents

3). Recommendation - It is recommended that the R-4 zone presently bordered by West 7th Street on the south; West 8th Street on the north; Monroe Street on the west; and Thornton Place on the east be expanded to the west and south. The proposed R-4 district expansion would be west along West 7^{1/2} Street to Adams Street and south from West 7^{1/2} Street to West 4th Street (See Map D-3). The revised R-4 district would encompass the aforementioned residential areas between Adams and Monroe Streets and connect with existing R-4 district currently located east and south of the Open Space District which houses the West Center City Community Center.

4). Recommendation - It is recommended that the existing R-4 district currently located east and south of the Open Space District which houses the West Center City Community Center be extensively expanded within the WCC. The revised R-4 district's southern boundaries would be expanded as shown on Map C-3 resulting in a comparable decrease of the R-5B district's overall area.

The re-zoning, as proposed, would limit the number of residential conversions to those that exist currently within this zone and make them a non-conforming land use. What's more, the residential areas would be re-zoned to R-4 for existing land use activities in order to guide future growth and development considerations. Under the proposed R-4 re-zoning, future requests to convert row houses to multi-family use would require approval by the zoning board of adjustment in order for the future conversions to occur within the areas re-zoned as shown in Map D-3.

Rationale for Recommendations 3 & 4 - There are several reasons for these two recommendations. On the one hand, citizen input received at the WCC Comprehensive Plan Development public meetings revealed that the meeting attendees want to increase the number of owner-occupied residents within the WCC as contrasted with an increase in the number of absentee landlords. Their comments also revealed an interest in decreasing or at least holding the line against increasing the amount of rental housing and converted row house units that are available within the WCC.

The meeting attendees identified neighborhood decline associated with irresponsible renters and absentee landlords resulting from row house conversions as a major concern. Also, numerous studies have cited and linked the decline of neighborhoods to a high incidence of rental housing, negligent absentee landlords, and lax enforcement of housing code regulations. Likewise, studies have found that when all other socio-economic variables are held constant, renters tend not to demonstrate the same level of commitment and concern for a neighborhood as do homeowners residing in the same area. Therefore, as an effort to curb the WCC's decline, residents want an increase in home owners living in this analysis area.

On the other hand, the WCC's recent history has shown that it has experienced strong demand for rental housing which has been satisfied through the conversion of one-family or two-family dwelling units to accommodate additional families. Therefore, an increase in owner occupied dwellings in the WCC without a commensurate increase in new housing construction elsewhere will result in a net decrease of the number of WCC's residential dwelling units available for rental. What's more, although the WCC has seen small scale housing construction on some its vacant lots as well as the rehabilitation of abandoned dwellings for use as one-family dwellings, this activity has produced small increases in the WCC's residential units overall.

While everyone should be able to live in a dwelling that safe, sanitary, and affordable, not everyone has the inclination or economic resources necessary to purchase a home. For these people, there should be rental units available within the City that satisfy this group's housing need and the WCC's rental stock addresses this need.

Given the WCC's physical location, it has excellent access to DART 1st State bus routes, the AMTRAK Station, and the intercity bus station which gives it a certain appeal among those persons who do not own or operate reliable personal transportation.

It should also be noted that not every WCC rental unit or absentee landlord's property is poorly maintained. Therefore, a blanket restriction against the conversion of one-family or two family dwelling units into one which accommodates additional families would adversely impact those persons seeking rental housing. Also, a blanket restriction against converting one-family or two family dwelling units into those which could accommodate additional families adversely impacts responsible landlords regardless of residency, persons seeking rental units, and the WCC. Accordingly, by re-zoning the R-5B area to R-4 will create a situation that permits conversion of one family or two-family dwellings into those which could accommodate additional families provided that prior approval is obtained by the Zoning Board of Adjustment.

As proposed, reducing the WCC's overall R-5B zone would include a commensurate and simultaneous expansion of its R-4 zone.

5). Recommendation - It is recommended that the southern boundary of the R-4 zone currently located approximately in the WCC's center and bounded by West 7th Street on the north; Madison Street on the west; and Jefferson Street on east be changed from its present location.

The existing R-4 zone's southern boundary is located generally such that it runs mid-block in an east-west fashion parallel to West 5th Street on the north while not uniformly following property lines or parcel lines for the parcels and properties located on blocks bounded by Jefferson Street on the east; Monroe Street on the west; and West 5th Street on the north. In some instances, the existing R-4 boundary line actually bisects the aforementioned residential parcels and blocks.

As proposed, the change would shift the R-4's southern boundary from its current location running mid-block in an east-west fashion parallel to West 5th Street on the north while not uniformly following property lines or parcel lines to one that was largely congruent with the aforementioned property lines and public easements. Similarly, the proposed shift of the R-4 boundary would eliminate it from bisecting residential properties by placing along the property lines and existing public easements.

Rationale - Currently, the R-4 zone's southern boundary, located south of and parallel to West 5th Street, frequently splits dwelling units. As such, this boundary line dissects existing parcels not along property or lot lines; but through the existing residential structures in manner such that some rooms in the same dwelling appear to be placed in different land use zones. Planning staff recognized this error and has initiated a systematic approach throughout the City to correct any identified misaligned zoning boundaries. This approach has been successfully applied in the Northwest Analysis Area and in Bancroft Parkway neighborhoods to correct misaligned zone boundaries with neither public opposition nor adverse impacts on the community.

If approved and implemented as recommended, the revised R-4 southern boundary would not adversely impact any existing residential land uses. It would, however, rationalize the R-4 zone boundaries by making them consistent with the existing land uses within the aforementioned parcels and promote the use of streets, alleys, and other public easements as well as property lot lines as the designated physical features for this zone's boundary designations.

As recommended, re-zoning the C-1 zone to R-4 would make it consistent with the surrounding land uses. What's more, the land use activities presently occurring within this zone are more in line with those described as a matter of right for an R-4 zone.

As recommended, re-zoning the C-1 zone to R-4 would make it consistent with the surrounding land uses. What's more, the land uses activities presently occurring within this zone are more in line with those described as a matter of right for an R-4 zone.

6). Recommendation - It is recommended that the Adams Four Shopping Center be redesigned so that the stores and merchants located therein can have better visual exposure and windshield (i.e. curb) appeal to the vehicles traveling on West 4th Street.

Rationale - Located at the intersection of West 4th Street/Adams Street, two of the WCC's busiest streets as well as one of the City's main east-west travel corridors, the Adams Four Shopping Center is strategically situated such that it has accessibility and visibility. The merchants located therein should be able to translate this location's accessibility, visibility, and commercial value into a vibrant economic center. But the fullest economic potential of this site has not been effectively realized.

Typically, retail merchants rely on location, accessibility, and curb appeal as the most effective means of obtaining customers for their goods and services. Most retail merchants located in Adams Four Shopping Center do not have large advertising budgets to widely publicize the goods or services that are for sale for their stores. Hence, they rely on curb appeal as a form of free advertising and for increasing exposure to potential customers. For many merchants, a location's windshield appeal is a form of free advertising that helps boost sales by exposing a store's goods and services to potential customers without the costs that are normally associated with advertising. Despite this shopping center's natural advantages of location, its design, particularly when from W. 4th Street, lacks curb appeal. When viewed from W. 4th Street, most of the stores are hidden from view and its design is drab in appearance and not visually inviting and appealing. It gives a newcomer the impression of a foreboding place.

Considerable volumes of traffic, both vehicular and pedestrian, traverse the West 4th Street/Adams Street intersection. With a visually stimulating and more upscale redesign, this shopping center's location could dramatically increase its volume of commercial activity. A shopping center redesign should be created that takes excellent advantage of the opportunity for businesses located within the shopping complex to have considerable exposure to the high volumes of traffic that travel along West 4th Street. Presently, however, the shopping center is designed such the view from W.4th Street is uninviting, lacks curb appeal, and does not capitalize on an otherwise superb location.

A2. Land Use and Zoning Recommendations (Map D-4) (2012)

1). Recommendation (Area 1) – It is recommended that the existing R-4 zoning district bounded by 4th Street on south, 8th Street on the north, Adams Street on the west and Jefferson Street on the east be rezoned to R-3.

2). Recommendation (Area 2) – It is recommended that the existing R-5B and C-3 District bounded by 8th Street on the north, 4th Street on the south, an irregular boundary along Jefferson Street Street on the west and an irregular boundary along Tatnall Street on the east be rezoned to R-3.

These two areas are predominantly residential with some office and neighborhood commercial establishments. Of the residential housing stock 307 are single family properties and 161 are converted row houses.

Rational – There are several reasons for this rezoning. First, the overabundance of rental units located within these two sections of West Center City has added to instability in the neighborhood due to increased density, traffic and parking congestion. It was determined that the conversion of single family homes to apartments has significantly tipped the balance of housing toward rental units and played a role in the community’s declining homeownership rate. It is also within these two sections of West Center City that the poorest building conditions and highest vacancy rates are found. The City of Wilmington rental to homeownership rate is 48% owner and 52% renter whereas West Center City is 85% renter and 15% owner occupied. It was determined through the planning process that the neighborhood would like to increase home ownership in West Center City and decrease the number of properties converted from single family homes to apartments.

3). Recommendation (Area 3) – It is recommended that the existing R-5B zoning district bounded by 3rd Street on the north, 2nd on the south, and an irregular boundary along Madison Street to the east and Monroe Street to the west be rezoned to R-3.

Rational – This area has developed with single family row houses. There is no evidence that these homes have been converted for multi-family use. Therefore, to correctly zone what has developed in this area, and to protect the single family nature of this section of West Center City, the R-3 zoning category is recommended.

4). Recommendation (Area 4) – It is recommended that the single parcel located at the corner of the intersection of Madison and 2nd Street be rezoned from R-5B to R-5A1.

Rational – This area has been developed with two three story apartment buildings. The apartment buildings that have been constructed on this site reflect a zoning category that would be best represented by the R-5A1 zoning. Within the R-5A1 category height is limited to 5 stories. This five story height limit will serve to protect the single family row house development to the west of this site.

5). Recommendation (Area 5) – It is recommended that the area bounded by West Street and mid-block between 2nd and 3rd Streets be rezoned to R-5A.

Rational – This area is developed with 8 three story apartment buildings fronting on West Street and one commercial storage garage fronting on 3rd Street. The R-5A zoning category is limited to 3 stories and best reflects this type of development.

B. WCC's Overall Transportation Recommendations

B-1 Street and Highway Recommendations

The transportation and traffic improvement recommendations proposed for implementation within WCC have been developed to address identified problems and concerns that were noted:

- during WCC field observations;
- documented in transportation planning studies and reports; and
- in response to public input

Some of the recommended projects are listed in other documents, most notably among these are the Wilmington Studies reports; the Wilmington Downtown Transportation Study; and the Urban Corridor Studies project report. In some cases, the proposed projects can be classified as low cost; relatively easy to install, implement, or construct; and, when fully operational, provide an appreciable return on investment for an enhanced quality of life pursuant to the public's safety, health, and welfare concerning improved traffic flow. Others can be classified as transportation enhancement projects whose purpose is to enhance the transportation environment by making it more user friendly and more compatible with adjacent land uses or future development of same. Still others combine the best practices of demonstrated successful approaches to solving transportation and traffic problems with the goal of ameliorating negative unintended consequences resulting from single focus solutions.

The recommendations include the goal of using technology to the greatest degree possible to ameliorate transportation problems without new construction and its associated disruptions to the surrounding environment. For example, implementing intelligent transportation system (ITS) technology to better manage traffic movement within and throughout WCC helps address and solve traffic problems without right-of-way expansion. ITS technology can be used:

- to synchronize the traffic signals to accommodate emergency vehicle movement;
- to improve traffic flow consistent with peak travel periods, trip desires, and traffic volumes;
- and
- to increase the capability of a street to handle traffic efficiently, safely, and expeditiously without reconstructing existing roads or building new roads.

Likewise, new technological or engineering approaches to solve CBD and urban neighborhood traffic problems are emerging from the application of certain surface transportation and urban goods movement policies nationally, i.e. federally funded Congestion Mitigation/Air Quality programs.

1). Recommendation – It is recommended that intelligent transportation system (ITS) technology be applied to Delaware Avenue, West 4th Street, West 2nd Street, Washington Street, and Martin Luther King Boulevard to better manage traffic movement within and through WCC without building additional roadways or applying extensive remedial traffic engineering construction at site specific locations.

Rational – The application of ITS technology to WCC's aforementioned major streets will help

the WCC have been developed to address identified problems and concerns that were noted:

- during WCC field observations;
- documented in transportation planning studies and reports; and
- in response to public input.

Some of the recommended projects are listed in other documents, most notably among these are the Wilmington Studies reports; the Wilmington Downtown Transportation Study; and the Urban Corridor Studies project report. In some cases, the proposed projects can be classified as Transportation System Management (TSM) types of projects. Typically, TSM projects are relatively low cost; relatively easy to install, implement, or construct; and, when fully operational, provide an appreciable return on investment for an enhanced quality of life pursuant to the public's safety, health, and welfare concerning improved traffic flow. Others can be classified as transportation enhancement projects whose purpose is to enhance the transportation environment by making it more user friendly and more compatible with adjacent land uses or future development of same. Still others combine the best practices of demonstrated successful approaches to solving transportation and traffic problems with the goal of ameliorating negative unintended consequences resulting from single focus solutions.

The recommendations include the goal of using technology to the greatest degree possible to ameliorate transportation problems without new construction and its associated disruptions to the surrounding environment. For example, implementing intelligent transportation system (ITS) technology to better manage traffic movement within and throughout the WCC helps address and solve traffic problems without right-of-way expansion. ITS technology can be used:

- to synchronize the traffic signals to accommodate emergency vehicle movement;
- to improve traffic flow consistent with peak travel periods, trip desires, and traffic volumes; and
- to increase the capability of a street to handle traffic efficiently, safely, and expeditiously without reconstructing existing roads or building new roads.

Likewise, new technological or engineering approaches to solve CBD and urban neighborhood traffic problems are emerging from the application of certain surface transportation and urban goods movement policies nationally, i.e. federally funded Congestion Mitigation/Air Quality programs.

1). Recommendation - It is recommended that intelligent transportation system (ITS) technology be applied to Delaware Avenue, West 4th Street, West 2nd Street, Washington Street, and Martin Luther King Boulevard to better manage traffic movement within and through the WCC without building additional roadways or applying extensive remedial traffic engineering construction at site specific locations.

Rationale - The application of ITS technology to the WCC's aforementioned major streets will help

relieve traffic congestion and improve traffic flow within the WCC. ITS technology can be used to synchronize the traffic signals to facilitate emergency vehicle movement and to improve traffic flow consistent with peak travel periods, trip desires, turning movements, and traffic volumes. The applied technology increases the capability of a street to handle traffic efficiently, safely, and expeditiously without building new roads.

2). **Recommendation** - It is recommended that the Wilmington Police Department purchase a portable, self-contained speed display and monitoring unit (i.e. the Speed Monitoring Awareness Radar Trailer) which can be towed to various sites experiencing traffic violations of excessive speed. Once on site, this unit can be used to record speeders and issue citations.

Rationale - This type unit has been successfully used in other cities as an aid to traffic speed limit enforcement. Typically, the unit is set up in an area experiencing speed limit compliance problems and permitted to operated for 2-3 days. Coincident with this, a manned police vehicle is placed on the same street but in a different location and citations are issued to violators. Because excessive speed is a leading cause of vehicular accidents, reducing the number of speeders will lead to decreased accidents and safer WCC streets. Also, with fewer accidents requiring fewer responses, police officers can devote more time to crime prevention. Moreover, as a mobile unit, it can be set up at various trouble spots to promote compliance with the speed limit. This type of item is a value-added purchase such that the paid fines will defray the cost of the equipment.

This unit contains patented technology which clocks the speeds of motorists and collects other types of traffic data. The data can be analyzed to reveal total vehicle count; low, average, and high speed; temporal traffic volumes; and number of vehicles for each speed recorded. Newer models contain many state-of-the-art features including solar power sources, programmable message boards, and video cameras as an aid to traffic enforcement. It is also recommended that following placement and removal of the aforementioned radar unit, that active police enforcement be implemented to ticket traffic speed limit violators.

3). **Recommendation** - It is recommended that within WCC the streetscape environment of West 4th Street be enhanced commensurate with its standing as a major east-west access street, gateway into the Wilmington CBD, and multi-modal transportation corridor.

Rationale - The specifics of this project have been delineated as part of the Wilmington Downtown Transportation Study. As originally specified, this project includes major pedestrian and transit customer improvements that would also link the City's west side and east communities. The proposed project would traverse a host of major activity centers and trip generating areas including:

- the West Side Analysis Area neighborhoods that border West 4th Street between Jackson and Harrison Streets;
- I-95 entrance and exit ramps;
- the WCC's Adam Four Shopping Center and Quaker Hill Historic Neighborhood;

- the Wilmington campus of Delaware Technical & Community College;
- the Wilmington Salvation Army complex on West 4th Street between Shipley and Orange Streets;
- the emerging Ship's Tavern Commercial District on South Market Street;
- the New Castle County Courthouse project on East 4th at King Street;
- the Christina Gateway Corporate Complex along the south curb of East 4th at Walnut Street;
- the Public Safety Building Complex; and
- the remaining mixed land uses adjacent to 4th Street on the City's East Side from Walnut Street to US 13.

As recommended, designing and implementing a transportation project along 4th Street that improves linkages between the WCC and the aforementioned activity centers adds value to each. Likewise, enhancing the 4th Street streetscape environment to make it more pedestrian friendly and transit supportive, while also successfully integrating other types of vehicular traffic, creates a model inner urban gateway project. What's more, given the multi-modal nature of the aforementioned 4th Street corridor, there are unique creative federal financing opportunities that could be used to cover the cost of the overall project.

4). Recommendation - Consistent with the transportation recommendations contained within the Wilmington Downtown Transportation Study pertaining to WCC, it is recommended:

- that the direction of 6th Street be changed from eastbound to westbound between King Street and either Adams or Jackson Streets;
- that 5th Street be changed from westbound to eastbound between King and Monroe Streets; and
- that Windsor Street be changed from northbound to southbound between 6th and 9th Streets.

Implementing this change would not only improve circulation between the WCC and the CBD, but it would also change the direction of traffic flow changes for 5th and 6th Streets. This would result in an east-west one-way street system where all even-numbered streets would carry westbound traffic and all odd-numbered streets would carry eastbound traffic. Implementing this change would also make the WCC's one-way street pattern consistent with standard traffic engineering practice of pairing one-way streets together.

Rationale - A review of the WCC's existing internal surface street circulation network reveals that

it retains vestiges of the community's recent past. For example, given the documented impacts of major interstate highway construction other urban areas similar to Wilmington, it is reasonable to conclude that I-95 construction significantly changed the traffic flow of nearly all WCC east-west streets. WCC's urban renewal projects also impacted its streets. Public policy decisions changing streets within the WCC from 2-way operation to 1-way operation also occurred. Social science and urban affairs commentary of that period has shown that these types public policy decisions were typical reactions to the 1960s urban unrest. Such public policy decisions have been found to be largely inconsistent with generally accepted traffic engineering practice of seeking to improve traffic flow within urban networks.

A comprehensive review of the WCC surface street network in 1999 reveals that the WCC's internal surface street circulation network does not reflect a seamless connection to the CBD. The WCC's current street network can be extremely confusing for anyone unfamiliar with it seeking to find a location in its inner core because its unusual pattern of one-way streets. What's more, the WCC's current street network has most likely had a negative effect on economic development.

Generally, the WCC's local surface street network can be characterized as a grid. For many years preceding and including 1999, its surface traffic circulation pattern consisted primarily of one-way streets that were not linked as one-way pairs. Only W. 4th Street and Delaware Avenue handle two-way traffic. Within the WCC, north-south as well as east-west vehicular travel is onerous and largely limited to movement via one-way local streets which are not matched as one-way pairs. Implementation of the recommendation will make the pattern of one-way streets more understandable and will facilitate travel within the WCC.

5). Recommendation - It is recommended that the WCC portion of the Delaware Avenue Project, Phase I be implemented as appropriate with the non-WCC portions to be followed soon thereafter. The designs for the Delaware Avenue Project are about 85% complete.

Rationale - This project was identified as part of the Wilmington Downtown Transportation Study. As originally specified, this project includes major pedestrian and transit customer improvements, including brick, street trees, and pedestrian lighting on Delaware Avenue/10th Street between Madison and Walnut Streets, and on Washington Street between Delaware Avenue and the Washington Street bridge. Traffic circulation improvements will also be made. It will eliminate some confusing turns and make 10th Street two-way to Walnut Street.

B-2 Public Transportation Recommendations

1). Recommendation - It is recommended that the Delaware Transit Corporation, the operator of DART 1st State fixed route bus service, realign the bus stops along all its regular routes that are located within the WCC. It is also recommended that public participation be included as part of the bus stop realignment planning and implementation process.

In other cities where bus stop realignment has occurred, it has resulted in increased bus route schedule adherence, improved service reliability, and decreased operating costs since fewer buses will be required to maintain scheduled service intervals between buses. Moreover, the maintenance

costs on individual buses will also be reduced since fewer stops and starts are required. An additional benefit includes decreased traffic congestions since buses won't be required to stop as often along a bus route and traffic will flow better. An additional benefit will be the increased availability of curb space for on-street parking for residents.

The recommended bus stop realignment should also include the relocation of bus stops from the near side of intersection to the far-side of intersections as a traffic accident precautionary measure. Likewise, the bus stop realignment should avoid installation of any bus stops at mid-block locations. Coincident with the bus stop realignment campaign, it is recommended that appropriate street furniture and passenger amenities (i.e. shelters, Guide-A-Ride canisters, etc.) be installed at the bus stops to increase the customer friendliness of bus stops, increase the availability of stop specific bus route information, and thus encourage increased transit patronage.

Rationale - Increasing the attractiveness of bus stops by making them safe waiting areas and by providing accurate route and schedule information is a "Win-Win" for everyone. It promotes use of the service since increased schedule adherence leads to greater service reliability that customers expect and want. Increased patronage without increased operating costs decreases subsidy requirements and decreases traffic related congestion. Field observation reveals that while some bus stop upgrades have occurred including installation of shelters and Guide-A-Ride canisters, most do not have Guide-A-Ride canisters displaying route and schedule information. Before and after ridership studies by transit systems with extensive route and schedule information revealed that ridership increases do occur following installation of the canisters. Finally, if a bus stop realignment campaign is coordinated properly through a pro-active focused marketing and public participation effort, an Adopt-A-Stop program can be established throughout the DART 1st State bus route network within Wilmington which showcases bus stops and boosts transit ridership.

2). Recommendation - It is recommended that DART 1st State establish an ongoing program to increase public awareness of DART buses and drivers as an integral part of the community both for safety and as added dimension of the neighborhood watch or block watch programs. **Passenger Transport**, the public transit industry's weekly trade publication, frequently describes similar programs operated by transit authorities nationwide. These programs are very low cost to operate and simply involve in publicizing their existence. An example of such a program is the New Jersey Transit Corporation program, Transit On Patrol or TOP, or the Safe Place - Safe Space program by METRO Regional Transit Authority in Akron, Ohio.

Rationale - Nationally and throughout Delaware, there are numerous examples of bus operators reporting unusual, dangerous, or emergency situations via their two-radios to dispatchers who in turn contact the local police, fire, or other appropriate service provider. Lives and property have been saved via the involvement of bus operators simply reporting to the dispatchers what they see that is out of the ordinary. Many areas regularly use bus operator reports for radio broadcasted traffic advisories during the morning and evening peak periods.

Given these examples, it is reasonable for bus operators to be involved from their seats in the reporting of crime and injury to persons or property. Increasing the community acceptance of DART 1st State service via this community service gains it supporters by demonstrating its

effectiveness as an extension of existing “Neighborhood Watch” and similar programs. Moreover, because the implementation of this recommendation simply formalizes what occurs naturally among professional bus operators, it should not add significant costs to DART 1st State’s budget.

3). Recommendation - It is recommended that DART 1st State implement Sunday bus service that would link major activity centers, churches, and neighborhoods with the WCC.

Rationale - Transportation is an integral part of economic development by linking workers with jobs and shoppers with stores. As such, it has been proven that the home-to-work and work-to-home trips are vital to an area’s economy. Transporting service workers to and from suburban job sites, the place most new service are developing, has been demonstrated to be a major function of public transportation service. Moreover, travel to and from church service is also a major function of public transportation Sunday service since this type of service typically adds to the quality of life. Most passenger surveys recorded an interest in using Sunday bus service.

4). Recommendation - It is recommended that DART 1st State develop and implement an unlimited ride monthly bus pass program, in conjunction with and through the CBD’s employers. Such a transit pass program would be focused and directed towards improving personal mobility only within the Wilmington CBD during the typical work day which is also traditionally transit’s off-peak period for service hours.

Rationale - Studies of urban trip making behavior have found that during a typical work day many downtown workers run errands and make other trips while at lunch. Because of the limited time, many use their personal cars for these trips because the distances are too great to walk comfortably within the time available. Most don’t use the traditional downtown circulator service because the route coverage and service frequency is often incompatible and inconvenient for with individual travel needs.

Therefore, the major reason one chooses a personal car over public transit for personal mobility for short trips within a CBD is the perceived convenience, reliability, and time-savings associated with driving ones self. If an employee’s personal mobility for trip making could be enhanced by riding any bus traveling along any street within the CBD by simply showing a monthly pass that has unlimited rides on it, such a combination would create a “win-win” situation by reducing CBD traffic congestion, reducing automobile caused air pollution, increasing transit farebox revenues without increasing operating costs, and increasing the attractiveness of the CBD as a consumer retail location. place to take care of personal business for all concerned.

Marketing a transferable unlimited ride monthly pass for bus service within a specified geographic area that is valid during those days and times when transit ridership is traditionally low has sparked increased transit ridership. In those central business districts where such bus pass programs have been implemented, single occupancy auto traffic congestion has been reduced while transit ridership increases. In addition, many restaurants and businesses located in the CBD fringe areas reported that their revenues increases coincided with the implementation of the bus pass programs.

If properly advertised and marketed, an unlimited ride monthly bus pass program focused on the CBD employees can help to significantly reduce traffic congestion in a City's downtown area. Defining the geographic limits of the program's eligibility could be accomplished through of brightly colored trail blazer signage. Using a pass program that provides for unlimited rides to major trip generators and attractors for a month within a specific, limited geographic area is a solid economic development tool. A CBD focused bus pass program which combines ease of use, service reliability, time-savings, cost savings and convenience into a program that serves the CBD employee's mobility needs will create be successful. Such a program could be financed, in whole or part, through Congestion Mitigation Air Quality Program of the U. S. Department of Transportation.

C. Economic Development Recommendations

1). Recommendation - Consistent with the report, **Third Party Evaluation of West Center City Neighborhood Planning Advisory Committee, Incorporated**, it is recommended that a community-based economic development sub-committee comprised of members of the West Center City Neighborhood Planning Committee, Incorporated (WCCNPAC) Board of Directors and local residents, local business owners located within WCC, business interest and/or support groups (i.e. Chamber of Commerce, Wilmington Renaissance, etc.), private non-profit organizations concerned with economic development be created and housed within WCCNPAC.

Rationale - Fundamental economic development begins with a person having a job which pays a wage such that the individual can purchase life sustaining goods and services. What's more, establishing a grass-roots community based organization that would be comprised of local residents, local business owners located within WCC, business interest and/or support groups (i.e. Chamber of Commerce, Wilmington Renaissance, etc.), private non-profit organizations concerned with economic development, and appropriate City staff is consistent with the October 1984 agreement between WCCNPAC and Wilmington Urban Development Action Grant Corporation (WUC).

2). Recommendation - It is recommended that the WCC joint public/private community-based economic development task force proposed in **Economic Development Recommendation 1**, create and support a strategic place marketing effort that touts West Center City Analysis Area as a place with superior competitive advantages for economic development activity. Such an effort, i.e. strategic place marketing, would be designed:

- to help the WCC strengthen its capacity for recognizing its unique geographic advantages, seize and capitalize on opportunities;
- to market the unique advantages that WCC has as a place; and
- to sustain the synergy that results when opportunity, preparation, and awareness coupled with persistence to succeed meet at the same time in the same place.

Rationale - Based on its unique geography, every community has unique advantages that make it

a special place for doing business and for supporting economic activity. Given this, within Wilmington, the WCC has unique economic advantages because of its geography and its spatial relationship to other things, both natural and man-made, within the greater Wilmington region. The goal will be to capitalize on and successfully market the WCC's unique features to garner economic returns.

Within the United States' Mid-Atlantic region, Wilmington's geo-political setting gives it certain key advantages over its competitors. For example, Delaware is commonly called the Switzerland of the United States because of its favorable laws towards banking, finance, and corporate operations. Accordingly, many large credit card companies and many of the nation's largest banks have offices in Delaware. In turn, Wilmington, as Delaware's largest city, has realized advantages because of this.

Wilmington is located within the northeastern corridor about midway between Washington, D.C. the nation's capital on the south, and New York City, the nation's financial capital, on the north. Wilmington has excellent access to either city by virtually all modes of transportation and the modern communication technologies reduce the distances to key strokes at a computer terminal. Wilmington also has multi-modal access to the country's vast interior. Given these things, strategic place marketing takes on added meaning for those WCC stakeholders seeking to energize this analysis area to meet their long-term expectations.

As the City continues to emerge within the global economy, a cursory examination of its analysis areas reveals that each has unique features that can be of importance in an economic development scenario. Therefore, it behooves each analysis area to position and present itself in a manner that permits it as well as the overall City to "put the best foot forward" to successfully compete with other places for economic advantage and long-term growth. A key to creating this strategy of place marketing will be to identify and assemble the unique features of each analysis areas that businesses find attractive and important to their profitability and long term economic success.

Most successful models have used a version of a collaborative joint venture that involves stakeholders from public and private sectors that would benefit from presenting an in a positive manner. To the degree that each of the City's analysis areas possesses unique "place specific features", these must be identified and packaged in a strategic marketing manner which allows it to compete economically and then presented to businesses. For this effort, a collaborative joint venture is needed. For the WCC, the Neighborhood Planning Council is a good forum for starting this bottom-up place specific marketing effort.

Within Wilmington, for example, a cursory examination of its analysis areas reveals that each has unique features. Among these, the WCC has superior geographic advantages with easy access to:

- major surface transportation routes and corridors via I-95, US 202, and SR 52;
- mass transportation service via the DART 1st State bus system's radial hub at Rodney Square, SEPTA regional rail service, New Jersey Transit Bus Service, and the AMTRAK Train Station;

- national and international water-bourne freight via the Port of Wilmington;
- the emerging riverfront commercial district along the Christina River;
- the Wilmington CBD's established retail and commercial areas as well as the emerging new commercial districts including the New Castle County Courthouse and the Ship's Tavern Commercial District;
- the growing number of colleges and universities locating within it a 1-2 block corridor of the Market Street pedestrian mall; and
- the New Castle County Regional and the Philadelphia International Airports.

It has only slightly less easy access to a fully integrated multi-modal freight rail system with access to North American as well as East Coast markets.

D. Recommendations for Parks and Recreational Facilities

1). Recommendation - It is recommended that the West Center City Neighborhood Planning Council, the City of Wilmington, WCC area churches, Trinity Vicinity Neighborhood Association, and others collaborate to annually co-sponsor friendship formation events such as a block parties; thematic community fairs; or outdoor concerts for WCC residents.

The purpose of the events will be to increase the sense of community and neighborly familiarity among WCC residents and entities doing business within the WCC. Events of this type have proven successful in promoting community awareness and community esprit de corp among neighbors in other places hosting such events. The proposed events should be low cost or free and involve activities that promote friendship formation among attendees and be scheduled to occur during late spring, summer months, or early fall shortly after school begins in September so that inclement weather is not a deterrent to full WCC participation.

Rationale - While WCC contains a significant number of rental housing units, there are also many long time residents. As a result, many of the WCC residents do not know each other. Similarly, it was suggested that too frequently the WCC residents are not aware of the community's various interests and features as well as its challenges and opportunities. Because many residents do not know their neighbors, they are alienated and disconnected from each other and their neighborhood. Community fairs and block parties have proven successful in decreasing the sense of alienation among residential areas and they are an important ingredient for community based crime prevention programs.

2). Recommendation - It is recommended that a regular census or record of usage of West Center City's Hicks Anderson Community Center be maintained with particular concern for the number of times that requests to use the facility are declined because of competing uses, i.e. basketball

tournaments versus volleyball tournaments.

Rationale - If the population of WCC continues to increase and patron demand to use William “Hicks” Anderson facilities continues unabated, an expansion may be warranted. Accordingly, record keeping concerning the days and times as well as types of need for facility use is important.

E. Recommendations For City Services & Facilities

1). Public Input Suggestion - In one of the West Center City Comprehensive Development Plan public meetings, it was recommended that the City create an office that would serve as the single point of contact for all phases of grantsmanship. Operating similar to a development component within a private non-profit organization, this single point of contact would be responsible for:

- annually pinpointing special or unique financial assistance needs among the City’s various departments and offices, neighborhoods groups, civic associations, and other established public organizations which cannot be expeditiously addressed by the City’s normal budget preparation and resource allocation process;
- regularly reviewing all information sources concerning special or unique financial assistance (i.e. grants) from federal, state, or private foundations in order to be knowledgeable about them and to be a resource for City departments and offices, neighborhoods groups, civic associations, and, as may be appropriate, other established public organizations within Wilmington;
- assisting City departments and others in identifying opportunities and applying for grants or other special purpose funding opportunities which could help the City and others achieve its mission; and
- providing grants management and oversight pursuant to compliance with reporting requirements.

Rationale - Currently, there is no designated single point of contact concerning grants or grantsmanship related activities within the City. Therefore, each department or office is responsible for researching, applying for, and complying for any grant opportunities as well as knowing the individual grant requirements which results in missed opportunities and duplication of effort. Moreover, because the City does not have a single point of contact for this effort, the task overseeing and complying with all grants requirements varies by department and by individual staff person is therefore, not handled uniformly. Streamlined grants management does not and cannot exist in this fragmented environment. Likewise, the City’s funding sources are limited and usually earmarked for essential services. The City, therefore, is missing unique partnership opportunities to be a problem solver for its citizens because it lacks a single point of contact which can regularly interface with those entities which could provide financial assistance to those City departments and local organizations that could need it. The City is also losing out on cost savings through economies of scale resulting from a uniform single point of contact for grantsmanship which don’t materialize

when each individual department manages its own grants and must apply to numerous different funding sources for funding.

Considerable savings, both financial and in-kind convenience, could be gained by creating a single point of contact for the City's grantsmanship needs. With a single point of contact with responsibilities as described above and focusing on the grants management for the City, the cost of this new endeavor would easily be offset by bringing in new grants or increasing the amount of existing ones.

2). Recommendation - It is recommended that the City of Wilmington investigate the feasibility of undertaking a city-wide capital improvement program that will upgrade the existing combined sanitary/storm water sewer system to a separate sanitary sewer system and a separate storm water sewer system.

Rationale - Frequently, the existing combined sanitary/storm water sewer is temporarily overwhelmed by high volumes of storm water run-off resulting from heavy rains or rapid snow melt. In a combined sewer system, waste water, sanitary sewerage and storm water are mixed or combined in a single sewer system that is sent to the single waste treatment facility. Because the sanitary sewer treatment facility has a finite capacity, during those periods of heavy rain or rapid snow melt the effluent is discharged untreated into the Delaware River. While such waste water discharges are legal under the existing environmental regulations, they denigrate water quality and present a problem for aquatic life in the Delaware River and for anyone downstream.

Constructing a new sewer system which eliminates the combined sewer system replaces it with one that separately handles waste water and storm water run-off for the entire City of Wilmington is an extremely complex project. This type of a project would be extremely costly both in dollars and in the time required to complete the project. Such a project is estimated to cost in the range of \$250 to \$400 million.

3). Recommendation - Install attractive signage announcing the presence of Wilmington Central Business District and other points of interest at the gateway approaches along Delaware Avenue, West 4th Street, I-95, and other approaches leading into the CBD.

Rationale - Public input stated that installation of such signage is appropriate and serves a marketing purpose for the City. The need for this project has identified and received standing on the public agenda. As such, it is an unfunded initiative awaiting funding in order to establish an implementation date.

4). Recommendation - It is recommended that on not less than annually the Wilmington Fire Department routinely check the fire hydrants within the WCC for water pressure and water flow. The findings of this inspection should expeditiously transmitted to the City Department of Public Works so that corrective actions can be taken as may be appropriate.

Rationale - Public Input Concern - Based on input received at a WCC Comprehensive

Development Plan meeting from a resident whose home burned because of alleged low fire hydrant water pressure, it was noted that many fire hydrants in WCC have such low water pressure that they are virtually useless for fire-fighting purposes. The City has a responsibility for protecting the health and safety of its citizens and residents herein. If fire hydrants do not function properly (i.e. provide high volumes of water at appropriate fire fighting pressure), that is a critical safety issue.

F. Recommendation for Environmental Clean Up - Helen Chambers Park

1). Recommendation - Consistent with public statements by City Officials at The City of Wilmington has established a zone of containment which prevents human contact with any of the known and identified toxic materials and substances found with Helen Chambers Park. The City has also contracted with DUFFIELD ASSOCIATES, Inc. to perform additional studies of Helen Chambers Park data that was collected by the Delaware Department of Natural Resources and Environmental Control's Site Investigation and Restoration Branch (DNREC-SIRB). The City's DUFFIELD contract specifies development and implementation of a work plan for a Remedial Investigation/Feasibility Study (RI/FS) of the Helen Chambers Park site under DNREC-SIRB's Voluntary Clean-up Program (VCP).

After completion of the RI/FS, the VCP process includes several additional steps. Upon receipt and approval of the RI/FS Report, DNREC-SIRB will publish its proposed plan of remediation action for Helen Chambers Park. The proposed plan of remediation action will be available during a 20 day period for comment by City Officials, community residents, and other State agencies. Incorporating this public comment and input, DNREC-SIRB will then publish a final plan of remedial action and subsequently develop a remedial action work program for implementation at Helen Chambers Park.

Rationale - Based on test-pit boring and subsurface soils samples taken in late 1998 and again in late 1999, cancer causing toxic materials and substances have been found by the Delaware Department of Natural Resources and Environmental Control (DNREC) at these various test pits within grassy area of Helen Chambers Park. Historic research has revealed that the Park is on the site of a former tannery and the hazardous materials are most likely left over from this manufacturing process.

Helen Chambers Park is heavily used as the City of Wilmington operates focused recreational programs from this site during the summer months. The Park is located adjacent to the William "Hicks" Anderson Community Center, which is also heavily used. Likewise, the park which is virtually surrounded by residential areas, gets frequent use by persons living in the surrounding areas.

Because this Park is centrally located within the WCC and the only one within the WCC which contains various popular play areas including a baseball field and jungle gym play area as well as tennis and basketball courts, it is heavily used by area residents, young and old alike. During the summer and warm weather months, Helen Chambers Park is the site of community picnics, outdoor tent religious revivals, organized baseball league games, tennis tournaments, summer league

basketball games, and a host of other outdoor activities. At other times, WCC children can be found playing touch football, pick-up games of soccer, pitch-n-catch, exercising their pets, and a host of other activities in the Park's grassy area.

The presence of dangerous hazardous materials in Helen Chambers Park, a popular and heavily used urban park, is fully described in a document prepared by the Delaware Department of Natural Resources and Environmental Control and included in the West Center City Comprehensive Development Plan as Appendix A.

G. Recommendations for Focused & Directed Special Purpose Programs

Public input revealed the need for special purpose programs that are focused and directed towards increasing the number of owner-occupied residents residing within the WCC.

1). Recommendation - It is recommended that the City annually sponsor an urban homestead program lottery for residential units within the WCC. Consistent with most urban homestead programs, a contest is staged, a drawing held, and persons are selected to buy an abandoned residential dwelling for \$1.00 with several terms and conditions.

While the specific terms and conditions for each urban homesteading programs might vary by municipality, most have certain uniform requirements including:

- that the dwelling be rehabilitated to satisfy current single family residential housing code regulations and guidelines;
- that the owner live in the unit as his/her principal dwelling for a specified period of time (usually 5 years or more) as well as for some period of time beyond when the life of the loan;
- that the person entering in the urban homestead program complete required some type of classes defining and describing the responsibilities of home ownership or similar training courses; and
- from a sponsoring public agency perspective, that all necessary and required support resources are available to make the urban homestead program participants a success.

Rationale - It is common knowledge that resident property owners tend to demonstrate a higher degree of care and concern for their neighborhoods and their properties than do absentee landlords. WCC residents want the focus of home ownership on their areas along with the financial assistance that accompanies such programs.

2). Recommendation - It is recommended that a campaign of appropriate code enforcement activities by City Departments be regularly undertaken to enhance, preserve, and sustain the WCC

quality of life. The goal of such an effort will be to remove junk and/or inoperative vehicles from WCC residential streets and public rights-of-way; to stop long term, illegal vehicle and/or boat parking on WCC streets and public rights-of-way; to eliminate those areas and things where harborage exists for vermin and rodents; and to conduct appropriate inspection and enforcement activities to assure that the quality of WCC housing stock is not denigrated via illegal conversion into small units and that commercial areas are well maintained.

Rationale - This recommendation was echoed among numerous WCC residents at public meetings as a major concern for assuring that their area's quality of life is sustained. Under the auspices of a cooperative interdepartmental code enforcement campaign by appropriate City departments, similar campaigns have proven successful. These campaigns have the benefit of being high profile, coordinated, focused, and directed towards achieving key community backed and supported goals and objectives.

3). Recommendation - It is recommended that a mobile tool library pilot program demonstration be undertaken within the WCC. A mobile tool library would make available to homeowners who are fixing up their own dwellings tools commonly used in fixing up a residential dwelling. The tools would be loaned to the owner-occupiers of residential dwellings at a nominal cost for the purpose of fixing up their own dwellings.

Rationale - Establishing a publicly sponsored mobile tool library within WCC as a pilot program demonstration would make tools commonly used in household repair available to homeowners at a low cost. Such a program was successful when established by the Columbus (Ohio) Department of Development. It helped homeowners who could not afford to purchase certain common household repair tools obtain them in order to complete many home repairs and other household do-it-yourself projects without excessive costs associated with buying tools to be used sparingly.

**West Center City Analysis Area
Comprehensive Development Plan**

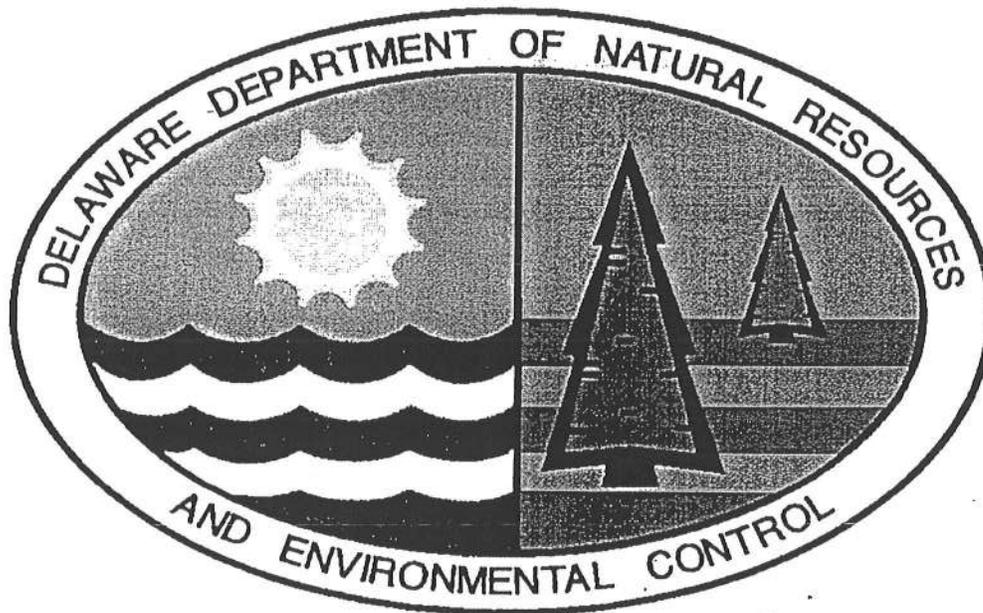
APPENDIX A

WORKPLAN FOR FIELD ACTIVITIES

HELEN CHAMBERS PARK

**SITE INSPECTION
NEWARK, NEW CASTLE COUNTY, DELAWARE**

**DELAWARE DEPARTMENT OF NATURAL RESOURCES AND
ENVIRONMENTAL CONTROL**



DE-1145

NOVEMBER 1999

Prepared by:

Kristen L. Thornton
Environmental Scientist
Site Investigation and Restoration Branch
Department of Natural Resources and
Environmental Control
391 Lukens Drive
New Castle, Delaware 19720

Reviewed and Approved by:

Ann L. Breslin
Environmental Scientist
Site Investigation and Restoration Branch
Department of Natural Resources and
Environmental Control
391 Lukens Drive
New Castle, Delaware 19720

TABLE OF CONTENTS

INTRODUCTION	1
PURPOSE.....	1
SITE DESCRIPTION AND OPERATIONAL HISTORY	1
SITE DESCRIPTION	1
OPERATIONAL HISTORY AND WASTE CHARACTERIZATION.....	1
PREVIOUS INVESTIGATIONS	2
WATER SUPPLY	2
SURFACE WATERS	3
HYDROGEOLOGIC SETTING.....	3
SOILS	3
POPULATION DISTRIBUTION.....	4
SAMPLING SUMMARY.....	4
PROPOSED SAMPLING LOCATIONS AND RATIONALE	5
QUALITY ASSURANCE / QUALITY CONTROL.....	5
PROJECT SCHEDULE.....	6
SITE INSPECTION.....	6
TABLE 1 – SCHEDULE OF EVENTS.....	7

INTRODUCTION

The Delaware Department of Natural Resources and Environmental Control (DNREC), in cooperation with the United States Environmental Protection Agency (EPA), has developed this Site Inspection (SI) work plan for the Helen Chambers Park Site (Figures 1-3) located on the city block bounded by 6th, 7th, Monroe and Madison Streets, in the City of Wilmington, New Castle County, Delaware.

PURPOSE

The purpose of this Site Inspection (SI) is to investigate the possible existence of released hazardous substances at the Helen Chambers Park site through the collection and analysis of environmental samples. The analytical data generated from the collection and laboratory analysis of the environmental samples will be subsequently evaluated to determine the potential for human and environmental exposures to hazardous substances. After the completion of the SI, DNREC will submit a report to the EPA and State officials who will decide whether the site should undergo further investigation or obtain a "No Further Action" (NFA) designation under the Federal Superfund and/or State Site Investigation & Restoration Branch (SIRB) Programs.

SITE DESCRIPTION AND OPERATIONAL HISTORY

Site Description

The Helen Chamber's Park property consists of a 1.7-acre parcel located within the city block bounded by 6th, 7th, Madison, and Monroe Streets in Wilmington, Delaware (Figure 3). The site consists of paved basketball and tennis courts, a paved patio area, a sand-covered play area, a baseball diamond, and a grass field. The coordinates of the site are 39° 44' 41" latitude and 75° 33' 27" longitude.

The 1998 climatological data available for Wilmington reports an average temperature of 56.8 F. The coldest month is January with a mean annual temperature of 39.8 F while the warmest month is August with a mean annual temperature of 75.5 F. The total annual precipitation is 36.46 inches for the area.

Operational History and Waste Characterization

This site is located on land historically used for tannery operations and residential town homes up until 1965 (Figure 4). Sanborn maps from 1965 indicate plans for the property to be developed into a playground. The site is the currently the location of Helen Chambers Park and includes basketball courts, a paved patio area, a sand-covered play area, a baseball diamond, and a grass field.

PREVIOUS INVESTIGATIONS

Preliminary Environmental Assessment – Proposed Wilmington Swimming Pool Complex, Wilmington Delaware, November 1998, prepared by Duffield Associates, Inc.

A Preliminary Environmental Assessment (PEA) of the Proposed Wilmington Swimming Pool Complex site was conducted during October 1998 by Duffield Associates, Inc. as requested by the City of Wilmington Department of Parks and Recreation (Figure 5). This PEA was conducted in an effort to generally characterize the environmental conditions the site, which included the city block bounded by 6th, 7th, Madison, and Monroe Streets.

A review of historical maps and air photos revealed a tannery on the eastern two-thirds of the property from 1868 up until 1965. The western third of the property was reportedly residential town homes.

A metal detector scan was done that indicated the possible presence of large areas containing metals and multiple metal objects of varying size across most of the site. Also, the excavation of nine test pits was performed on the western portion of the site. Test pit soils were reviewed visually and scanned with a photoionization detector (PID). Petroleum odor accompanied by elevated PID readings, ash/cinder, apparent tannery wastes, and fill were encountered during test pit excavation. Soil samples were selected from several different types of material at various depths from the test pits.

The laboratory results of the test pit samples revealed elevated concentrations of volatile organics, base/neutral-extractable organics, and various metals including arsenic and lead (Appendix A). State of Delaware remediation standards for Restricted Use and Unrestricted Use were exceeded for several compounds. One sample displayed an arsenic concentration of 2,180 mg/kg, while another sample showed a lead concentration of 2,370; both of these samples exceeded Industrial URS benchmarks for Restricted land use.

The City of Wilmington, Department of Parks and Recreation entered into a Voluntary Cleanup Program (VCP) Agreement with the Department of Natural Resources & Environmental Control (DNREC) on March 25, 1999. However, the City of Wilmington terminated the VCP agreement on June 30, 1999 due to the postponement of the swimming pool development project that was to take place on this site. The VCP termination occurred prior to the initiation of any further investigation.

WATER SUPPLY

On-site water is provided by the City of Wilmington. There is a prohibition within the boundaries of the City of Wilmington against installing drinking water wells. No shallow groundwater is used as a source of drinking water in this area of Wilmington. The city utilizes surface water intakes for its primary water supply.

The City's closest intake is on the Brandywine Creek at a dam in Brandywine Park, 2.5 miles upstream from the confluence of the Brandywine Creek and Christina River. Water is drawn from the Brandywine Creek via a raceway with headwaters approximately 1.2 miles west-northwest of the school property. The city supplies water to approximately 140,000 individuals in the Wilmington metropolitan area and has water system interconnections with other area suppliers.

SURFACE WATERS

The nearest surface water body is the Cool Springs Reservoir located approximately 3/10-mile north and up-gradient of the site. The Christina River is located approximately 1/2 mile south and down gradient of the site. The Brandywine River is located approximately 4/5 mile west of the site. It is likely that surface water runoff from the site drains into the Christina River via overland flow. The City of Wilmington combined sewer also provides storm water collection.

The Brandywine River's mean annual discharge is 496 cubic feet per second (cfs). The Christina River's mean annual discharge is estimated at approximately 678.6 (cfs). The Brandywine flows approximately 1.5 miles to the confluence with the Christina River and the Christina joins the Delaware River approximately 1.5 miles downstream. The mean annual flow for the Delaware River, gauged at Trenton, New Jersey, is 11,744 cfs.

According to the National Flood Insurance Rate maps the site lies outside the 500 year floodplain (Figure 6).

HYDROGEOLOGIC SETTING

The site is located within the Piedmont Province. According to topographic contours the general elevation of the site is approximately 70-75 feet above sea level. The site is overlain by approximately 20-50 feet of Columbia Formation and Holocene sediments above the bedrock (Figure 7). The Columbia Formation includes gravelly coarse and medium sands with some interbedded silt. Holocene sediments consist of fine sands, silts, and clay. The bedrock formation in the area of the site consists of hypersthene-quartz-andesine gneiss with minor biotite and magnetite (Figure 8). The rock is bluish-gray and dense with relatively few, and widely spaced joints. Deep weathering due to fractures is not common, however where it occurs the overburden is primarily clayey material.

SOILS

Soils found on-site consist of Made Land and Urban Land (Ma) according to the *USDA Soil Survey, New Castle County, Delaware (1970)* (Figure 9). This type of soil consists of areas that have been filled with soil material, trash, or both, and it also consists of land that has been so

altered or disturbed by urban works and structures that classifying the soils is no longer feasible. In many areas the original soil has been covered by 18 inches to several feet of fill material that has been hauled in or graded from higher areas.

POPULATION DISTRIBUTION

According to 1990 census data there are approximately 8,838 residents within a ¼ mile radius of the site and 169,661 residents within a 4 mile radius of the site (Appendix B). A daycare center is located directly across Madison Street. The Anderson Community Center is located directly across 6th Street. The nearest school is the St. Paul's School located approximately 2/10 of a mile southwest of the site.

SAMPLING SUMMARY

DNREC proposes to collect approximately 21 soil samples during this Site Inspection (Figure 10). Of this total, an estimated 8 samples (including QA/QC samples) will be submitted based upon the results of field screening to Envirotech Laboratory for confirmatory analysis of chemicals of concern. Chemicals of concern consist of all or part of the USE Target Analyte List (Inorganics) and Target Compound List (Organics) (TAL/TCL) (Appendix C). Partial and/or full TAL/TCL analysis may be conducted upon samples based upon the results of the mobile-lab field screening. Field screened samples identified as having elevated concentrations of contaminants for a particular chemical suite shall be sent to Envirotech Laboratory for confirmatory analysis. All soil samples will be analyzed for metals in the SIRB mobile lab using the X-Ray Fluorescence (XRF) instrument. Laboratory analysis for metals will only be performed for confirmation.

All soil samples delivered to Envirotech Laboratory will have been screened in the Site Investigation & Restoration Branch's Mobile Laboratory for the following classes of compounds: Volatile Organic Compounds, Pesticides, Carcinogenic Polycyclic Aromatic Hydrocarbons (PAHs), Polychlorinated Biphenyls (PCBs), Total Petroleum Hydrocarbons (TPH) and Metals. Screening will be performed in the mobile lab using Immunoassay Test Kits, a portable GC/MS and an X-Ray Fluorescence Machine (XRF).

In the Envirotech Laboratory, the Gas Chromatography/Mass Spectroscopy (GC/MS) System will be used to analyze soil and water samples for Semi-Volatile Organic Compounds (SVOAs), Volatile Organic Compounds (VOAs), Pesticides and Poly-Chlorinated Biphenyls (PCBs). Metals will be tested for using an Atomic Absorption Unit and an Inductively Coupled Plasma Unit (AA and ICP). These constituents are analyzed for at sites with environmental and health impact concerns because they are commonly found in former industrial and landfilled areas. The above constituent groups comprise the TAL/TCL list. Analysis using the GC/MS system and AA and ICP provides a good cursory tool in which to determine the presence or absence of compounds and analytes at sites under investigation.

DNREC proposes to sample both the shallow and deep soil media in the area of investigation. Shallow and deep soil sampling will be taken from 0 to 2 feet and below 2 feet respectively. Deep soil samples will be collected using a backhoe from test pits excavated to a maximum depth of 12' or until groundwater or bedrock is reached. Test pits will be used to evaluate subsurface conditions such as natural soil strata or composition of fill materials. The test pits will be subsequently refilled and leveled using the excavated materials.

PROPOSED SAMPLING LOCATIONS AND RATIONALE

Figure 10 shows the proposed test pit and shallow soil the Helen Chambers Park site. Actual sampling locations will depend on site conditions and utility clearances.

A total of 9 test pits are proposed to be excavated on the Helen Chambers Park site. In addition, up to three (3) shallow soil samples may also be collected from selected locations based upon field conditions such as discolored soil or inaccessibility of the backhoe.

QUALITY ASSURANCE / QUALITY CONTROL

Field sampling and sample handling will adhere to the procedures as specified in the State of Delaware Site Inspection Quality Assurance Project Plan (QAPP). A copy of the Quality Assurance Project Plan is available for review at the office of the Department of Natural Resources and Environmental Control, 391 Lukens Drive, New Castle, Delaware, 19720.

Sampling equipment will be decontaminated between sampling locations using procedures outlined in the Quality Assurance Project Plan. Sterile disposable sampling equipment, such as soil scoops will be utilized where applicable.

The QA/QC sample program also requires that samples be collected to evaluate the quality of field sampling practices and equipment decontamination practices. The following samples will be collected during the sampling period:

- Trip Blanks
- Field Duplicates
- Laboratory Duplicates
- Field Rinse Blanks

Trip Blanks consist of four-forty milliliter glass vials filled with distilled water and sealed with a Teflon lined cap. Trip blanks are used to evaluate the potential for cross contamination of site samples from contamination sources outside the sampling area. Trip blanks are filled with distilled water prior to sampling, sealed, transported to the sampling site and returned to the laboratory without reopening for analysis. Trip blanks are analyzed for volatile organic compounds only.

Field duplicates consist of an actual sample for which twice as much volume as necessary has been collected. Aliquots of this volume are then distributed in two sets of sample containers and submitted to the laboratory as two separate samples. Field duplicates are used to assess the consistency of sampling homogeneity and laboratory analytical consistency. A field duplicate will be collected for each media.

Laboratory duplicates (also referred to as Matrix Spike/Matrix Spike Duplicate (MS/MSD)) represent a sample location in which twice the normal sample volume is collected. The purpose of the laboratory duplicate is to provide the analytical laboratory with a sample that can also serve to calibrate analytical machinery. The laboratory duplicate is normally spiked with a known concentration of chemical and this sample is used to calibrate the instrument.

Field Rinsate blanks consist of pouring demonstrated Analyte-free distilled water over decontaminated sampling equipment as a check that the decontamination procedure was adequately performed and that there was no cross contamination of samples. Analysis of Rinsate blanks is performed for all Analytes of interest.

Validation of the analytical data results will be performed by DNREC's Analytical Chemist, Robert Schulte.

PROJECT SCHEDULE

DNREC has established a project schedule for the Helen Chambers Park Site Inspection. The schedule establishes a time frame for completion of each activity. The schedule is shown on Table 1. Once the sampling and analysis is complete and the data validation is completed, the draft reports will be prepared. The draft report for EPA review and comment is anticipated to be available in August of 2000.

SITE INSPECTION

The Site Inspection Report will be prepared to convey the results of the field testing. The report will be prepared under the format presented in the United States Environmental Protection Agency Site Inspection Guidance Manual, dated November 1991. The report will contain results of previous investigations and new data and include tables, figures and laboratory analytical reports. The report will provide discussions of the results and recommendations for future actions. The report will be submitted to the U.S.E.P.A. for review and comment prior to being finalized.

TABLE 1 – SCHEDULE OF EVENTS

<u>Action</u>	<u>Date</u>
SIRB Notification of study	November 1999
Initial Site Visit	November 22, 1999
Finalize Work Plan	November 29, 1999
Sampling of Soils	December 1, 1999
Draft Report to EPA	August, 2000

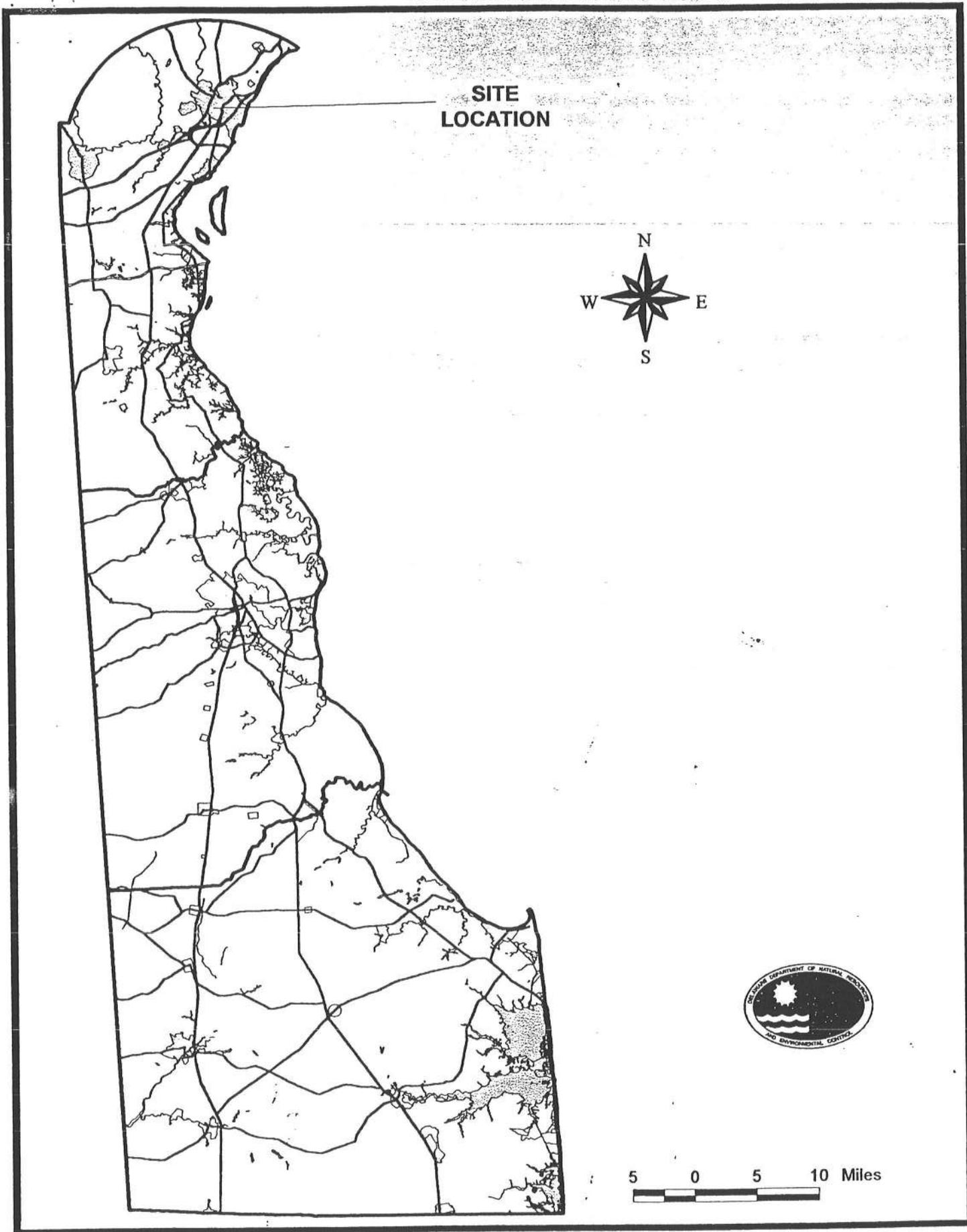


Figure 1: Location of the Helen Chambers Park in the State of Delaware

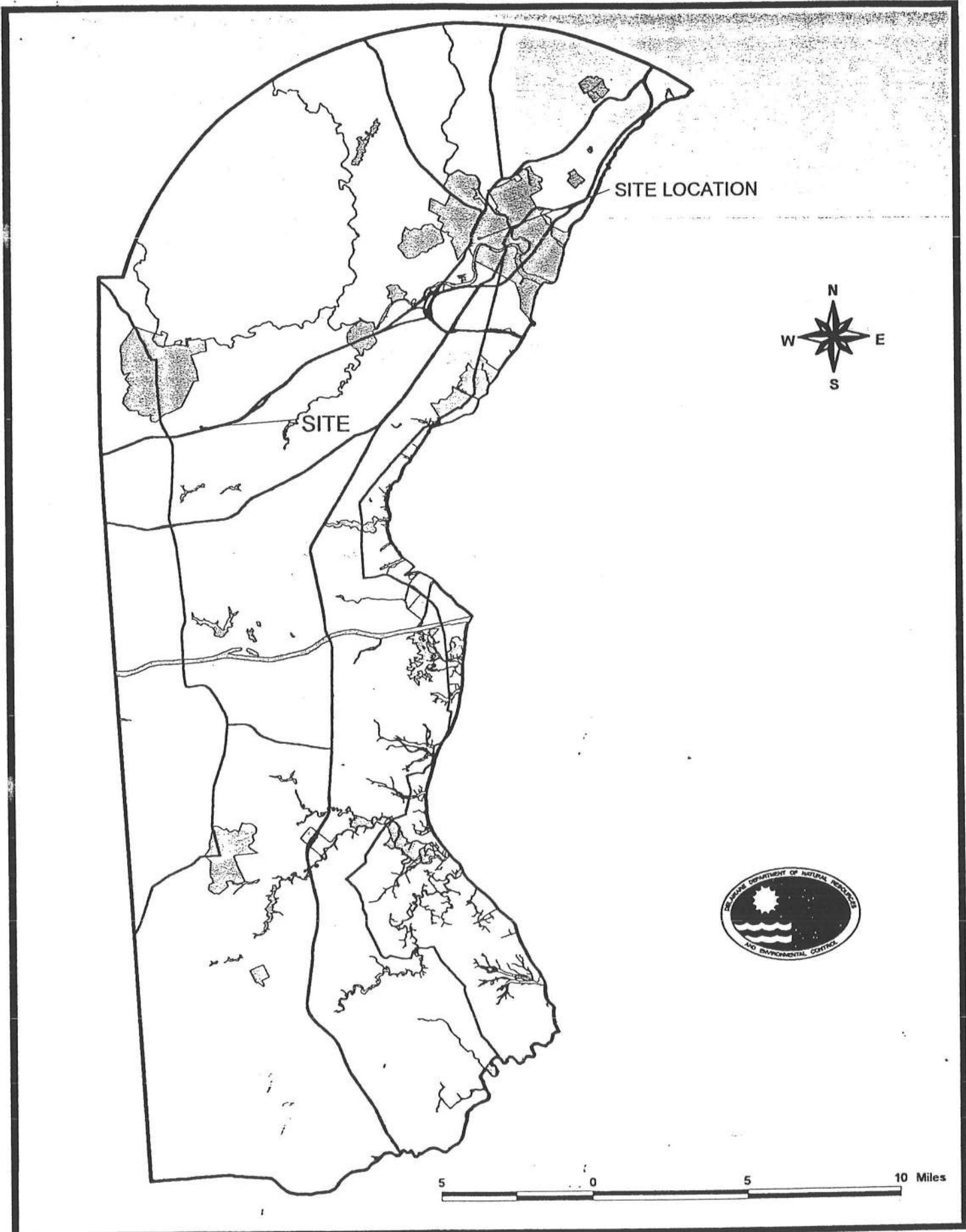


Figure 2: Location of the Helen Chambers Park in New Castle County, Delaware

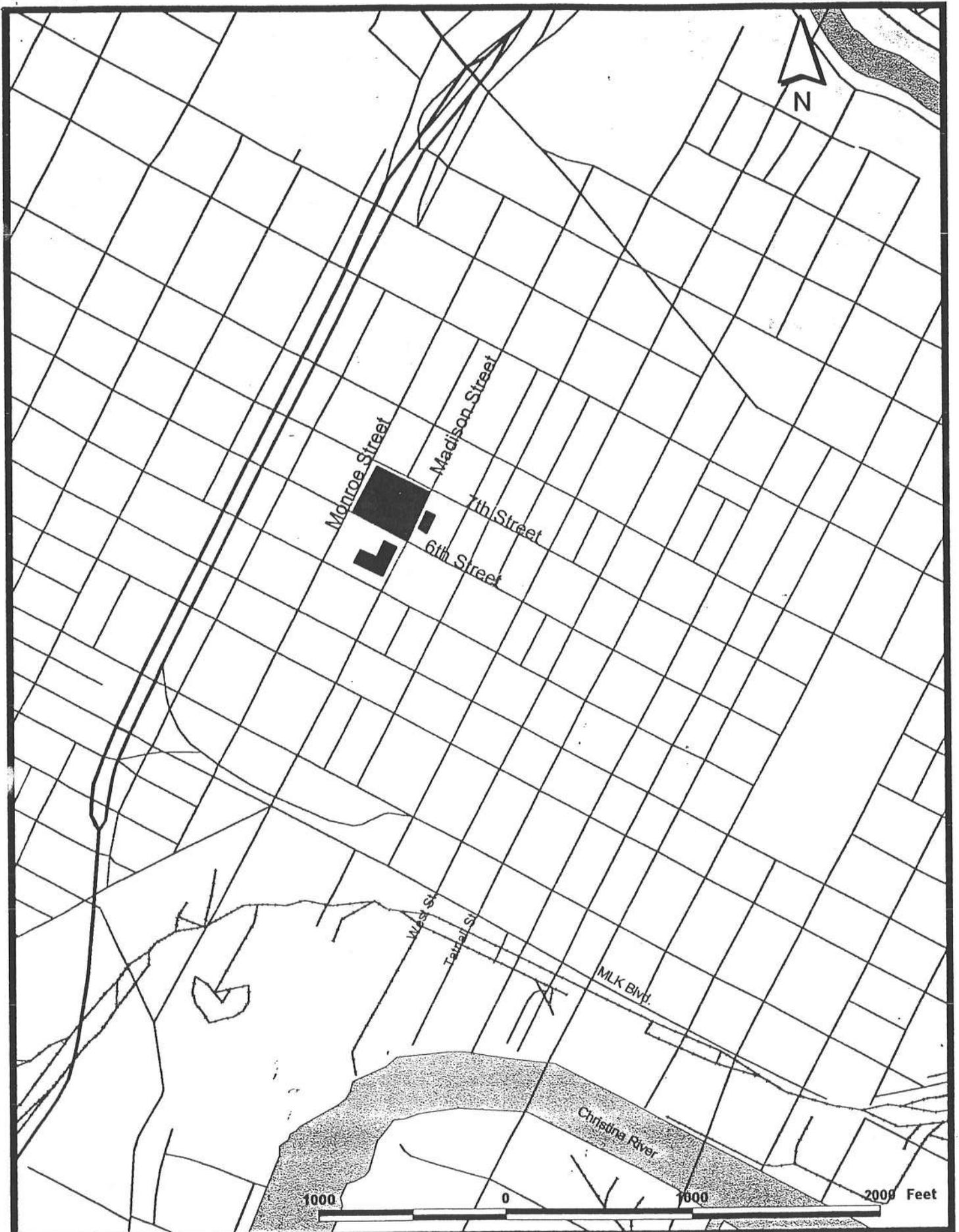


Figure 3: Location of the Helen Chambers Park in the City of Wilmington

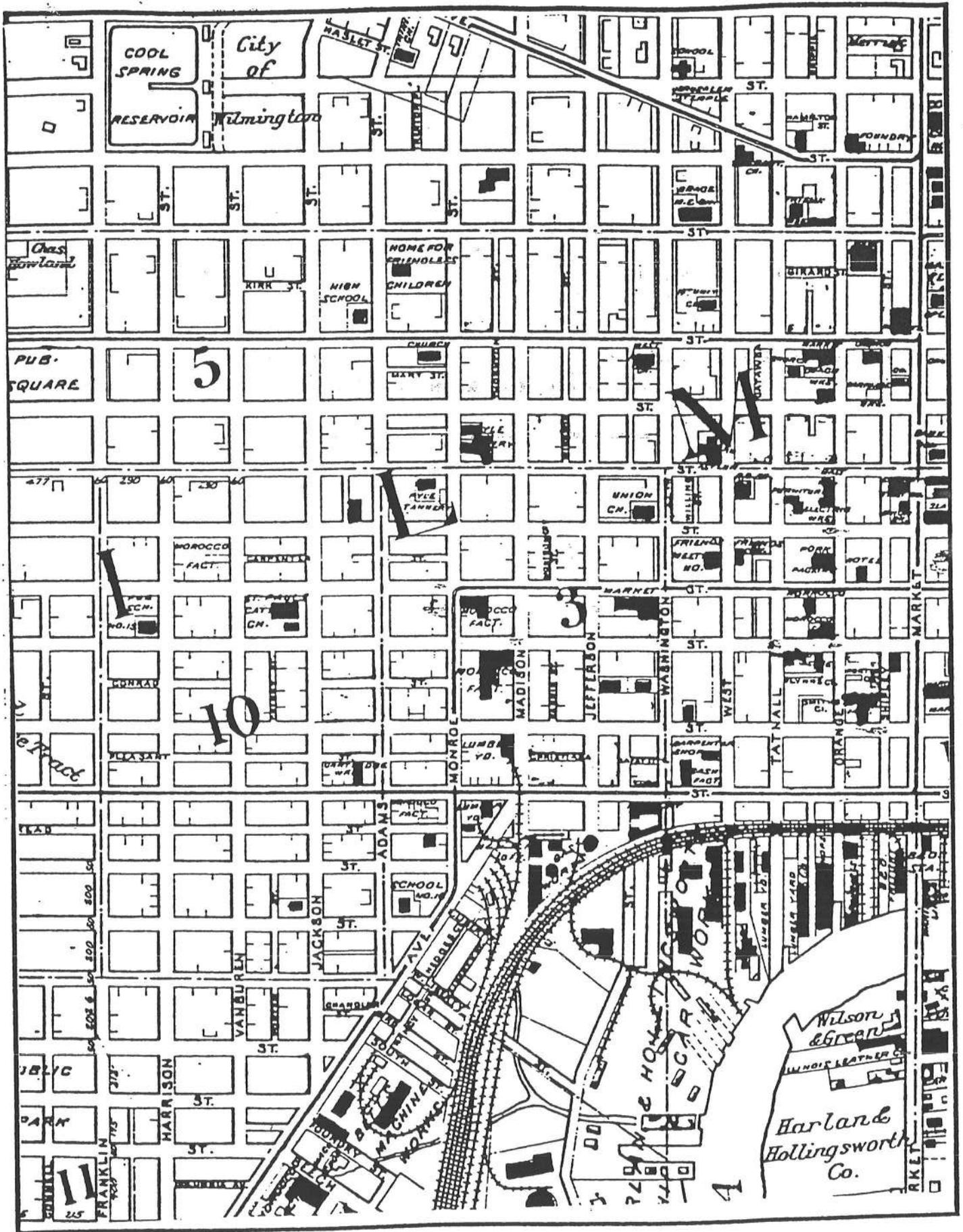


FIGURE 4

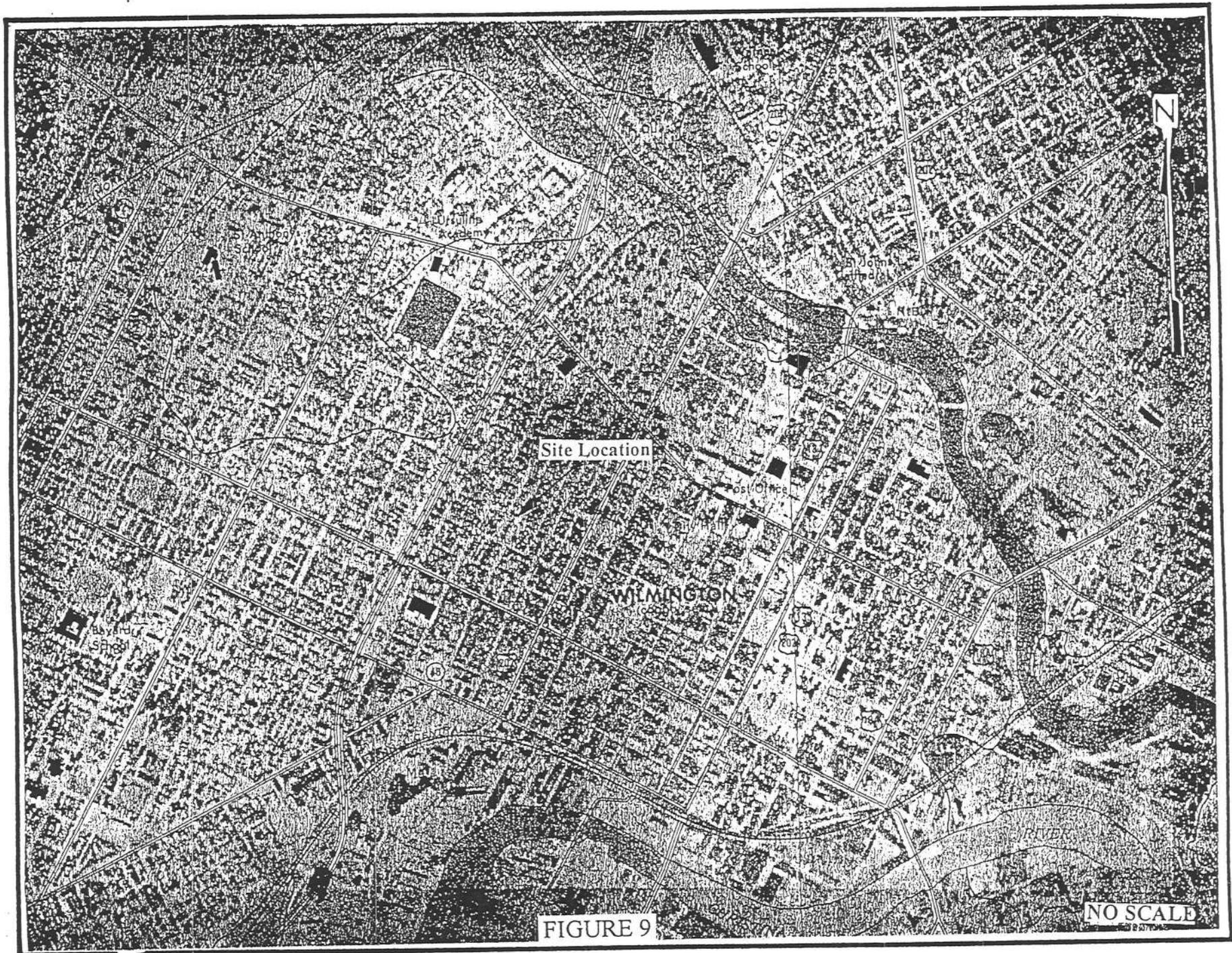


FIGURE 9

Soil Survey Map, Proposed Salvage Yard Relocation Area II
U.S. Department of Agriculture

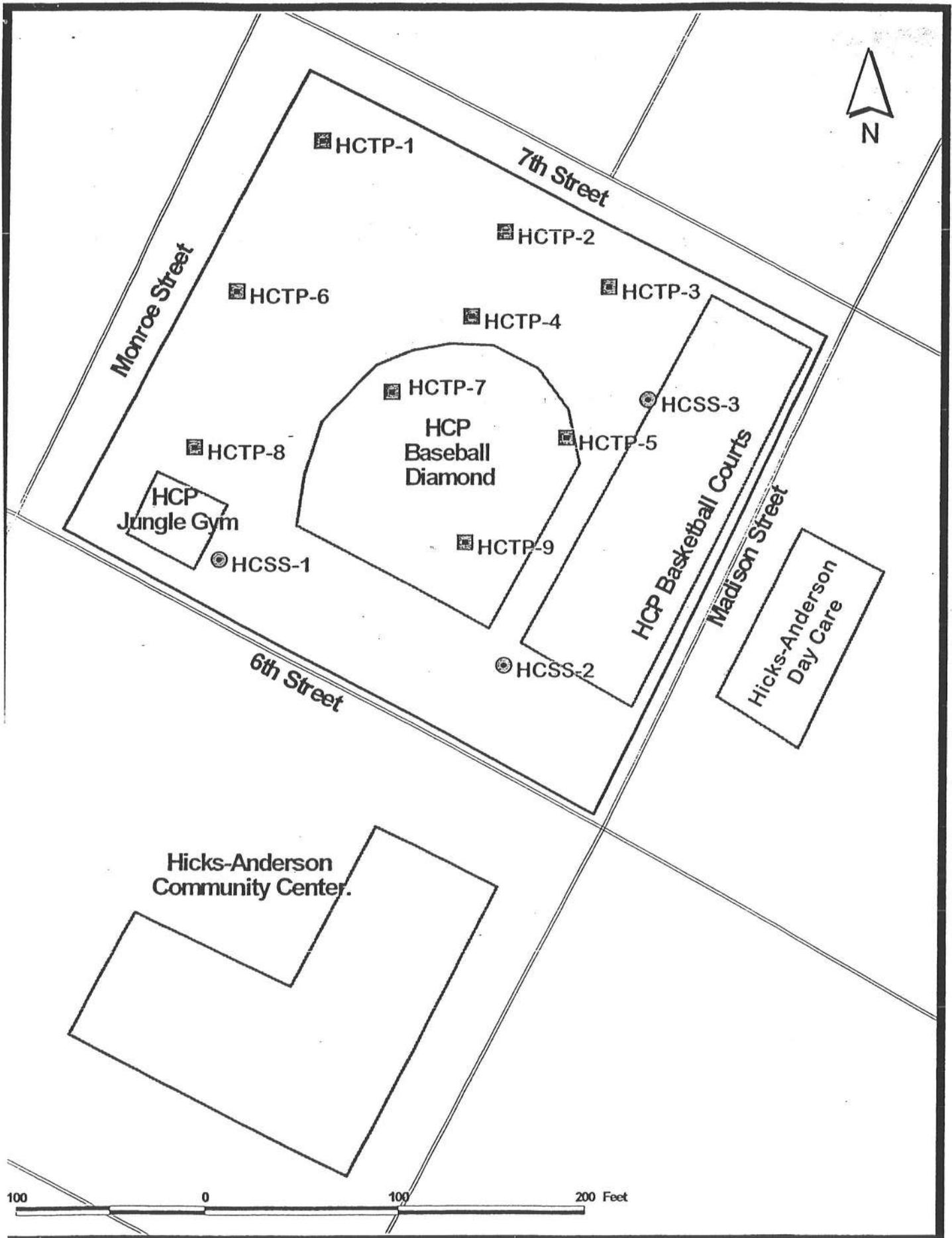


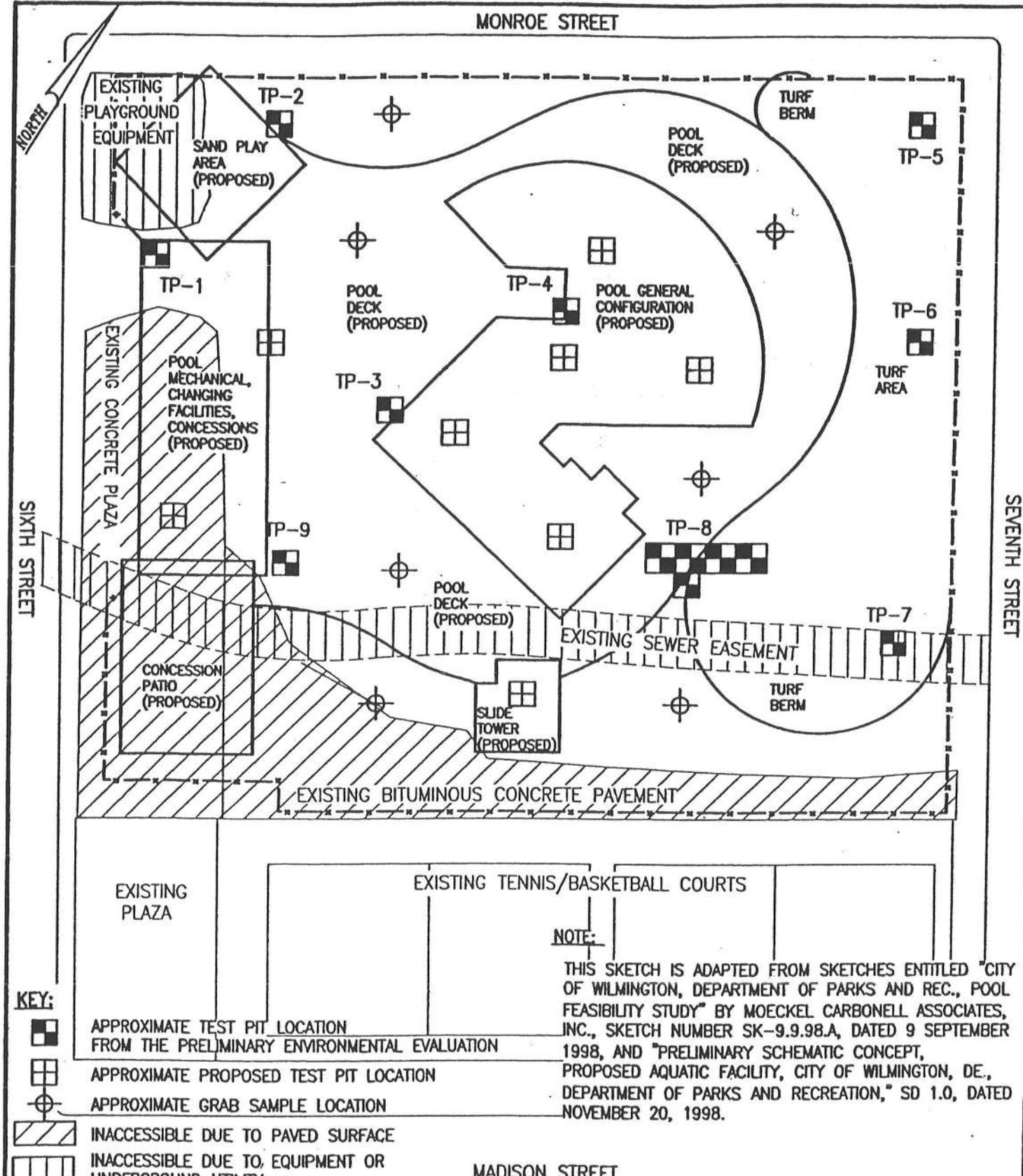
Figure 10: Helen Chambers Park Sample Location Map

APPENDIX A

TABLE 1
SUMMARY OF LABORATORY ANALYTIC RESULTS
 PROPOSED WILMINGTON SWIMMING POOL COMPLEX
 WILMINGTON, DELAWARE

SAMPLE LOCATION	URS for Unrestricted Use	URS for Restricted Use	TP-5	TP-5	TP-6	TP-9	TP-7	TP-8
			2.6	8.3	2.5-5.6	white-green	9.8	above slab
SAMPLE DEPTH (feet)			grab	grab	grab	composite	grab	grab
SAMPLE TYPE			10/26/98	10/26/98	10/26/98	10/26/98	10/26/98	10/26/98
DATE								
TOTAL METALS (mg/kg)								
Antimony	3	82	2.2	ND	ND	ND	NT	NT
Arsenic	0.4	61	75.2	2180	5.1	8.2	NT	NT
Beryllium	0.5	1	0.52	0.12	0.77	0.17	NT	NT
Cadmium	4	100	ND	ND	ND	ND	NT	NT
Chromium	270	5,000	779	49.6	24.3	595	NT	NT
Copper	1000	5,000	37.1	6.7	16.3	48.2	NT	NT
Lead	400	1,000	94.5	9.3	29.2	2370	NT	NT
Mercury	10	610	0.24	0.05	0.09	4.6	NT	NT
Nickel	160	4,100	11.2	1.6	12.4	6.3	NT	NT
Selenium	39	1,000	2.5	ND	1	ND	NT	NT
Silver	39	1,000	ND	ND	ND	ND	NT	NT
Thallium	-18	220	ND	ND	ND	ND	NT	NT
Zinc	1000	5,000	83.2	18.5	30.2	82.8	NT	NT
TCL Base-Neutral Extractables (mg/kg)								
Naphthalene	310	5,000	0.64	NT	ND	NT	4.3J	ND
2-Methylnaphthalene	NL	NL	0.032J	NT	ND	NT	3.2J	ND
Acenaphthylene	NL	NL	0.190J	NT	ND	NT	ND	0.36J
Acenaphthene	470	5,000	0.028J	NT	ND	NT	16.0J	0.25J
Dibenzofuran	31	820	0.056J	NT	ND	NT	7.6J	0.17J
Fluorene	310	5,000	0.041J	NT	ND	NT	20.0J	0.24J
Phenanthrene	1,000	5,000	0.89	NT	ND	NT	58	5.3J
Anthracene	1,000	5,000	0.14J	NT	ND	NT	3.4J	1.6J
Carbazole	32	290	0.086J	NT	ND	NT	ND	ND
Fluoranthene	310	5,000	1.3	NT	ND	NT	3.9J	11
Pyrene	230	5,000	1.1	NT	ND	NT	4.7J	9.1
Benzo(a)anthracene	0.9	8	0.63	NT	ND	NT	1.6J	5.3
Chrysene	88	780	0.82	NT	ND	NT	2.9J	5.9
Benzo(b)fluoranthene	0.9	8	0.85	NT	ND	NT	1.5J	5.9
Benzo(k)fluoranthene	9	78	0.33	NT	ND	NT	ND	2.6
Benzo(a)pyrene	0.09	0.8	0.59	NT	ND	NT	0.99J	4.1
Indeno(1,2,3-cd)pyrene	0.9	0.8	0.42	NT	ND	NT	ND	1.3
Dibenz(a,h)anthracene	0.09	0.8	0.11	NT	ND	NT	ND	0.6
Benzo(g,h,i)perylene	NL	NL	0.37J	NT	ND	NT	ND	1.2J
Total Confident Conc.	NL	NL	7.68	NT	ND	NT	58	45.8
Total Estimated Conc. TICs	NL	NL	1.55	NT	ND	NT	1,021	55.6
VOLEATILE ORGANIC COMPOUNDS (mg/kg)								
Toluene	650	5,000	NT	NT	NT	NT	0.16J	0.094J
Xylene (Total)	420	5,000	NT	NT	NT	NT	0.17J	ND
Tentatively Identified Compounds	NL	NL	NT	NT	NT	NT	95.7	13.67
ADDITIONAL PARAMETERS								
Total PCBs (mg/kg)	1	1	NT	NT	NT	NT	ND	ND
Corrosivity (pH)	2<pH<12.5 ⁵	2<pH<12.5 ⁵	NT	12.36	NT	12.33	NT	NT

1. Mg/kg = milligrams per kilogram
2. ND = Not detected
3. NT = Not tested
4. URS standards are taken from a document entitled "Remediation Standards Guidance Under the Delaware Hazardous Substance Cleanup Act," by the Delaware Department of Natural Resources and Environmental Control dated February 1998.
5. The indicated standard is not a URS, but the Resource Conservation and Recovery Act (RCRA) limits for classification of a solid waste as hazardous.
6. This table is part of a document entitled "Preliminary Environmental Evaluation, Proposed Wilmington Swimming Pool Complex," dated November 1998, and should be viewed only in that context.



KEY:

-  APPROXIMATE TEST PIT LOCATION FROM THE PRELIMINARY ENVIRONMENTAL EVALUATION
-  APPROXIMATE PROPOSED TEST PIT LOCATION
-  APPROXIMATE GRAB SAMPLE LOCATION
-  INACCESSIBLE DUE TO PAVED SURFACE
-  INACCESSIBLE DUE TO EQUIPMENT OR UNDERGROUND UTILITY

NOTE:

THIS SKETCH IS ADAPTED FROM SKETCHES ENTITLED "CITY OF WILMINGTON, DEPARTMENT OF PARKS AND REC., POOL FEASIBILITY STUDY" BY MOECKEL CARBONELL ASSOCIATES, INC., SKETCH NUMBER SK-9.9.98.A, DATED 9 SEPTEMBER 1998, AND "PRELIMINARY SCHEMATIC CONCEPT, PROPOSED AQUATIC FACILITY, CITY OF WILMINGTON, DE., DEPARTMENT OF PARKS AND RECREATION," SD 1.0, DATED NOVEMBER 20, 1998.

**PROPOSED TEST PIT LOCATION SKETCH
PROPOSED WILMINGTON SWIMMING
POOL COMPLEX**

DEPARTMENT OF PARKS AND RECREATION
CITY OF WILMINGTON
NEW CASTLE COUNTY ~ DELAWARE

**DUFFIELD
ASSOCIATES**

DUFFIELD ASSOCIATES, INC.
CONSULTANTS IN THE GEOSCIENCES
5400 LIMESTONE ROAD
WILMINGTON, DELAWARE 19808-1232
TEL. (302)239-8634 FAX (302)239-8485
E-MAIL: DUFFIELD@DUFFNET.COM

Drawn: JJV	Chk'd: RCG	Date: 12 FEBRUARY 1999
Scale: 1" = 40' APPROX.	W.O.:	4008.BC
Drawing No: A-4008EC-01		FIGURE 2

APPENDIX B

Age 0 Thru 4:	789
Age 05 Thru 09:	724
Age 10 Thru 19:	1266
Age 20 Thru 49:	4383
Age 50 Thru 64:	842
Age 65 And Over:	834
American Indian:	22
Asian/Pacific Islander:	23
Black Population:	5247
Hispanic Population:	1387
Number Of Families:	1767
Number Of Households:	3359
Other Race:	1016
Owner Occupied:	1155
Renter Occupied:	2204
White Population:	2530

8,838

Age 0 Thru 4:	1520
Age 05 Thru 09:	1448
Age 10 Thru 19:	2536
Age 20 Thru 49:	8708
Age 50 Thru 64:	2057
Age 65 And Over:	2565
American Indian:	39
Asian/Pacific Islander:	81
Black Population:	8547
Hispanic Population:	3140
Number Of Families:	4012
Number Of Households:	7274
Other Race:	2238
Owner Occupied:	3537
Renter Occupied:	3737
White Population:	7929

18,834

Age 0 Thru 4:	3489
Age 05 Thru 09:	3485
Age 10 Thru 19:	6052
Age 20 Thru 49:	21831
Age 50 Thru 64:	5581
Age 65 And Over:	7791
American Indian:	106
Asian/Pacific Islander:	207
Black Population:	21656
Number Of Families:	10653
Number Of Households:	19784
Other Race:	3206
Owner Occupied:	9830
Renter Occupied:	9954
White Population:	23054

48,229

Age 0 Thru 4:	6687
Age 05 Thru 09:	6560
Age 10 Thru 19:	11876
Age 20 Thru 49:	41733
Age 50 Thru 64:	11496
Age 65 And Over:	13592
American Indian:	186
Asian/Pacific Islander:	416
Black Population:	42037
Number Of Families:	21854
Number Of Households:	36426
Other Race:	3744
Owner Occupied:	20478
Renter Occupied:	15948
White Population:	45561

91,944

Age 0 Thru 4:	8831
Age 05 Thru 09:	8646
Age 10 Thru 19:	15675
Age 20 Thru 49:	56175
Age 50 Thru 64:	16659
Age 65 And Over:	19521
American Indian:	218
Asian/Pacific Islander:	851
Black Population:	47307
Hispanic Population:	6274
Number Of Families:	31046
Number Of Households:	49799
Other Race:	4004
Owner Occupied:	30237
Renter Occupied:	19562
White Population:	73127

125,507

Age 0 Thru 4:	11575
Age 05 Thru 09:	11552
Age 10 Thru 19:	21131
Age 20 Thru 49:	74376
Age 50 Thru 64:	24457
Age 65 And Over:	26570
American Indian:	274
Asian/Pacific Islander:	1319
Black Population:	50374
Hispanic Population:	6942
Number Of Families:	43792
Number Of Households:	66123
Other Race:	4236
Owner Occupied:	44109
Renter Occupied:	22014
White Population:	113458

169,661

APPENDIX C



Superfund

Contract Laboratory Program

Target Compounds and Analytes

CLP laboratories use CLP analytical methods for the isolation, detection, and quantitation of specific target compounds and analytes.

The CLP Target Compound and Target Analyte Lists were originally derived from the EPA Priority Pollutant List. In the years since the inception of the CLP, compounds and analytes have been added to and deleted from this list, based on advances in analytical methods, evaluation of method performance data, and the needs of the Superfund program.

The target compounds and analytes are listed below. Please note that water and soil/sediment quantitation limits apply to the Multi-Media, Multi-Concentration Organic and Multi-Media, Multi-Concentration Inorganic CLP services, while drinking water/groundwater quantitation limits can be obtained through the Low Concentration Organic Service only.

- Target Compound List (TCL) Volatile Compounds
- Target Compound List (TCL) Semivolatile Compounds
- Target Compound List (TCL) Pesticides/Aroclors (PCBs)
- Target Analyte List (TAL) Metals and Cyanide

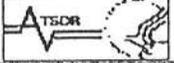
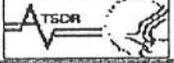
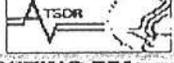
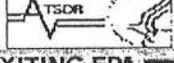
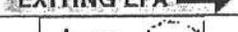
In addition to the quantitation and detection limits, links have been provided for certain compounds/analytes to the Agency for Toxic Substance and Disease Registry's (ATSDR) ToxFAQs Internet site. Data from this site are derived from ATSDR's public health statements and represent the most up to date information at the time of listing. The information is intended to inform the reader about these substances with special emphasis placed on their known effects on human health, while at the same time, acknowledging that there are limitations that exist about long term health outcomes for many of these substances.

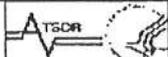
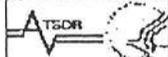
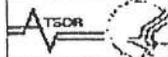
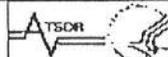
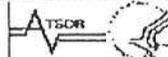
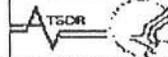
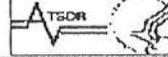
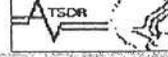
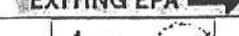
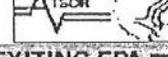
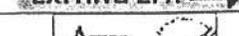
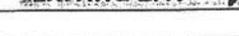
More detailed information regarding the human health effects associated with Target Compound List and Target Analyte List substances can be obtained by directly accessing the ATSDR Homepage on the Internet at <http://atsdr1.atsdr.cdc.gov:8080>.

EXITING EPA → *DISCLAIMER: The following links are pointers to other hosts and locations on the Internet. This information is provided as a service; however, the U.S. Environmental Protection Agency does not endorse, approve, or otherwise support the non-EPA sites.*

**TARGET COMPOUND LIST (TCL)
VOLATILE COMPOUNDS AND THEIR QUANTITATION LIMITS**

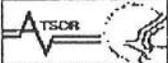
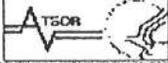
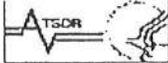
COMPOUND	CONTRACT REQUIRED DETECTION LIMITS FOR:			DESCRIPTION
	Drinking/ Ground Water (ug/l)	Water (ug/l)	Soil (ug/kg)	
Chloromethane	1	10	10	

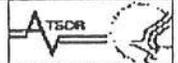
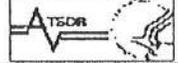
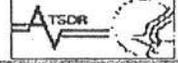
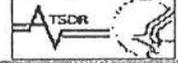
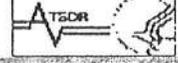
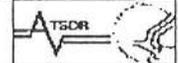
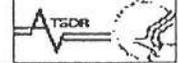
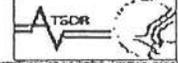
				
Bromomethane	1	10	10	 
Vinyl Chloride	1	10	10	 
Chloroethane	1	10	10	 
Methylene Chloride	2	10	10	 
Acetone	5	10	10	 
Carbon Disulfide	1	10	10	
1,1-Dichloroethene	1	10	10	 
1,1-Dichloroethane	1	10	10	 
1,2-Dichloroethene (total)	NA	10	10	 
cis-1,2-Dichloroethene	1	NA	NA	 
trans-1,2-Dichloroethene	1	NA	NA	 
Chloroform	1	10	10	 
1,2-Dichloroethane	1	10	10	 
2-Butanone	5	10	10	 
Bromochloromethane	1	NA	NA	
1,1,1-Trichloroethane	1	10	10	 
Carbon Tetrachloride	1	10	10	 
Bromodichloromethane	1	10	10	 
1,2-Dichloropropane	1	10	10	

				
cis-1,3-Dichloropropene	1	10	10	 
Trichloroethene	1	10	10	 
Dibromochloromethane	1	10	10	
1,1,2-Trichloroethane	1	10	10	
Benzene	1	10	10	 
trans-1,3-Dichloropropene	1	10	10	 
Bromoform	1	10	10	 
4-Methyl-2-pentanone	5	10	10	
2-Hexanone	5	10	10	 
Tetrachloroethene	1	10	10	 
1,2-Dibromoethane	1	NA	NA	 
Toluene	1	10	10	 
1,1,1,2-Tetrachloroethane	1	10	10	 
Chlorobenzene	1	10	10	 
Ethylbenzene	1	10	10	 
Styrene	1	10	10	 
Xylenes (Total)	1	10	10	 
1,2-Dibromo-3-chloropropane	1	NA	NA	 
1,3-Dichlorobenzene	1	NA	NA	
1,4-Dichlorobenzene	1	NA	NA	
1,2-Dichlorobenzene	1	NA	NA	
1,2,4-Trichlorobenzene	1	NA	NA	

[Top of Page]

**TARGET COMPOUND LIST (TCL)
SEMIVOLATILES COMPOUNDS AND THEIR QUANTITATION LIMITS**

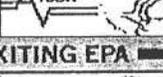
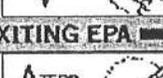
COMPOUND	CONTRACT REQUIRED DETECTION LIMITS FOR:			DESCRIPTION
	Drinking/ Ground Water (ug/l)	Water (ug/l)	Soil (ug/kg)	
Phenol	5	10	330	 EXITING EPA →
bis(2-Chloroethyl) ether	5	10	330	
2-Chlorophenol	5	10	330	
1,3-Dichlorobenzene	NA	10	330	
1,4-Dichlorobenzene	NA	10	330	 EXITING EPA →
1,2-Dichlorobenzene	NA	10	330	
2-Methylphenol	5	10	330	
2,2'-oxybis(1-Chloropropane)	5	10	330	
4-Methylphenol	5	10	330	
N-Nitroso-di-n-propylamine	5	10	330	
Hexachloroethane	5	10	330	
Nitrobenzene	5	10	330	 EXITING EPA →
Isophorone	5	10	330	 EXITING EPA →
2-Nitrophenol	5	10	330	 EXITING EPA →
2,4-Dimethylphenol	5	10	330	
bis(2-Chloroethoxy) methane	5	10	330	
2,4-Dichlorophenol	5	10	330	
1,2,4-Trichlorobenzene	NA	10	330	
Naphthalene	5	10	330	 EXITING EPA →
4-Chloroaniline	5	10	330	
Hexachlorobutadiene	5	10	330	 EXITING EPA →
4-Chloro-3-methylphenol	5	10	330	
2-Methylnaphthalene	5	10	330	
Hexachlorocyclopentadiene	5	10	330	
2,4,6-Trichlorophenol	5	10	330	 EXITING EPA →
2,4,5-Trichlorophenol	20	25	830	
2-Chloronaphthalene	5	10	330	
2-Nitroaniline	20	25	830	
Dimethylphthalate	5	10	330	
Acenaphthylene	5	10	330	

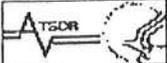
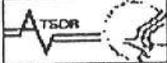
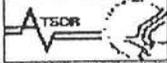
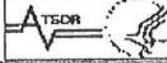
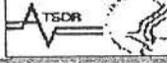
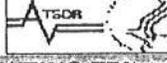
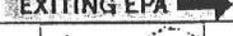
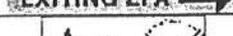
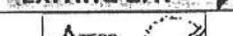
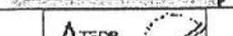
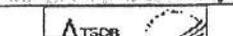
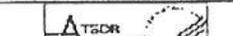
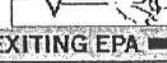
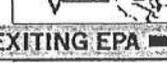
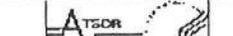
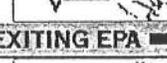
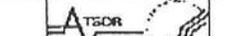
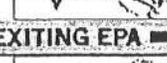
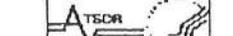
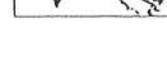
				
2,6-Dinitrotoluene	5	10	330	
3-Nitroaniline	20	25	830	
Acenaphthene	5	10	330	
2,4-Dinitrophenol	20	25	830	
4-Nitrophenol	20	25	830	
Dibenzofuran	5	10	330	
2,4-Dinitrotoluene	5	10	330	
Diethylphthalate	5	10	330	
4-Chlorophenyl-phenyl ether	5	10	330	
Fluorene	5	10	330	
4-Nitroaniline	20	25	830	
4,6-Dinitro-2-methylphenol	20	25	830	
N-Nitrosodiphenylamine	5	10	330	
4-Bromophenyl-phenyl ether	5	10	330	
Hexachlorobenzene	5	10	330	
Pentachlorophenol	20	25	830	
				
Phenanthrene	5	10	330	
				
Anthracene	5	10	330	
				
Carbazole	NA	10	330	
Di-n-butylphthalate	5	10	330	
				
Fluoranthene	5	10	330	
				
Pyrene	5	10	330	
				
Butylbenzylphthalate	5	10	330	
3,3'-Dichlorobenzidine	5	10	330	
Benzo(a)anthracene	5	10	330	
				
Chrysene	5	10	330	
				
bis-(2-Ethylhexyl)phthalate	5	10	330	
				
Di-n-octylphthalate	5	10	330	

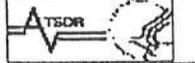
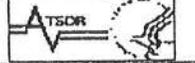
Benzo(b)fluoranthene	5	10	330	 EXITING EPA →
Benzo(k)fluoranthene	5	10	330	 EXITING EPA →
Benzo(a)pyrene	5	10	330	 EXITING EPA →
Indeno(1,2,3-cd)pyrene	5	10	330	 EXITING EPA →
Dibenz(a,h)anthracene	5	10	330	 EXITING EPA →
Benzo(g,h,i)perylene	5	10	330	 EXITING EPA →

[Top of Page]

**TARGET COMPOUND LIST (TCL)
PESTICIDES/AROCLORS (PCBS) AND THEIR QUANTITATION LIMITS**

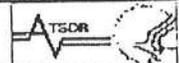
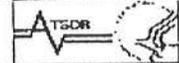
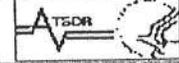
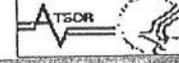
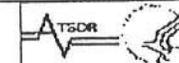
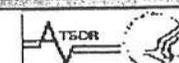
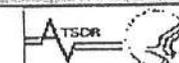
COMPOUND	CONTRACT REQUIRED DETECTION LIMITS FOR:			DESCRIPTION
	Drinking/ Ground Water (ug/l)	Water (ug/l)	Soil (ug/kg)	
alpha-BHC	0.01	0.05	1.7	 EXITING EPA →
beta-BHC	0.01	0.05	1.7	 EXITING EPA →
delta-BHC	0.01	0.05	1.7	 EXITING EPA →
gamma-BHC (Lindane)	0.01	0.05	1.7	 EXITING EPA →
Heptachlor	0.01	0.05	1.7	 EXITING EPA →
Aldrin	0.01	0.05	1.7	 EXITING EPA →
Heptachlor epoxide	0.01	0.05	1.7	 EXITING EPA →
Endosulfan I	0.01	0.05	1.7	 EXITING EPA →

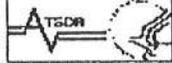
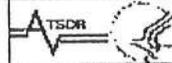
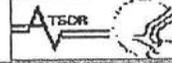
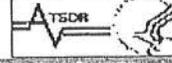
Dieldrin	0.02	0.10	3.3	 
4,4'-DDE	0.02	0.10	3.3	 
Endrin	0.02	0.10	3.3	 
Endosulfan II	0.02	0.10	3.3	 
4,4'-DDD	0.02	0.10	3.3	 
Endosulfan sulfate	0.02	0.10	3.3	 
4,4'-DDT	0.02	0.10	3.3	 
Methoxychlor	0.10	0.50	17.0	 
Endrin ketone	0.02	0.10	3.3	 
Endrin aldehyde	0.02	0.10	3.3	 
alpha-Chlordane	0.01	0.05	1.7	 
gamma-Chlordane	0.01	0.05	1.7	 
Toxaphene	1.0	5.0	170.0	 
Aroclor-1016	0.20	1.0	33.0	 
Aroclor-1221	0.40	2.0	67.0	 
Aroclor-1232	0.20	1.0	33.0	 
Aroclor-1242	0.20	1.0	33.0	 
Aroclor-1248	0.20	1.0	33.0	

				
Aroclor-1254	0.20	1.0	33.0	 
Aroclor-1260	0.20	1.0	33.0	 

[Top of Page]

**TARGET ANALYTE LIST (TAL)
METALS/CYANIDE AND THEIR DETECTION LIMITS***

ANALYTES	CONTRACT REQUIRED DETECTION LIMITS FOR:		DESCRIPTION
	WATER (ug/l)		
Aluminum	200		 
Antimony	60		 
Arsenic	10		 
Barium	200		 
Beryllium	5		 
Cadmium	5		 
Calcium	5000		
Chromium	10		 
Cobalt	50		 
Copper	25		 
Iron	100		
Lead	3		 
Magnesium	5000		
Manganese	15		
Mercury	0.2		 

Nickel	40	 
Potassium	5000	
Selenium	5	 
Silver	10	 
Sodium	5000	
Thallium	10	 
Vanadium	50	 
Zinc	20	 
Cyanide	10	 

*TAL Metal detection limits are expressed as instrument detection limits obtained in pure water. Detection limits for soils are adjusted for the amount of sample analyzed and percent moisture.

[| Top of Page |](#)

[| Back |](#) | [CLP Home](#) |

[| EPA Home](#) | [OSWER Home](#) | [Superfund Home](#) | [AOC Home](#) |
[| Search EPA](#) | [Search Superfund](#) | [Search CLP](#) | [Contact Us](#) |

URL: <http://www.epa.gov/clp/superfund/oerr/aoc/target.htm>
 This page was last updated on: September 23, 1998
 Site maintained by: Office of Emergency and Remedial Response
wong.willie@epa.gov

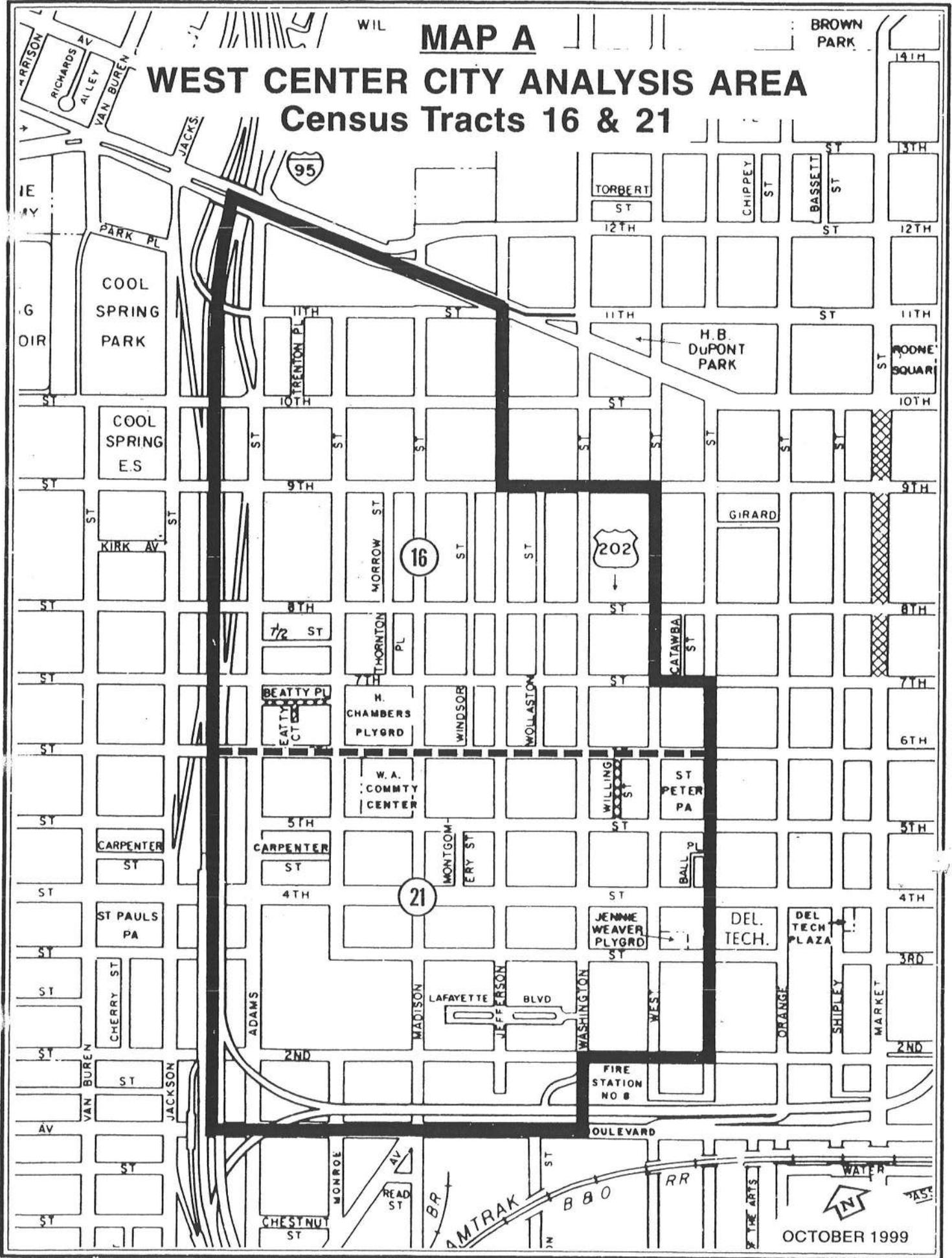
**West Center City Analysis Area
Comprehensive Development Plan
Maps**

WIL

MAP A

BROWN PARK

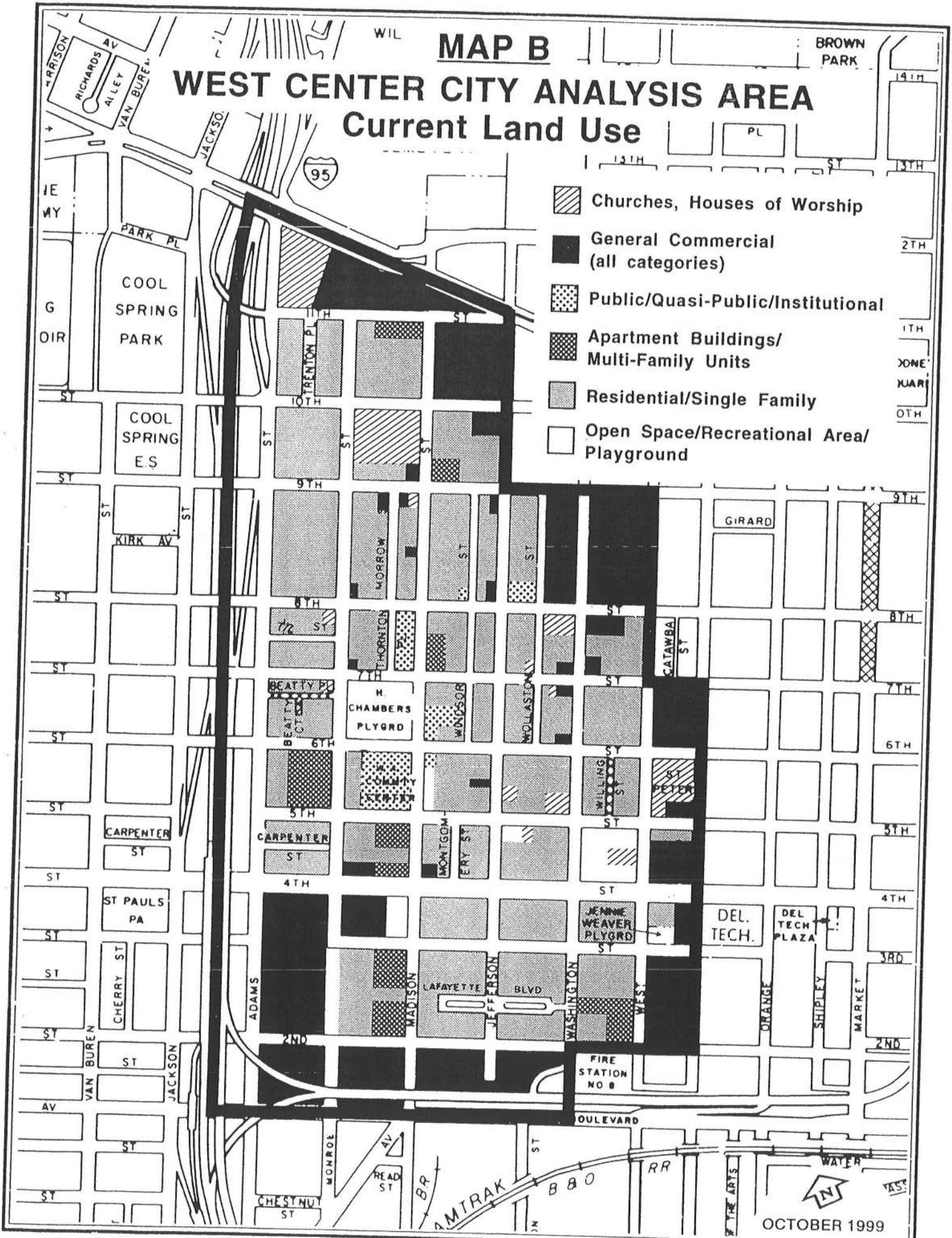
WEST CENTER CITY ANALYSIS AREA Census Tracts 16 & 21



MAP B

WEST CENTER CITY ANALYSIS AREA Current Land Use

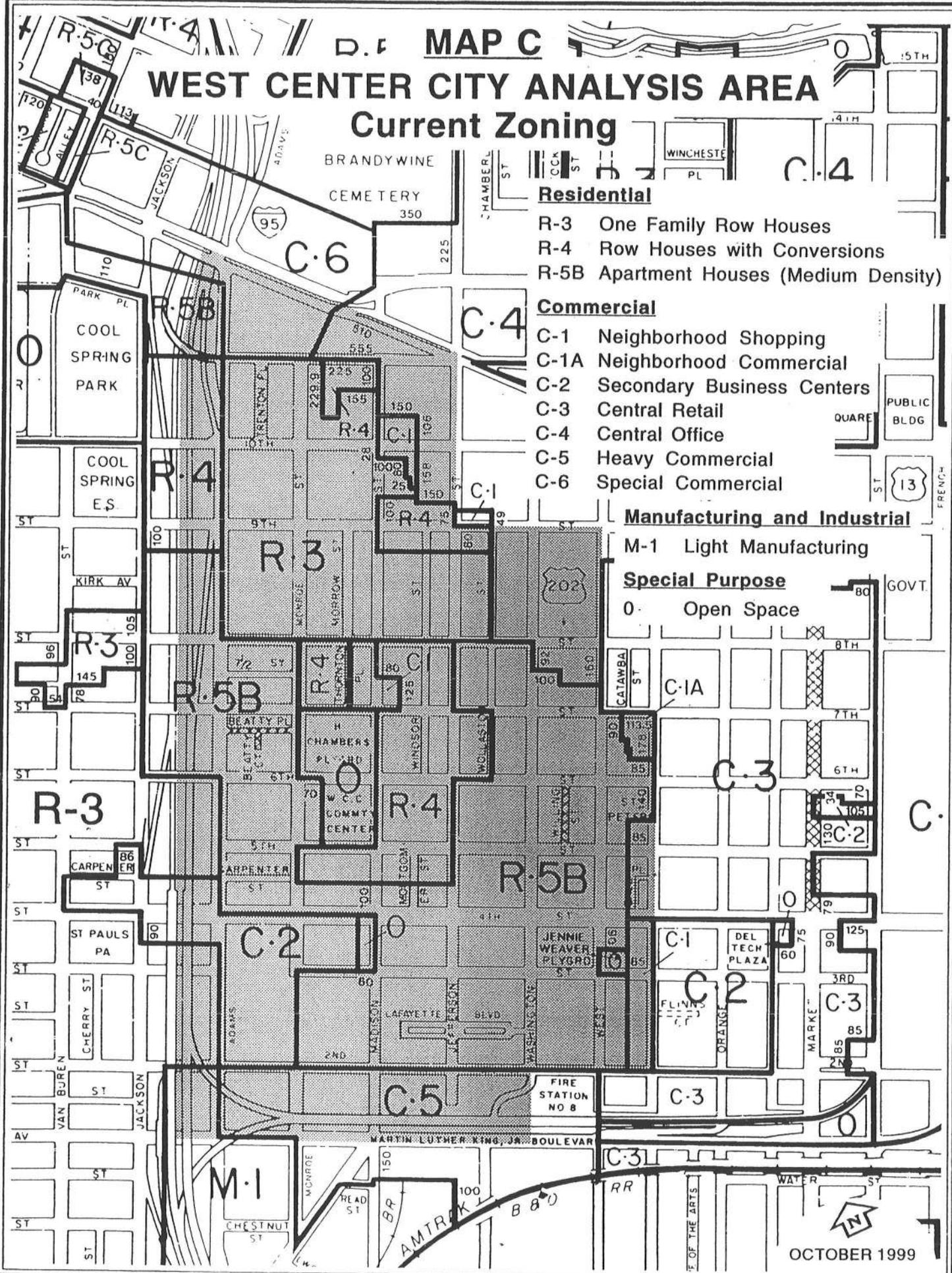
-  Churches, Houses of Worship
-  General Commercial (all categories)
-  Public/Quasi-Public/Institutional
-  Apartment Buildings/ Multi-Family Units
-  Residential/Single Family
-  Open Space/Recreational Area/ Playground



D.F. MAP C

WEST CENTER CITY ANALYSIS AREA

Current Zoning



Residential

- R-3 One Family Row Houses
- R-4 Row Houses with Conversions
- R-5B Apartment Houses (Medium Density)

Commercial

- C-1 Neighborhood Shopping
- C-1A Neighborhood Commercial
- C-2 Secondary Business Centers
- C-3 Central Retail
- C-4 Central Office
- C-5 Heavy Commercial
- C-6 Special Commercial

Manufacturing and Industrial

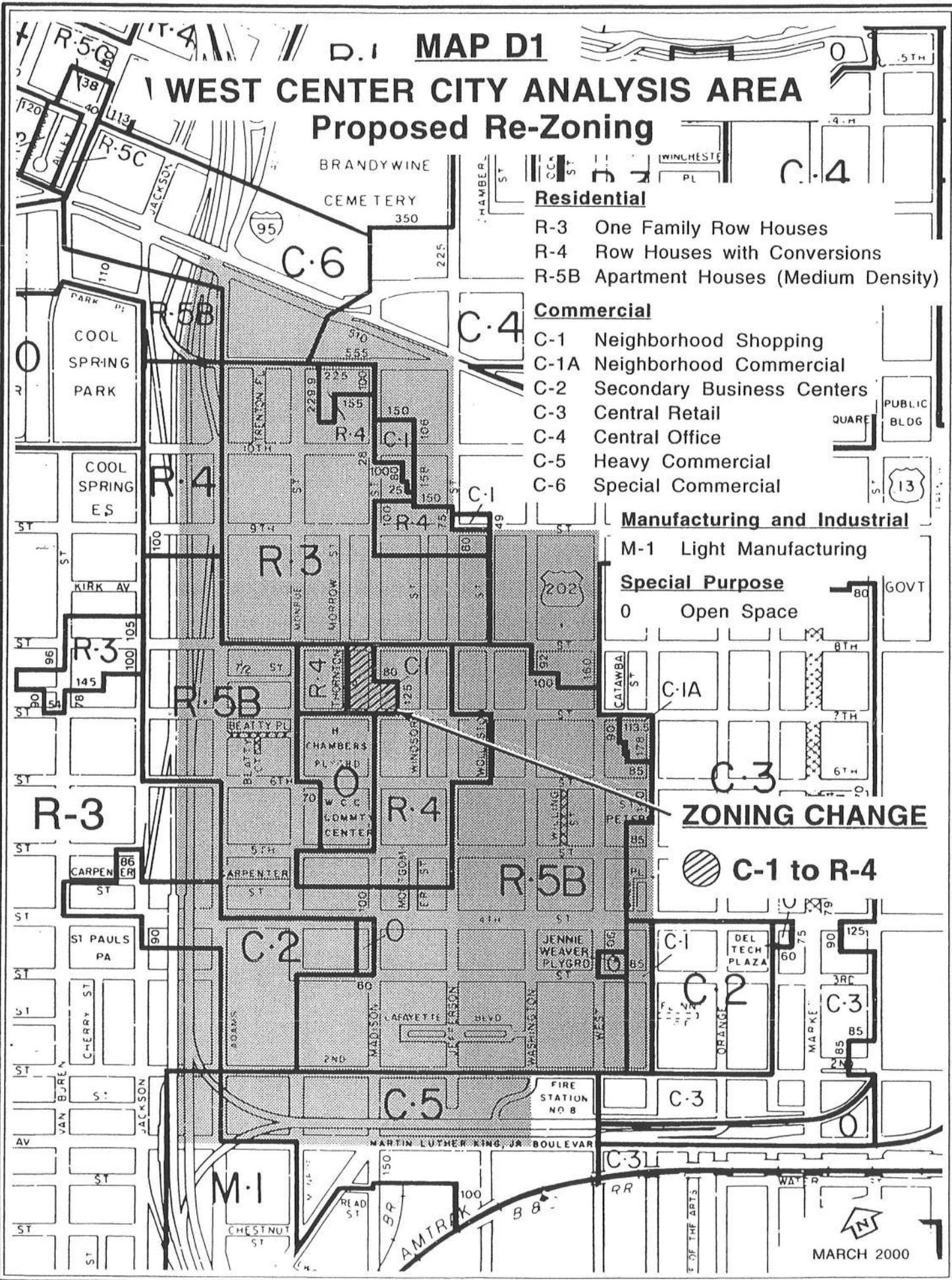
- M-1 Light Manufacturing

Special Purpose

- O Open Space

D.1 MAP D1

WEST CENTER CITY ANALYSIS AREA Proposed Re-Zoning



Residential

- R-3 One Family Row Houses
- R-4 Row Houses with Conversions
- R-5B Apartment Houses (Medium Density)

Commercial

- C-1 Neighborhood Shopping
- C-1A Neighborhood Commercial
- C-2 Secondary Business Centers
- C-3 Central Retail
- C-4 Central Office
- C-5 Heavy Commercial
- C-6 Special Commercial

Manufacturing and Industrial

- M-1 Light Manufacturing

Special Purpose

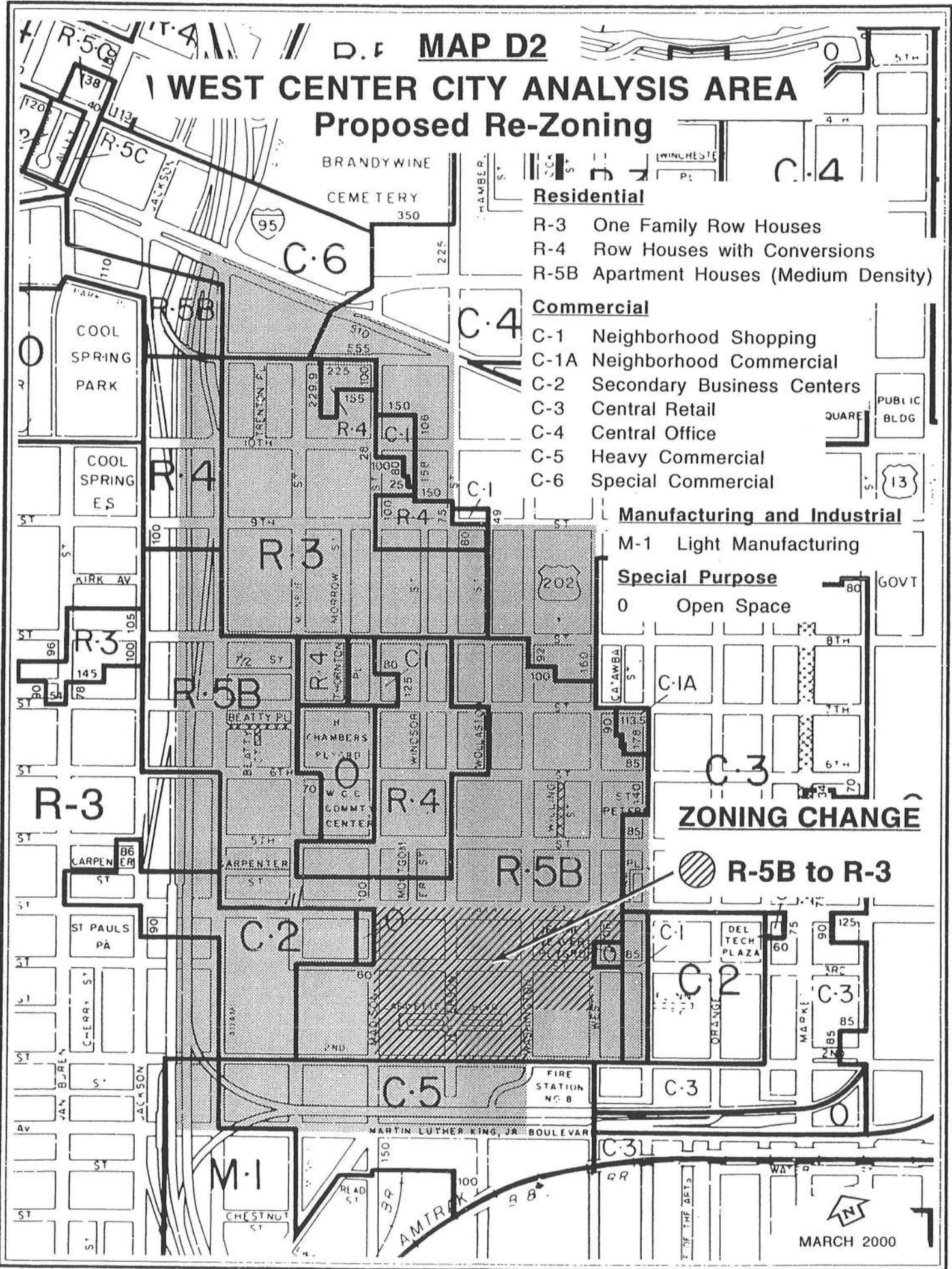
- O Open Space

ZONING CHANGE

C-1 to R-4

D. MAP D2

WEST CENTER CITY ANALYSIS AREA Proposed Re-Zoning



Residential

- R-3 One Family Row Houses
- R-4 Row Houses with Conversions
- R-5B Apartment Houses (Medium Density)

Commercial

- C-1 Neighborhood Shopping
- C-1A Neighborhood Commercial
- C-2 Secondary Business Centers
- C-3 Central Retail
- C-4 Central Office
- C-5 Heavy Commercial
- C-6 Special Commercial

Manufacturing and Industrial

- M-1 Light Manufacturing

Special Purpose

- O Open Space

ZONING CHANGE

 R-5B to R-3

D. MAP D3

WEST CENTER CITY ANALYSIS AREA Proposed Re-Zoning

Residential

- R-3 One Family Row Houses
- R-4 Row Houses with Conversions
- R-5B Apartment Houses (Medium Density)

Commercial

- C-1 Neighborhood Shopping
- C-1A Neighborhood Commercial
- C-2 Secondary Business Centers
- C-3 Central Retail
- C-4 Central Office
- C-5 Heavy Commercial
- C-6 Special Commercial

Manufacturing and Industrial

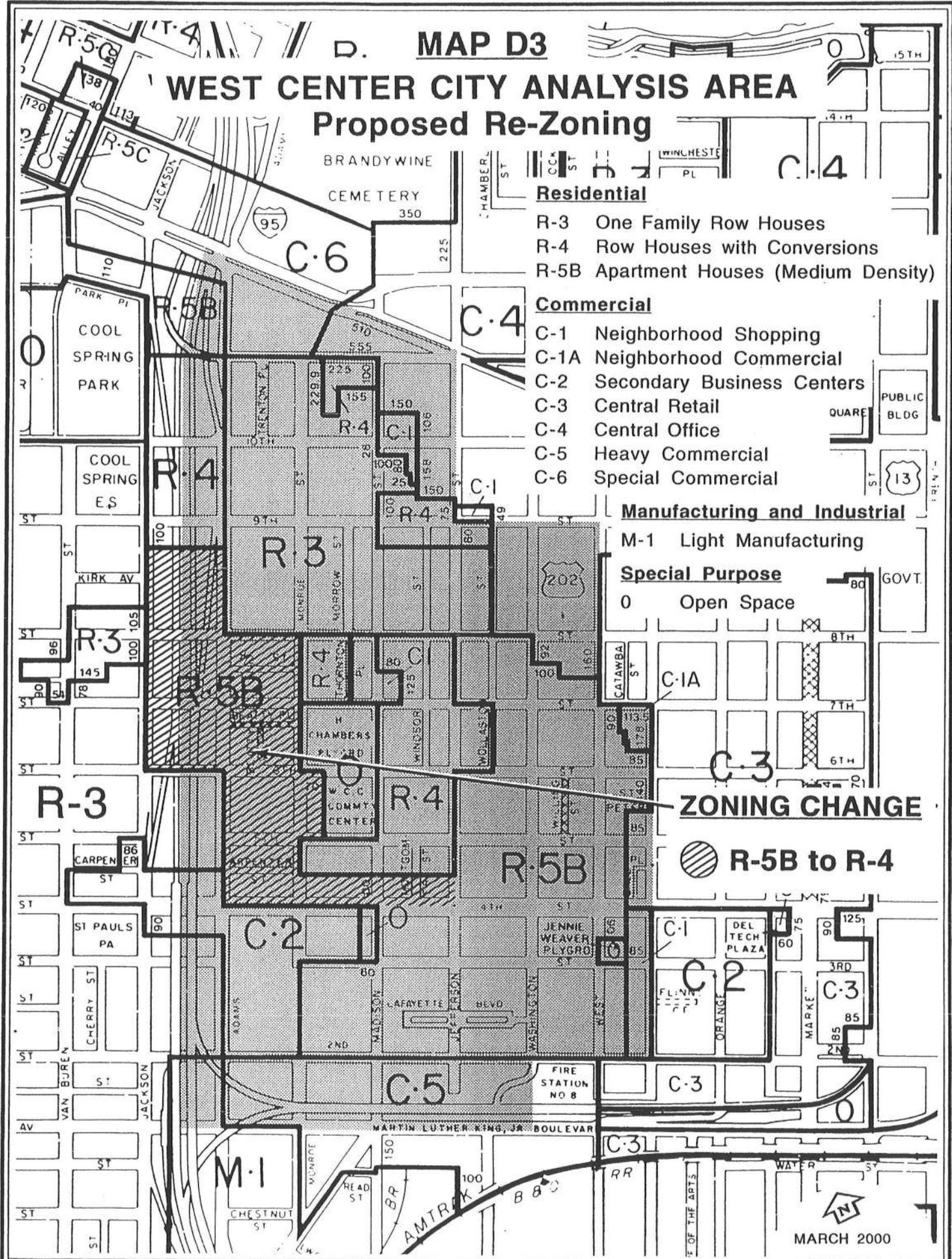
- M-1 Light Manufacturing

Special Purpose

- 0 Open Space

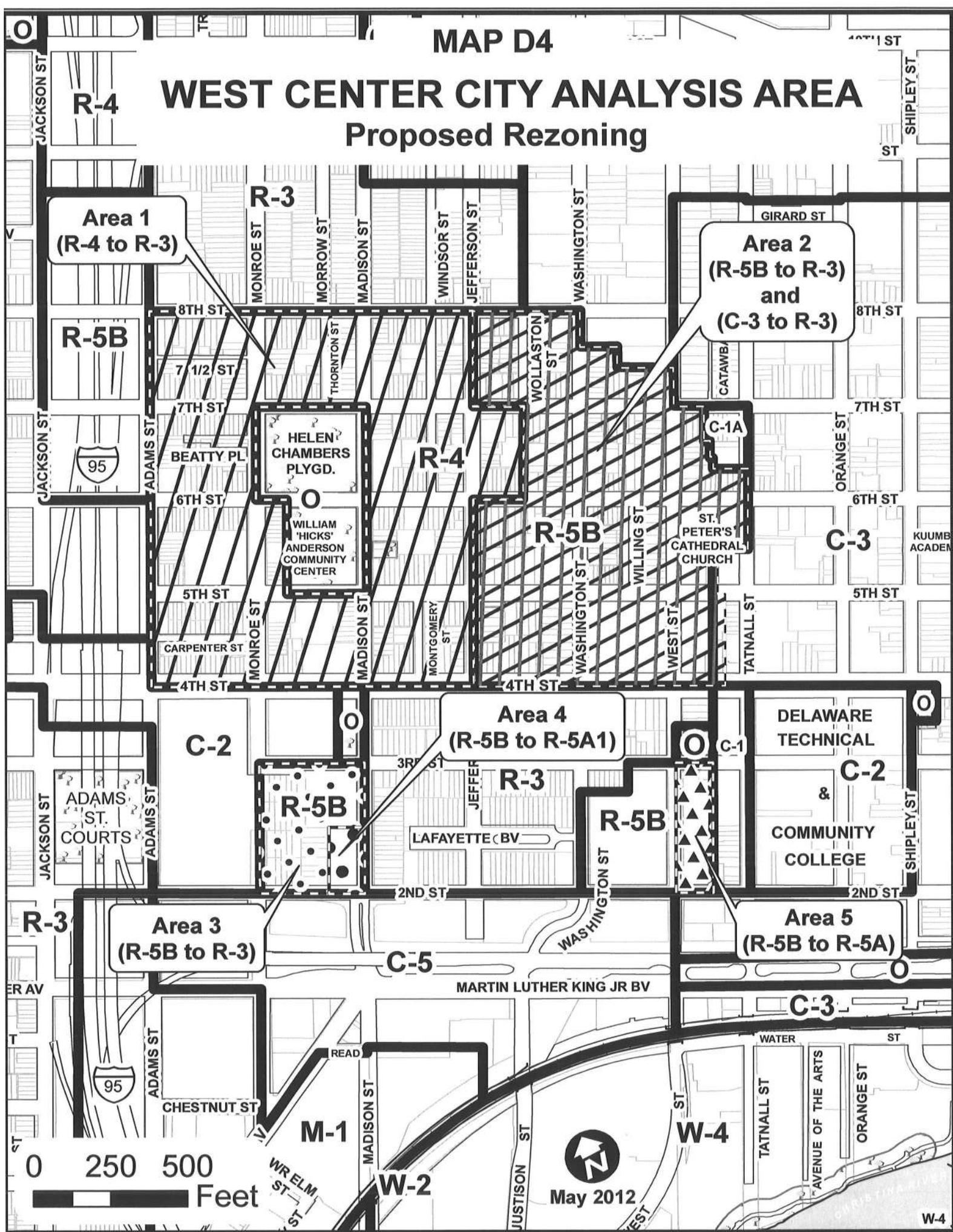
ZONING CHANGE

 R-5B to R-4



MAP D4

WEST CENTER CITY ANALYSIS AREA Proposed Rezoning



WEST CENTER CITY ANALYSIS AREA

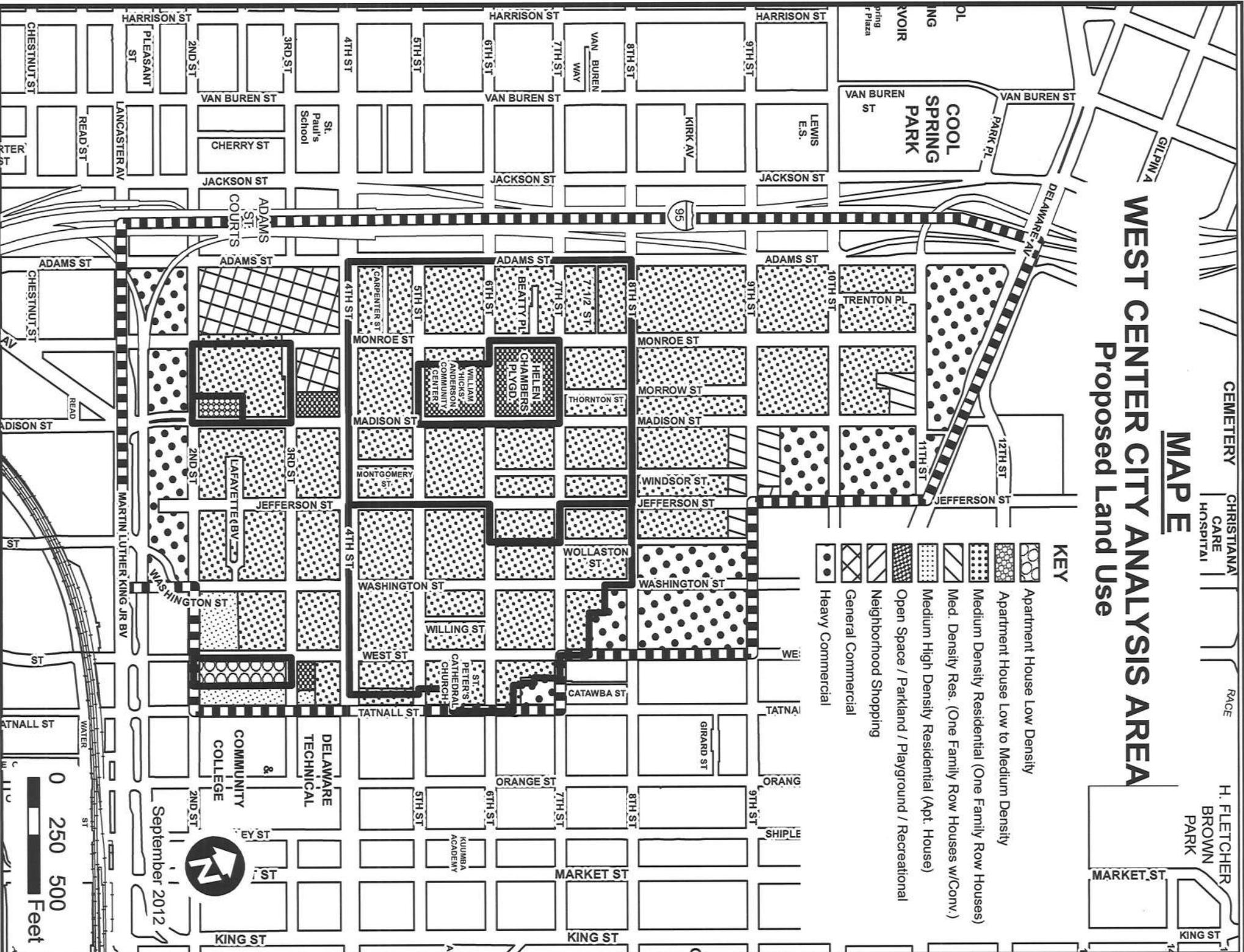
Proposed Land Use

MAP E

CEMETERY
CHRISTIANA CARE HOSPITAL
RACE

H. FLETCHER BROWN PARK
KING ST

- KEY**
- Apartment House Low Density
 - Apartment House Low to Medium Density
 - Medium Density Residential (One Family Row Houses)
 - Med. Density Res. (One Family Row Houses w/Conv.)
 - Medium High Density Residential (Apt. House)
 - Open Space / Parkland / Playground / Recreational
 - Neighborhood Shopping
 - General Commercial
 - Heavy Commercial



September 2012

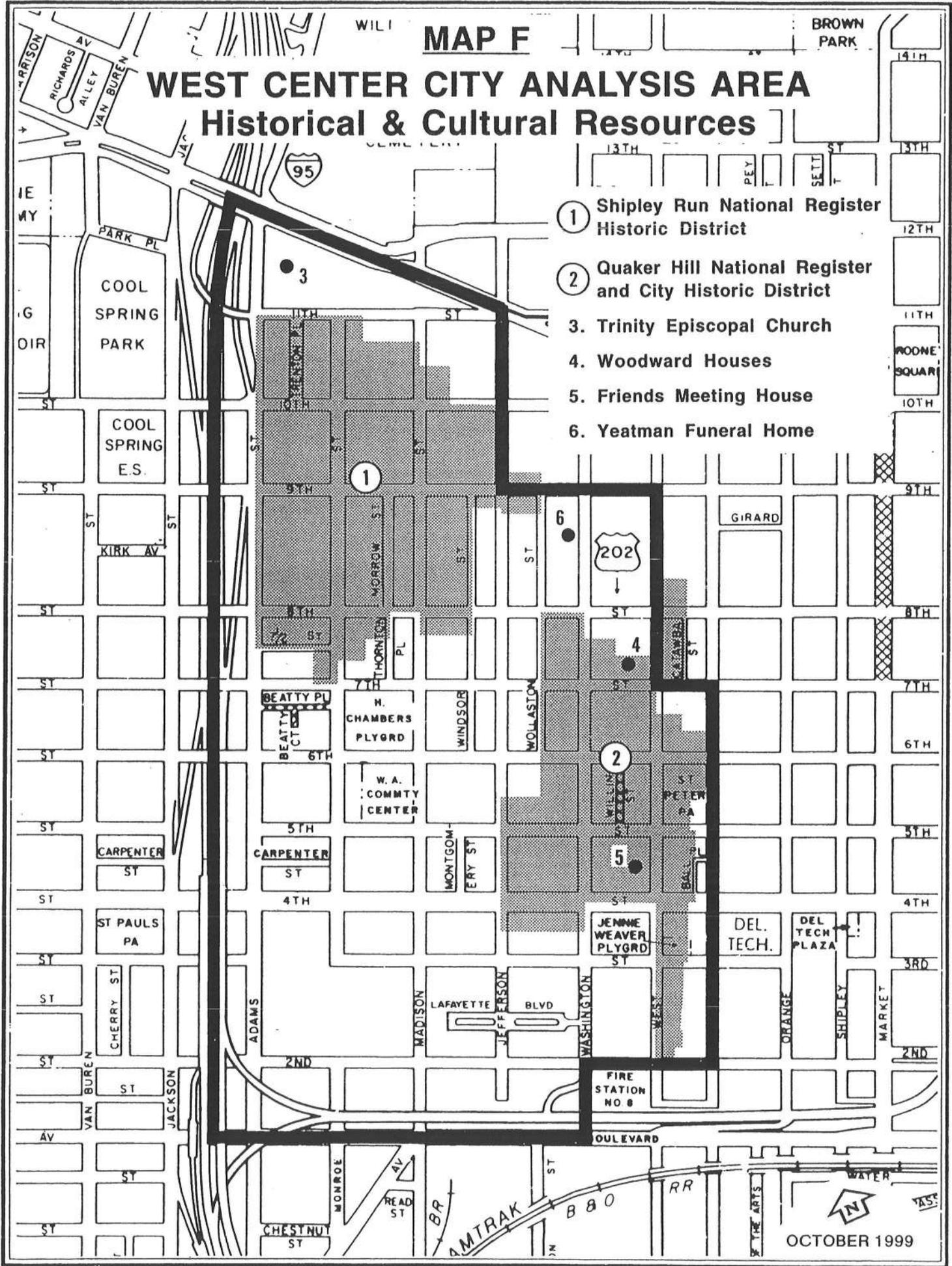


0 250 500 Feet

MAP F

WEST CENTER CITY ANALYSIS AREA Historical & Cultural Resources

- ① Shipley Run National Register Historic District
- ② Quaker Hill National Register and City Historic District
- 3. Trinity Episcopal Church
- 4. Woodward Houses
- 5. Friends Meeting House
- 6. Yeatman Funeral Home

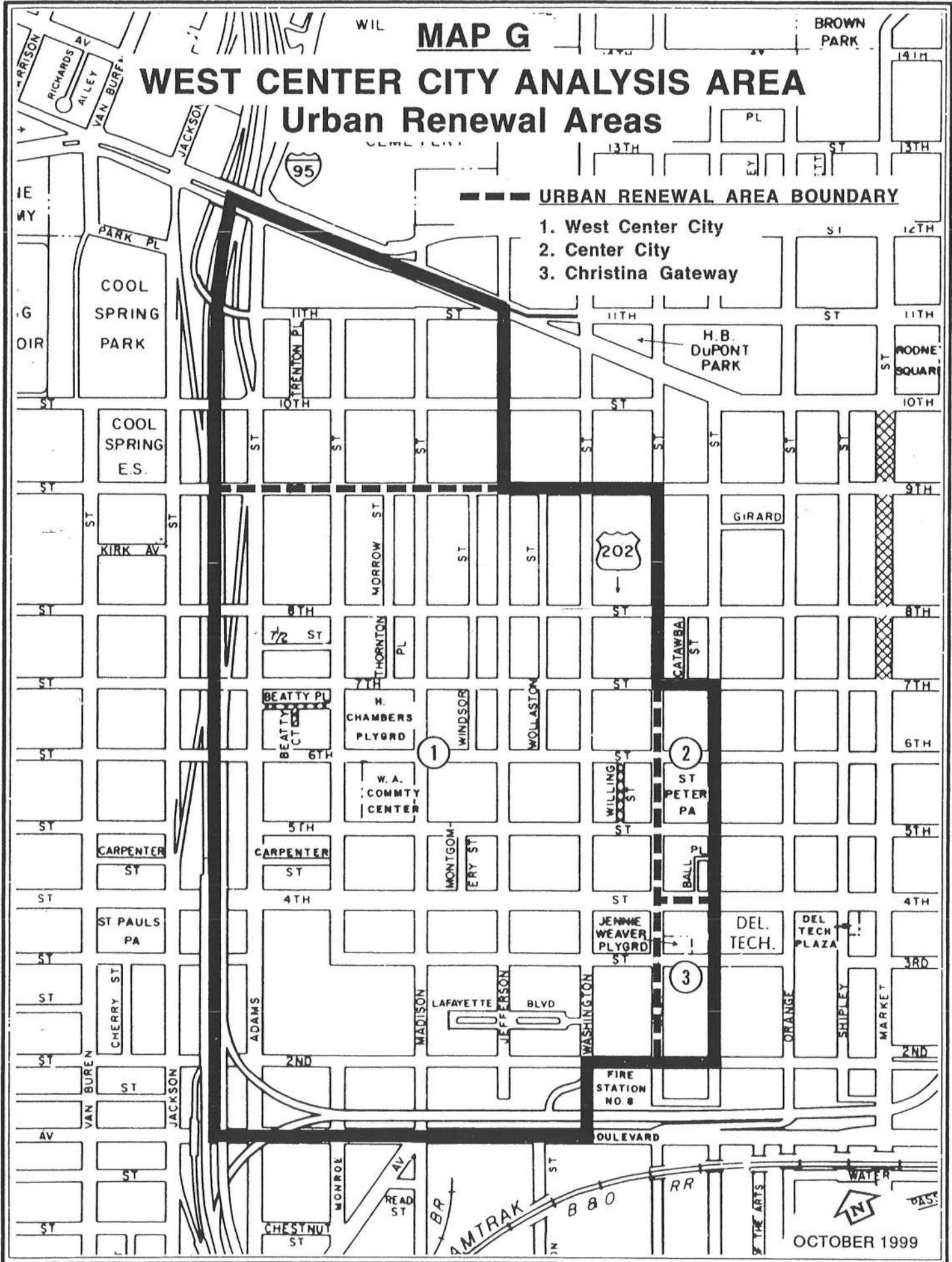


MAP G

WEST CENTER CITY ANALYSIS AREA Urban Renewal Areas

--- URBAN RENEWAL AREA BOUNDARY

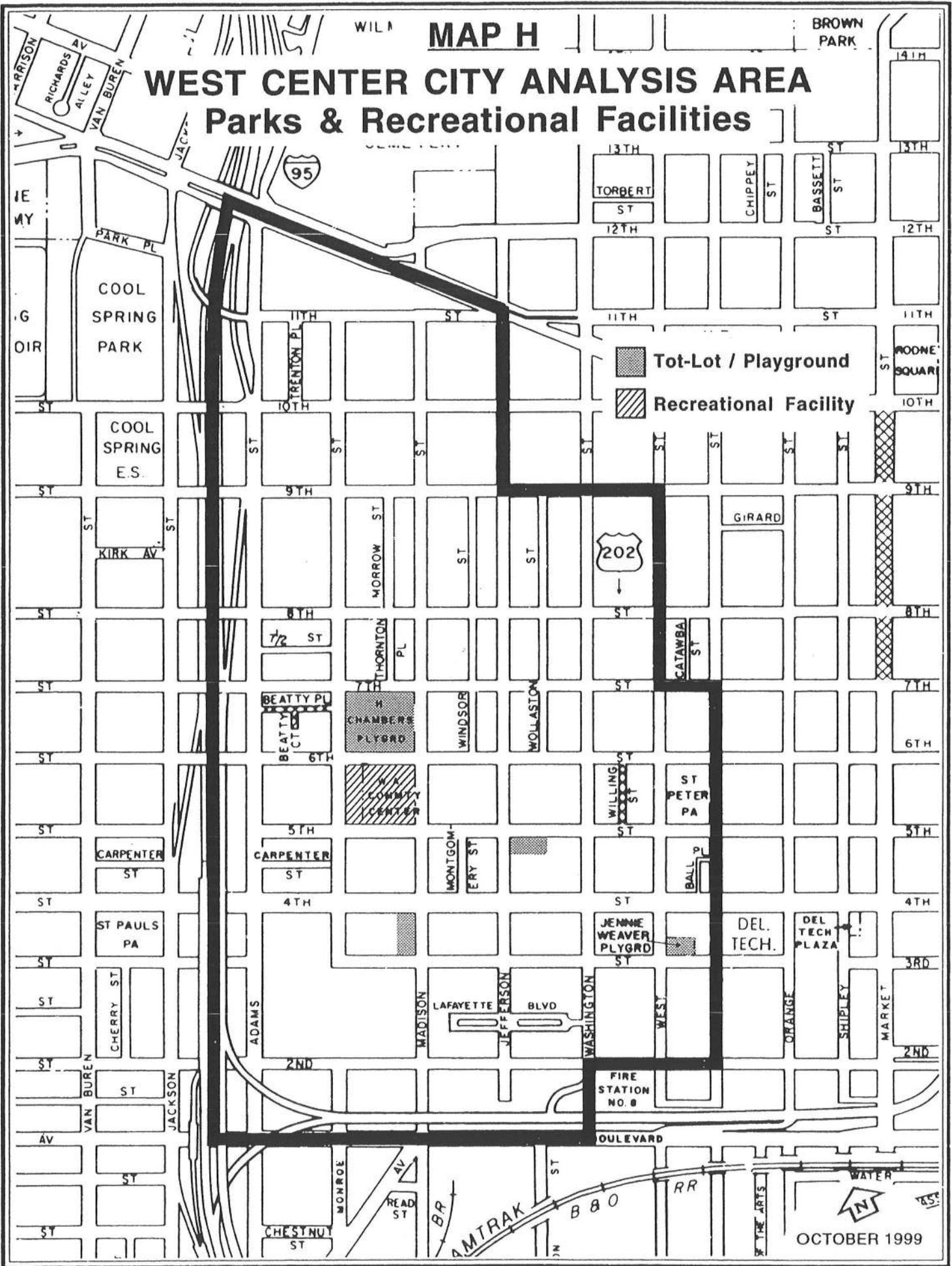
1. West Center City
2. Center City
3. Christina Gateway



MAP H

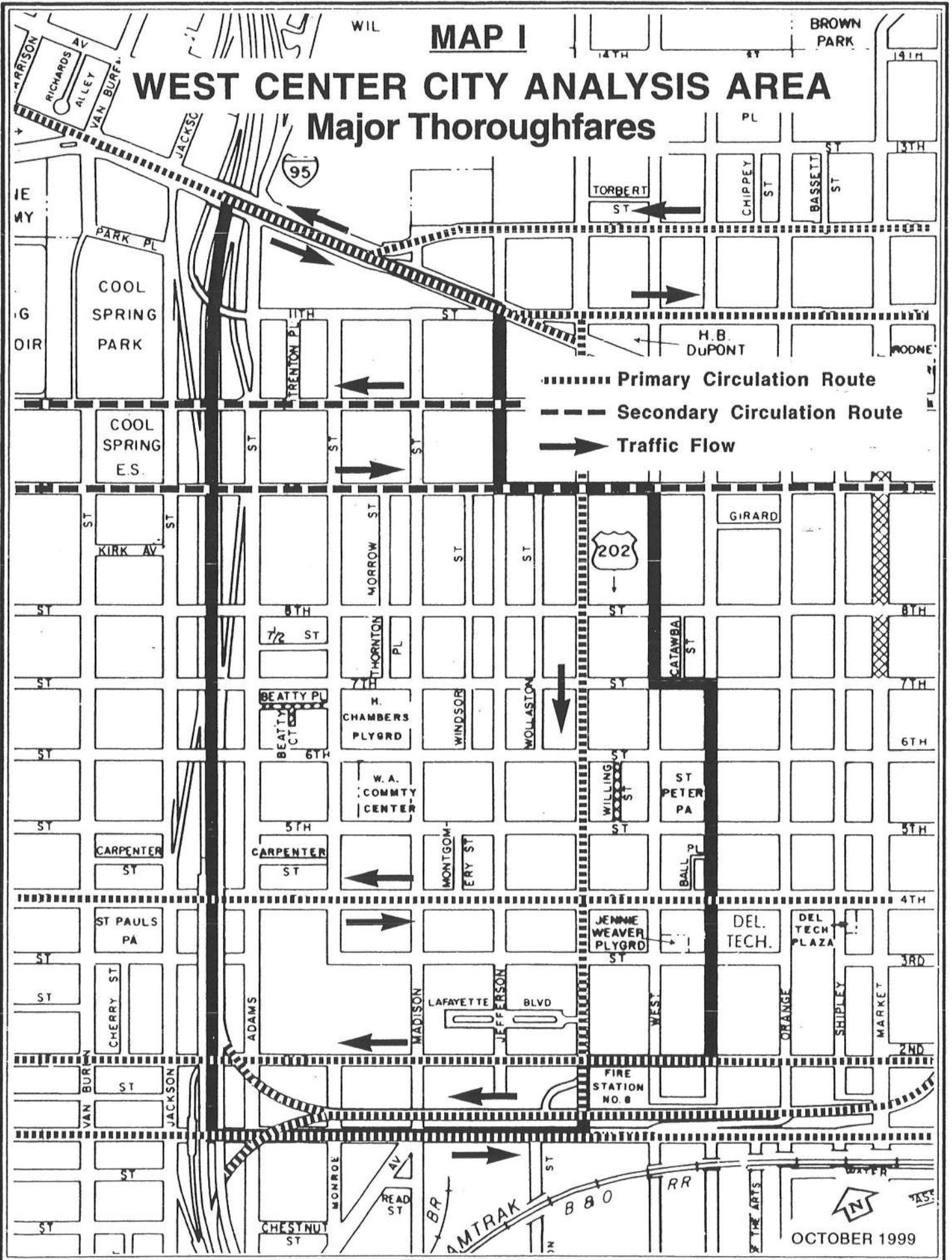
WEST CENTER CITY ANALYSIS AREA Parks & Recreational Facilities

-  Tot-Lot / Playground
-  Recreational Facility



MAP I

WEST CENTER CITY ANALYSIS AREA Major Thoroughfares



- Primary Circulation Route
- Secondary Circulation Route
- Traffic Flow

MAP J

WEST CENTER CITY ANALYSIS AREA Public Transit Route Corridors & Service Areas

