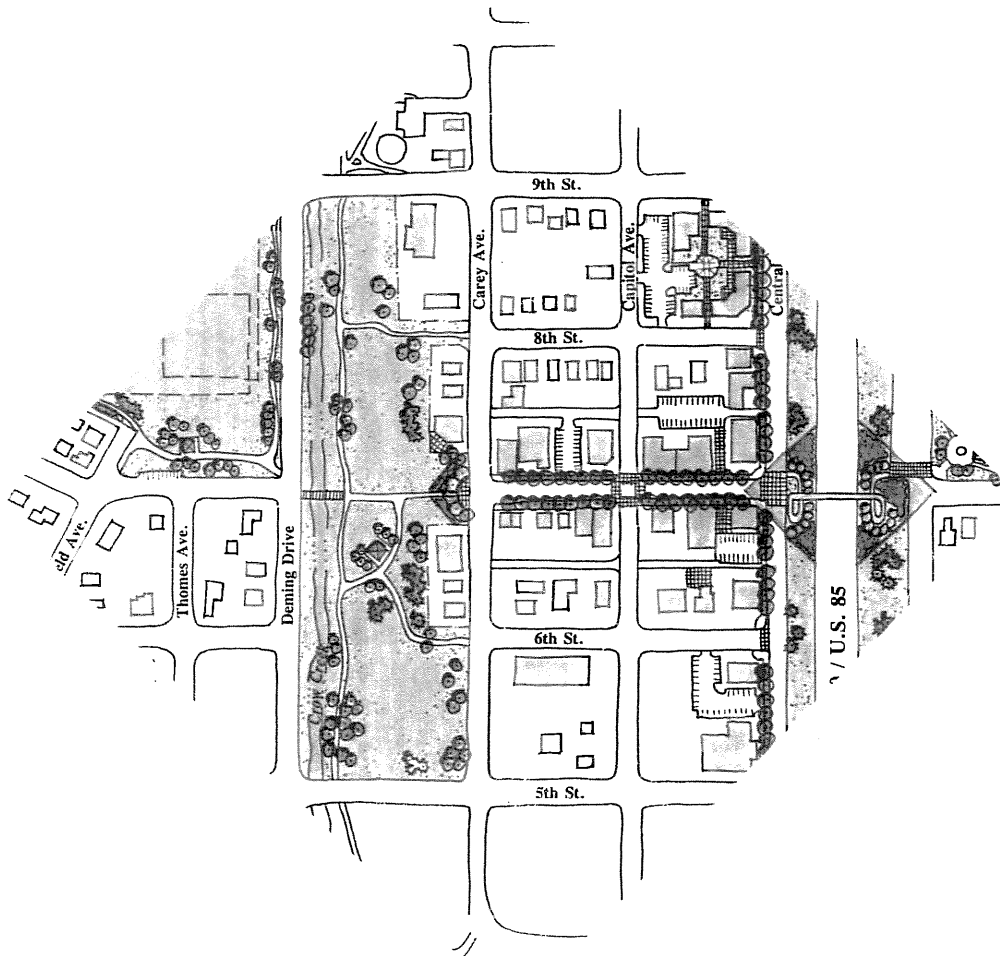


Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Hebard, Cole and Goins Neighborhoods Plan



Jack Noblitt & Associates, P.C.
EDAW, Inc.

August 1995

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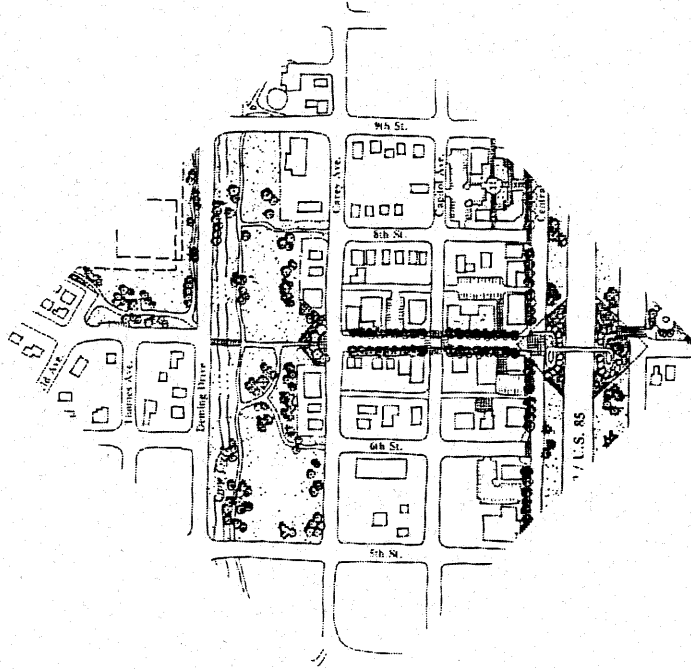
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Chapter I

Introduction

CHAPTER I -- INTRODUCTION

The Purpose of The Plan

The Purpose of this Study is to create a specific action program that will, over a ten year time period, assist in the redevelopment of the area and create the climate and opportunities necessary to attract new commercial, industrial and residential developments to the Study Area. The purpose is based around the premise that a sound infrastructure base coupled with a vision of how the area is changing, can attract new developments, jobs, and growth opportunities of all types.

Some of the specific problems in the Study Area for which recommendations were requested were:

- * the future use of the old Johnson Junior High School
- * possible land use buffer adjacent to the Frontier Oil Refinery
- * realignment of Norris Viaduct to connect to 9th Street
- * ways to discourage through traffic on 5th Street

Description of the Study Area

The Study Area includes the southern portion of the City of Cheyenne, as indicated in Figure 1-1. The Study Area is generally the developed area of Cheyenne that is south of the Union Pacific Railroad (UPRR) yards, and north of Interstate Highway 80 (I-80). It can be noted in Figure 1-1, that the Study Area does extend south of I-80 at several locations to include sections of the City that were not included in the South Cheyenne Infrastructure Improvement and Development Action Plan. That Study was completed prior to the initiation of this Study.

The east boundary of the Study Area is South College Drive and the west boundary is Interstate 25.

The Study Area is approximately 3.3 square miles, and has a population of approximately 6,225 (1990 census).

The Study Area is served by three elementary schools -- Hebard, Cole, and Goins -- which resulted in the study being called the Hebard, Cole and Goins Neighborhood Plan.

The Study Area is in the Crow Creek drainage area, with the exception of the west end, which is in the Clear Creek drainage area. Clear Creek is a tributary of Crow Creek, and drains into Crow Creek just south of the Ames Underpass.

The area is generally within the City Limits of Cheyenne, and is provided with water and sanitary sewer service by the Cheyenne Board of Public Utilities.

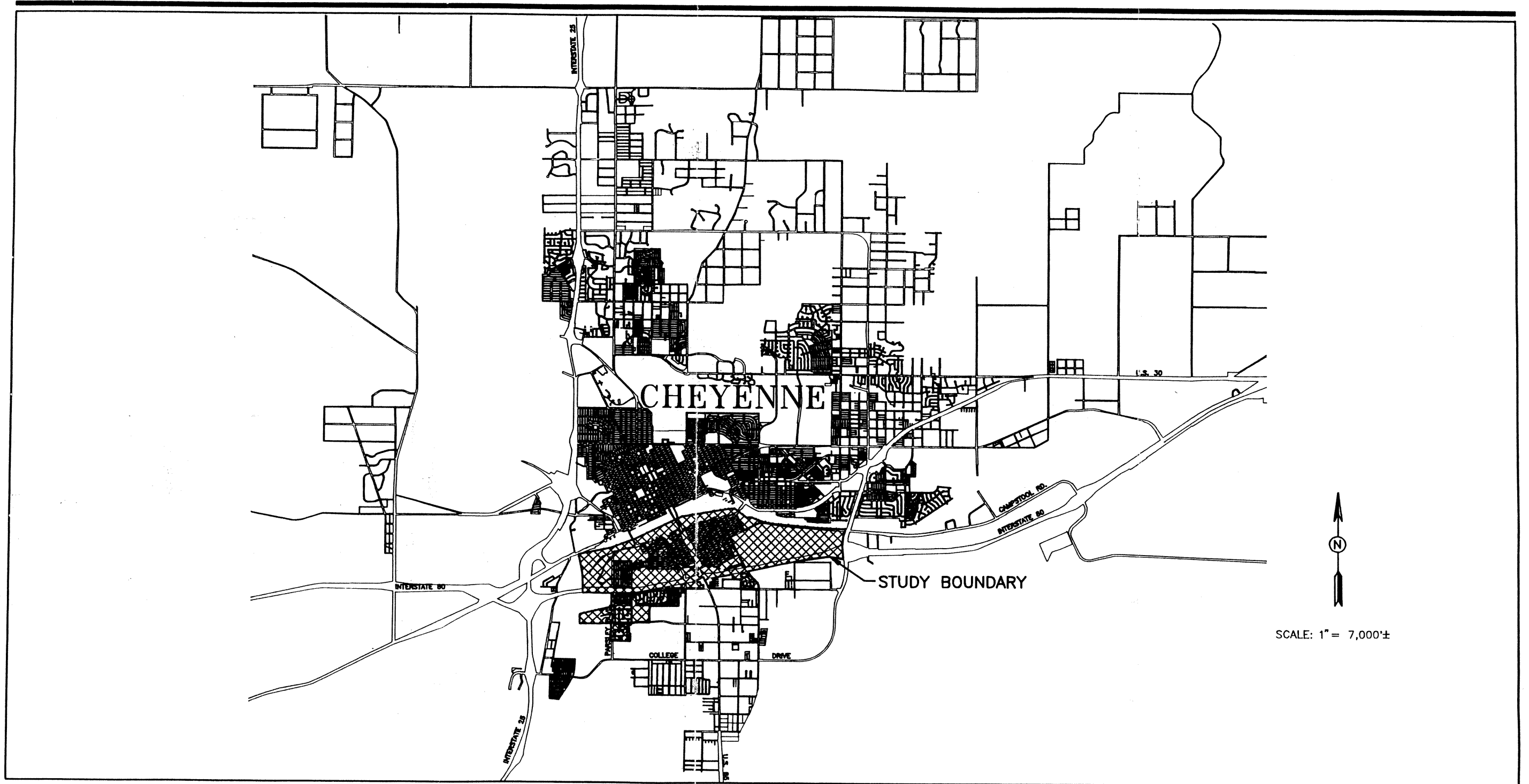
Interstate Highway 180 (I-180) divides the Study Area, and connects the Central Business District of Cheyenne with I-80 at the south edge of the study area. There are two at-grade intersections on I-180 in the Study Area, at 9th and 5th Streets.

There are several parks, schools and other public ownerships in the Study Area. The names and locations of these facilities are indicated in Figure 1-2.

The Planning and Public Involvement Process

The Cheyenne Area Transportation Planning Process (ChATPP) retained the engineering firm of Jack Noblitt & Associates, P.C. with assistance from EDAW, Inc., a planning and landscape architecture firm to conduct a planning study to accomplish the stated purposes. The project was conducted over a six month period and the process involved (1) defining what the vision for the Study Area should be in the future, (2) determining what types of land uses and public amenities are desirable, (3) determining if the existing public infrastructure can support additional development, and (4) identifying specific projects that are needed to support or encourage economic development in the area.

The Plan was developed with a Steering Committee comprised of the following interested citizens appointed by the Mayor:

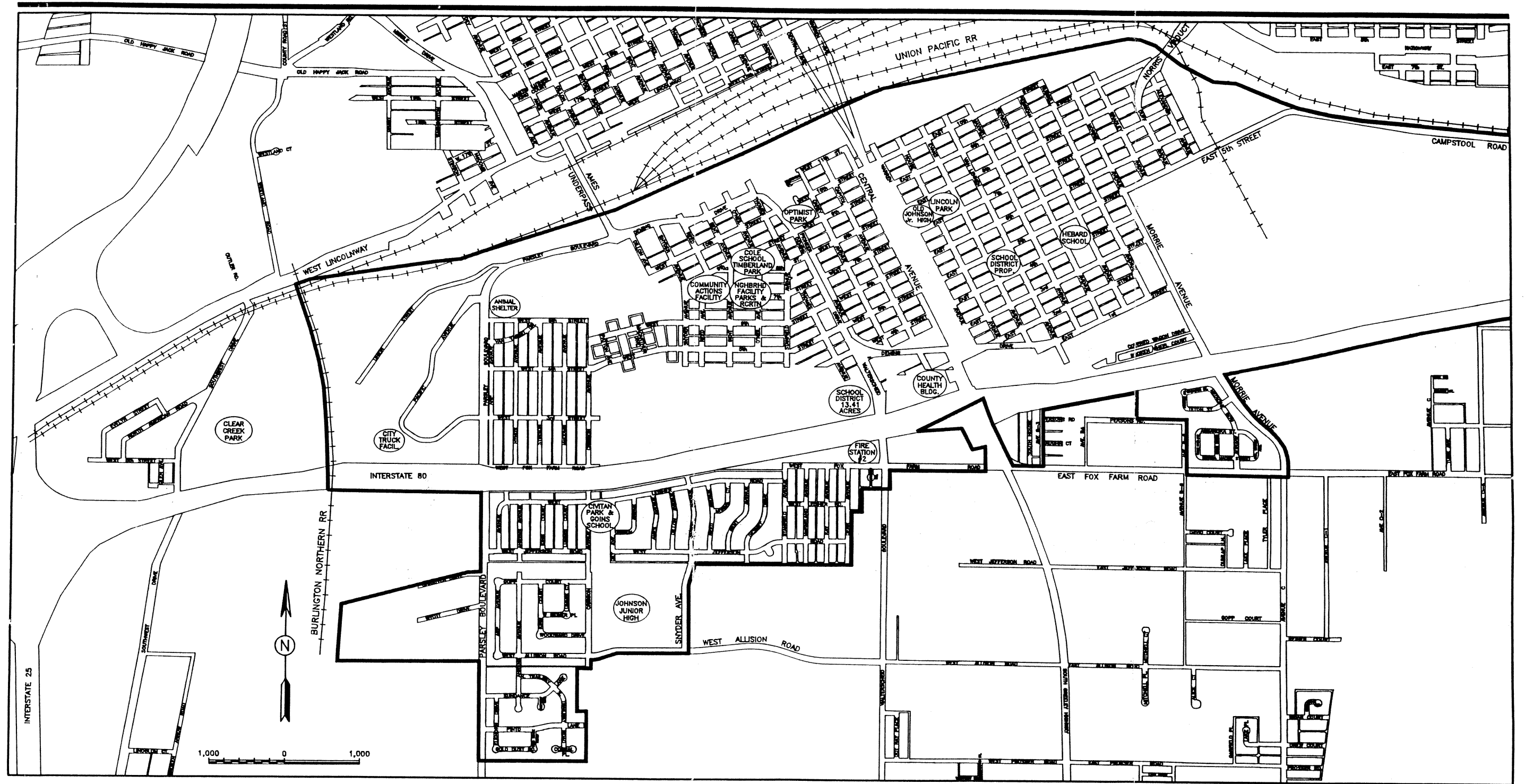


Hebard, Cole and Goins Neighborhoods Plan REGIONAL LOCATION MAP

Jack Noblitt & Associates, P.C.
EDAW, Inc.

September 1995

Figure 1-1



Hebard, Cole and Goins Neighborhoods Plan PUBLIC FACILITIES OWNERSHIPS

Jack Noblitt & Associates, P.C.
 ED&W, Inc.

September 1995

Figure 1-2

Tammy Young, Housing and Community Development
Advisory Council
Patsy Emerson, Housing and Community Development
Advisory Council
Ruby Gregorio, Housing and Community Development
Advisory Council
John Simons, Housing and Community Development
Advisory Council
Mike Flaherty, Housing and Community Development
Advisory Council
Sue Shirley, Housing and Community Development
Advisory Council
Della Macias, Housing and Community Development
Advisory Council
Rev. Samuel Reid, Housing and Community
Development Advisory Council
Rose Ramirez, Local Resident
Katherine Bibbey, Local Resident
Darleen DeVaul, Member of Cheyenne Laramie County
Regional Planning Commission
Mike Schroll, Local Businessman
Gary Schaeffer, Frontier Refinery
Brad Oberg, Planning Director, School District No. 1
Lynn Westbrook, Principal, Hebard Elementary School
Jim Lynch, City Councilman, Ward I
Will Sanchez, Community Development Administrator
Tom Bonds, Director, Cheyenne Planning Office
Tom Mason, Director, Cheyenne Area Transportation
Planning Process

This group met four times as a Steering Committee, attended two public meetings, and also attended other meetings with elected officials, affected agencies and interest groups.

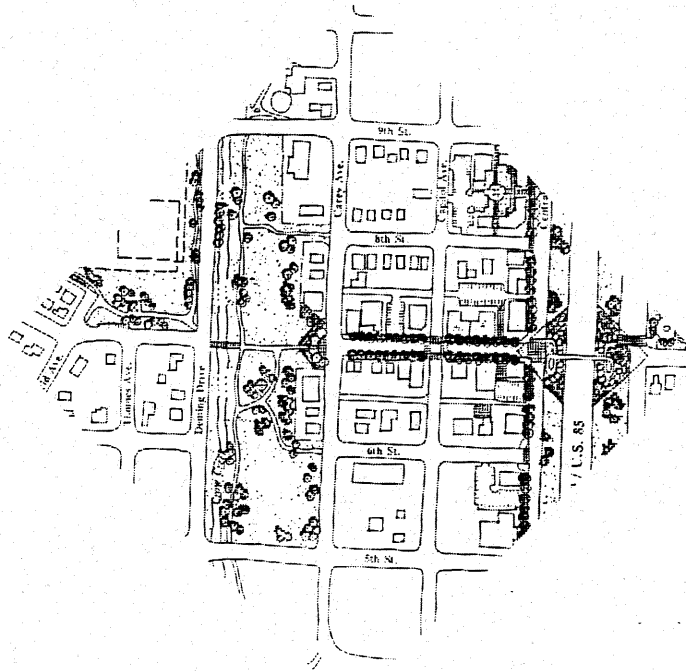
Related Plans, Studies and Reports

The study area has been included in numerous planning studies in the past few years. These include:

- The 1992 Cheyenne Area Development Plan which, among other things, outlines general land use classifications.

-
- Plans prepared by the Cheyenne Board of Public Utilities for the City's water supply and wastewater treatment and collection systems.
 - The Cheyenne Area Transportation Plan developed by the Cheyenne Area Transportation Planning Process (ChATPP)
 - The City of Cheyenne Parks and Recreations Facilities Master Plan.
 - A study by the ChATPP Pavement Program Engineer to evaluate the condition of streets and prioritize improvements to them.
 - Drainage studies for Crow Creek and Clear Creek which recommend drainage improvements.

All of these studies were considered when developing this plan and many are discussed in more detail later in this document.



Chapter II

Inventory of Existing Conditions

CHAPTER II -- INVENTORY OF EXISTING CONDITIONS

This chapter describes the zoning, land use and infrastructure system that exists in the Hebard, Cole and Goins neighborhoods.

Existing Zoning

The existing zoning districts within the study area were mapped to understand what land uses were currently approved by the City of Cheyenne (see Figure 2.1, Existing Zoning). Residential districts occupy a significant proportion of the land area and are located in three distinct neighborhoods: the Hebard neighborhood east of I-180, the Cole neighborhood between Deming Drive and Parsley Boulevard, and the Goins neighborhood south of I-80. The MR-1 District (Established Medium Density Residential) dominates each neighborhood, with smaller areas of MR-2 (Developing Medium Density Residential) and HR-2 (Developing High Density Residential) located in the Cole neighborhood just north of I-80. The MR-1 and MR-2 Zone Districts allow for single-family residences, townhomes, duplexes and multi-family dwelling units and specify a minimum lot size of 7,000 square feet for new single-family developments. The HR-2 Zone District allows for single-family residences, bed and breakfasts, group day-care homes, hospitals and nursing homes, offices, schools, townhomes, duplexes and multi-family dwelling units, and specifies a minimum lot size of 5,000 square feet for new single-family developments.

One small area located between Deming Drive and Capitol Avenue is zoned MUR (Mixed Use with Residential Emphasis). The MUR Zone District is for existing medium density residential areas that are changing to include businesses and other uses while remaining primarily residential.

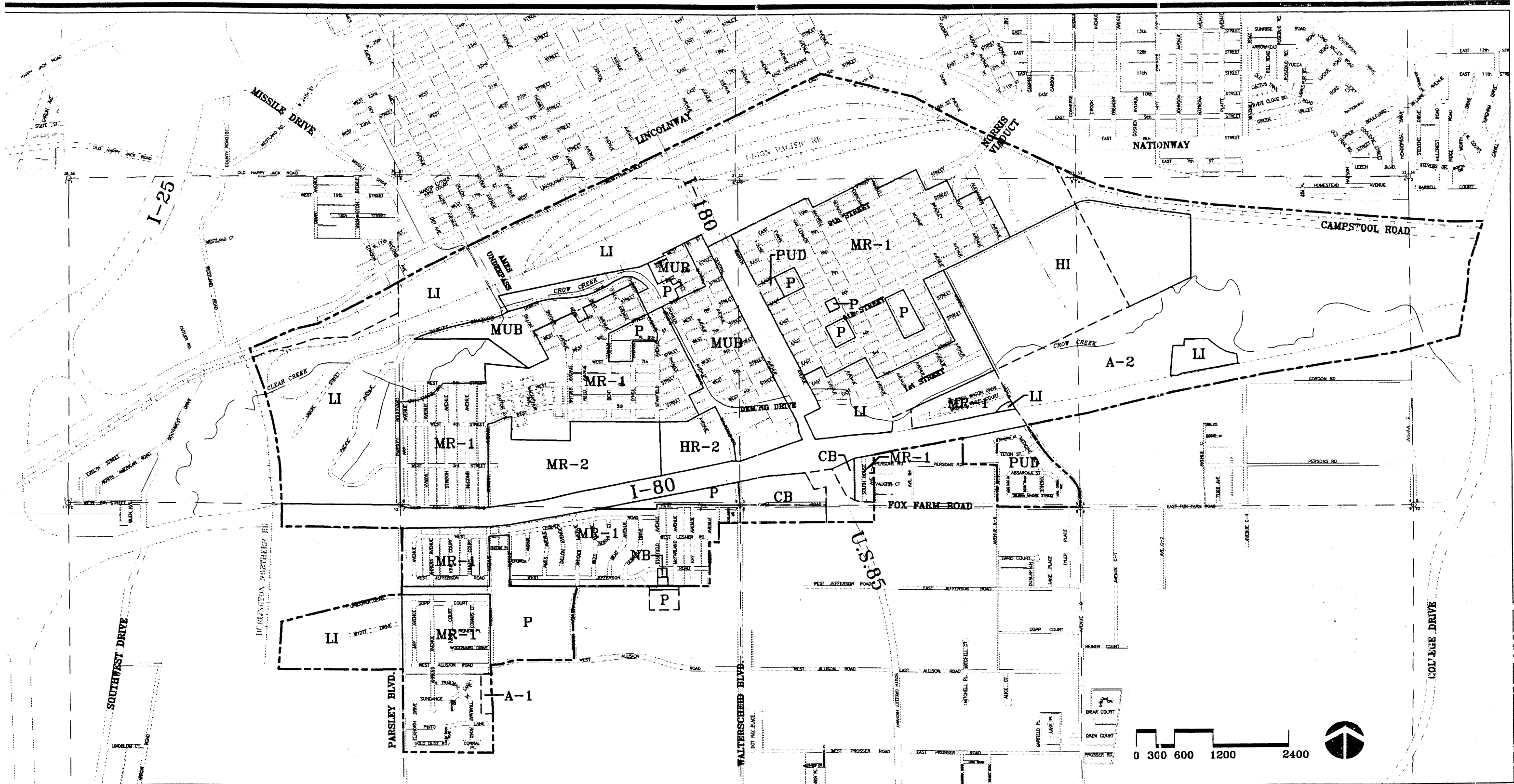
The LI Zone District (Light Industrial) also occupies a large proportion of the land area. The LI District is intended for environmentally controlled manufacturing or intensive employment uses, and may also have accessory commercial or office uses. The LI zone allows uses such as warehousing, wholesale distributors, retail sales,

storage parks, recycling centers and any industrial, manufacturing, fabrication or processing uses which do not emit noxious noise, smoke, odor or dust beyond their property, and which do not emit pollutants to the soil. Areas designated LI occur mostly along the northern and western edges of the study area and include the railroad yard and two industrial parks. A smaller area of LI zoning is adjacent to 1st Street and Morrie Avenue, between I-180 and the refinery. An isolated piece of LI zoning occurs south of Crow Creek in the eastern portion of the study area.

Parcels in the central portion of the study area, along the western side of I-180, on the south side of the interchange at I-180 and I-80, and on the south side of Deming Drive near the Ames Underpass are primarily zoned for business use. These zones are CB (Community Business) and MUB (Mixed Use with Business Emphasis). The CB Zone District is intended to be used as retail centers serving more than one neighborhood. The CB zone allows uses such as grocery stores, department stores, gas stations, restaurants, offices, child care facilities and hotels, among other uses. The MUB district is intended for areas that are transitioning from residential uses to the business uses described above.

The HI Zone District (Heavy Industrial) is located east of Morrie Avenue and surrounds the refinery. It is the only parcel zoned HI in the study area. The HI Zone District is intended for uses which should be isolated and buffered in order to protect both the community and the land use. The HI zone allows for any industrial, manufacturing, fabrication or processing uses which do not emit noxious noise, smoke, odor or dust beyond the confines of the property, and which do not emit pollutants to the soil. Other uses include railroad yards, storage parks, warehousing, wholesaling, and recreational and child care associated with other uses. Uses that do not conform with the above (e.g. the existing refinery) require Board approval after a public hearing.

The P Zone District (Public) is primarily for government buildings and uses, schools, open space and parks, hospitals, recreational facilities and child care facilities.



--- Section Line
 --- City Limits
 --- Study Boundary

MR-1 Medium Density Residential/
 Established
 MR-2 Medium Density Residential/
 Developing

HR-2 High Density Residential/
 Developing
 NB Neighborhood Business
 CB Community Business
 LI Light Industrial

HI Heavy Industrial
 MUR Mixed Use with
 Residential Emphasis
 MUB Mixed Use with
 Business Emphasis
 PUD Planned Unit Development

P Public
 A-1 Agricultural/
 Rural Residential
 A-2 Agricultural

Hebard, Cole and Goins Neighborhoods Plan

EXISTING ZONING

JACK NOBLITT & ASSOCIATES, P.C.
 EDWARDS Inc.

June 16, 1995

Figure 2-1

Four active school sites, one abandoned school site, a neighborhood recreational facility, an electrical substation, two parks and the Crow Creek Greenway are designated as P zone districts.

A large PUD Zone District (Planned Unit Development) occurs in a developing residential area south of I-80 west of Morrie Avenue and E. Fox Farm Road. A small parcel, which corresponds to the Old Johnson Junior High School site, also is designated PUD. This district allows for creative design of sites to accommodate a variety of land uses.

The land district that occurs in the study area is A-2 (Agriculture). This zone district occurs between Campstool Road and I-80 in the eastern portion of the study area. The only uses allowed (besides agriculture) are large-lot residential development (minimum 5 acres) and home occupations.

Existing Land Use

For the purposes of this study, general land use categories were mapped using 1994 aerial photography (see Figure 2.2, Existing Land Use). This map is not intended to be an exact representation of the land use on each parcel of land. Instead, it illustrates the general land use pattern.

As implied by the zoning districts discussed in the previous section, the Hebard, Cole and Goins neighborhoods are primarily residential areas, with some commercial and industrial development along major roads. The residential land uses are indicated with the letter "R". These areas correspond closely with the MR-1 Zone Districts discussed above. The majority of the development within the MR-1 district is traditional medium-density, single-family housing; however, a large multi-family housing development is located on West 5th Street between Snyder Avenue and Cribbon Avenue. Some vacant lands occur within existing residential areas, particularly south of Cole Elementary School and along on the west side of Deming Drive. Developing residential areas are evident south of I-80. One vacant block located at 5th Street and Evans Avenue is owned by the school district and was formerly used as a practice

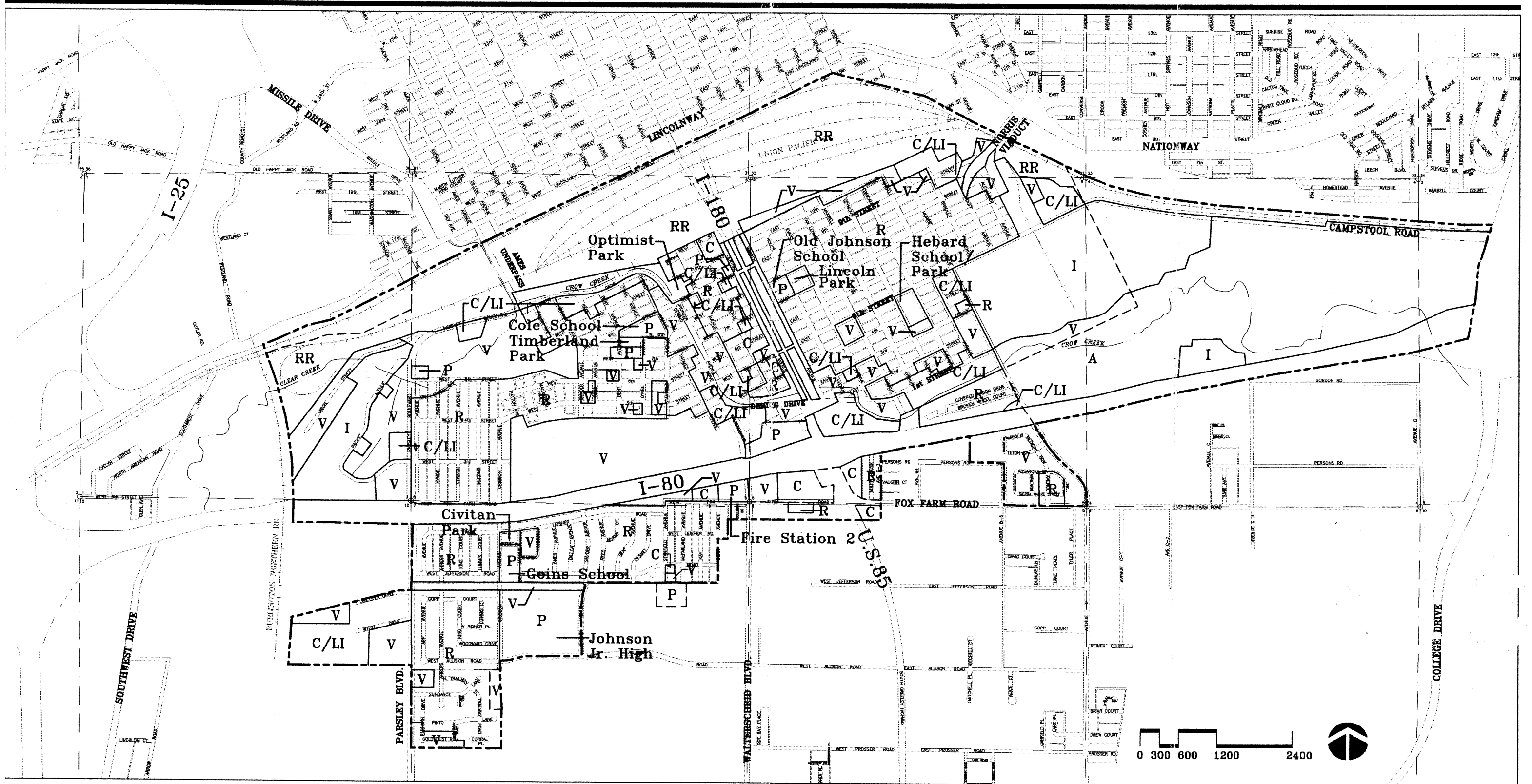
field associated with the old Johnson Junior High School. These are all potential development sites. The areas zoned MR-2 and HR-2 are also vacant; however, the land is an old landfill and its ability to be developed for residential use is unknown at this time.

Residential uses also occur in the area between Central Avenue and Deming Drive that is zoned MUB and MUR. These residences are interspersed with commercial, retail, office and light industrial uses.

Commercial uses are scattered throughout the study area, primarily along the major roadways. The two types of commercial development are Commercial/Office/Retail (C) and Commercial/Light Industrial (C/LI). These two categories were developed because they have different types of businesses within them and serve different functions in the community. The C land use designation corresponds most closely with the intent of the MUB and CB Zone Districts and contains businesses that provide goods and services for local residents and visitors to the area. The C/LI land use designation includes research and development facilities, light manufacturing facilities and wholesale, retail or service establishments with outdoor storage needs, including automotive repair shops and produce distribution centers.

The highest concentration of community-oriented businesses are located along Central Avenue and in the blocks immediately west. These businesses include a grocery store, hardware store, restaurants and a gas station. Notably lacking are opportunities for other types of retail shopping and professional or medical services. The amount of vacant land in the central commercial area is also quite apparent, and corresponds closely with the floodplain along Crow Creek as discussed later in this chapter. A comparison of the amount of land occupied by community-oriented businesses versus the amount zoned MUB and C quickly reveals that the potential for commercial development under the current zoning has not been realized.

The commercial/light industrial land uses (C/LI) are mostly in the areas zoned LI; however, a few isolated parcels within the MUB zone contain uses that are



--- Section Line
 --- City Limits
 --- Study Boundary

R Residential

C Commercial/Office/Retail

C/LI Commercial/Light Industrial

I Industrial

RR Railroad

Park

P Public/Quasi Public/Institutional

A Agricultural

V Vacant

Hebard, Cole and Goins Neighborhoods Plan

EXISTING LAND USE

JACK NOBLITT & ASSOCIATES, P.C.
 EDAA Inc.

June 16, 1995

Figure 2-2

considered C/LI. These uses have been identified as having some conflicts with nearby residences during the public involvement process. The conflicts have primarily been due to traffic, noise and fumes associated with delivery trucks parking, and to some degree visual quality and dust control.

Three areas in the study area are considered to be industrial uses (I). The heaviest industrial operation is the refinery located south of Campstool Road, and east of Morrie Avenue. This use has a great impact on adjacent residences as it produces odors that drift into the neighborhood, and has a risk of explosions in the immediate vicinity of the refinery. A small parcel of land south of the refinery is also industrial. The third industrial area is in the industrial park west of Parsley Boulevard, north of I-80. A large portion of the light industrial zoned land has not yet been developed.

The Union Pacific Railroad (UPRR) occupies a large area along the northern edge of the study area. The railroad yard is quite wide and creates a significant barrier to north/south travel between downtown Cheyenne and the study area. The railroad also has a significant negative impact on the residential uses in the Hebard neighborhood, including noise, visual quality and safety of neighborhood children.

Four small parks are located in the study area: Civitan Park, Timberland Park, Optimist Park and Lincoln Park. Civitan Park, at one acre in size, is located north of Goins Elementary School and contains small turf areas and some play equipment. Timberland Park, at two acres in size, is located between the Neighborhood Recreation Facility and Cole Elementary School and contains picnic tables and play equipment. Optimist Park, at four acres in size, is located at 5th Street and Deming Drive and contains picnic facilities and a large play structure. Lincoln Park, at two acres in size, is located on Evans Avenue and 7th Street and contains a small swimming pool, basketball courts, play equipment, picnic tables and small turf areas. Together they total approximately 9 acres. The parks provide the immediate neighborhoods with a place to enjoy the outdoors and a place for young children to play; however, both

neighborhoods north of I-80 are lacking large turf areas where local youth and adults can practice field sports such as soccer, baseball and softball. Covered community gathering and large group picnic areas are also lacking. It appears as though additional parkland would be needed to accommodate these uses.

The Crow Creek Greenway is also considered a park. The City recently constructed a concrete trail from Ames Underpass to Central Avenue within the Greenway. The trail is a segment of a larger regional trail system that will link this area with other portions of the City. The Crow Creek Greenway is a wonderful amenity to the residents, as well as an asset to nearby businesses (existing or future) that could capitalize on the visibility by trail users from other parts of the City. The area could also be enhanced with site furnishings, picnic areas and additional open space or turf areas to make it even more of a multi-purpose recreation area.

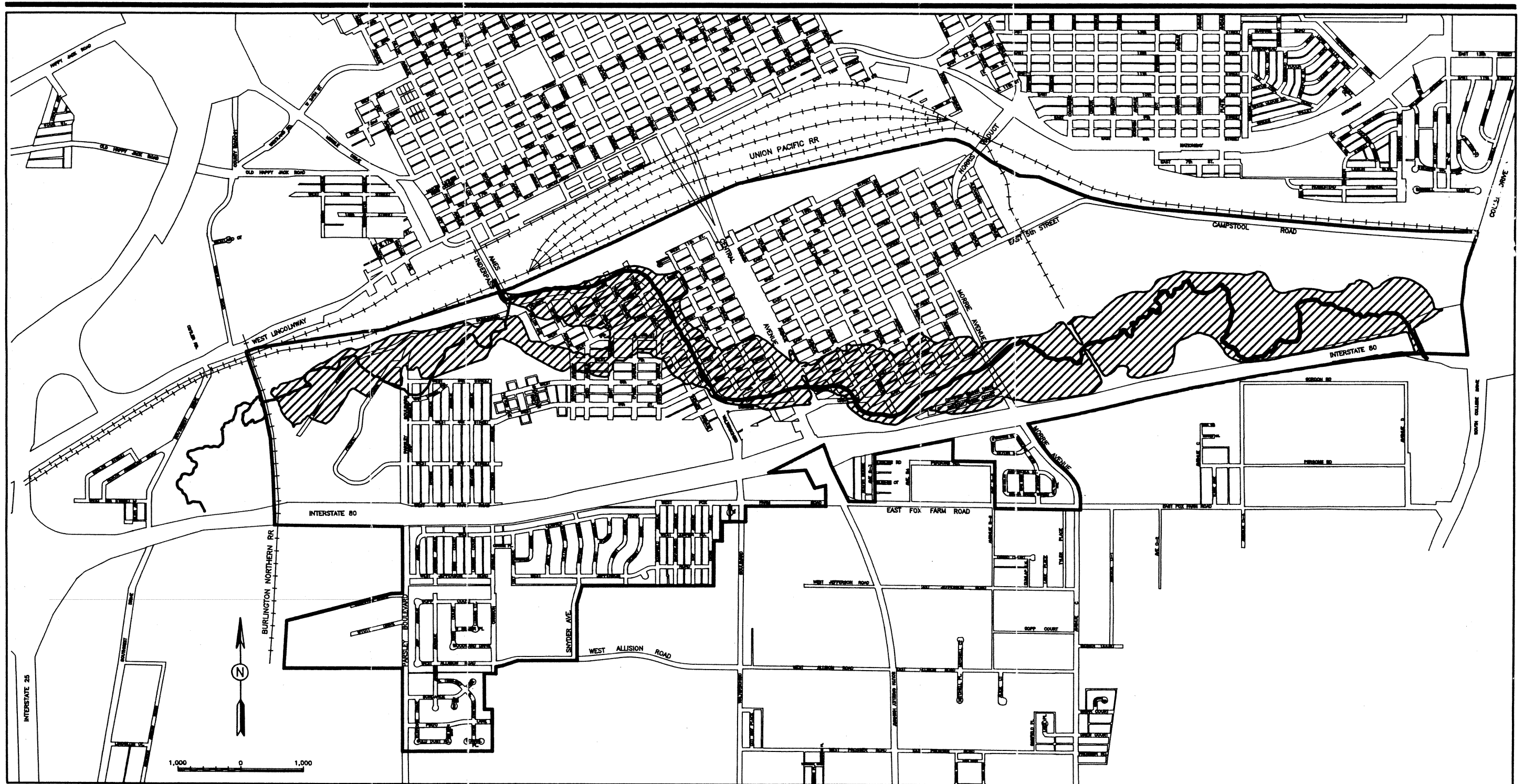
Many different public uses (P) occur in the study area. These include three elementary schools (Goins, Cole and Hebard), Johnson Junior High School, the Neighborhood Recreation Facility, a Laramie County Health Department Building, a fire station and an animal shelter, among others.

The remainder of the land in the eastern portion of the study area is used for agriculture (A).

Drainage

The flood plains of Clear Creek and Crow Creek within the Study Area are indicated in Figure 2-3. Clear Creek enters the Study Area from the lower left edge of the map, and Crow Creek enters the Study Area at the Ames Underpass. The Underpass creates a significant constriction of flood flows on Crow Creek, however the flood plain north of the UPRR is not indicated on the map.

Clear Creek is a tributary of Crow Creek, and currently enters Crow Creek through the 72" pipe which crosses Parsley Blvd. and Ames Avenue at the south end of the Ames Underpass. The historic channel of Clear Creek was easterly along what is now West 7th and 8th Streets, and during high flows when the capacity of the 72" pipe is exceeded, the water will use the historic channel.



Hebard, Cole and Goins Neighborhoods Plan CROW CREEK & CLEAR CREEK FLOOD PLAINS

Jack Noblitt & Associates, P.C.
EDAW, Inc.

September 1995

Figure 2-3

It can be noted that extensive areas of the Study Area are designated as areas of special flood hazard, and the City's Floodplain Management Regulations place restrictions on development in these areas. To assist the reader who desires additional information a section on "Floodplain Management Options" is included as Appendix C to this Report.

The flood plain shown in Figure 2-3 delineates the 100 year flood plain which was developed in the Cheyenne Drainage Master Plan, in 1988. The Master Plan reviewed various options for mitigating the flood plain for both Clear and Crow Creeks, and these options, along with recommendations from this Study, are discussed in the next Chapter of this Report.

The storm sewers in the Study Area are indicated in Figure 2-4. It can be noted the area has good coverage from storm sewers, which assist in getting the water off of the streets during and after storms. Most of the storm sewers drain into Crow Creek, except for the ones at the west end of the Study Area which drain into Clear Creek.

One of the newest storm sewers in the Study Area is located along the south side of East 5th Street and the east side of Morrie Avenue. This 54" sewer was connected to the 48" line on Alexander Avenue which serves a large area north of the Norris Viaduct. This new line bypassed the Refinery and reduced the potential for infiltration of petroleum-related products. The 48" line across the Refinery continues in service and is maintained by the Refinery.

Transportation

The street system on the north side of the Study Area has only four crossings of the Union Pacific Railroad -- I-180 Viaducts, Norris Viaduct, Ames Underpass, and a grade crossing at Southwest Drive. There are also limited crossings of I-80 -- South Greeley Highway (I-180), Walterscheid, Parsley Blvd., Morrie Avenue, and at Southwest Drive. The limited number of crossings of these barriers causes concentrations of traffic at the crossing points.

Two locations which are related to these traffic concentrations are the subject of Appendices to this Report --

Realignment of the Norris Viaduct -- Appendix A

Deming Drive Design and Right of Way --
Appendix B

The Cheyenne Area Transportation Planning Process (ChATPP) prepared a Cheyenne Area Master Transportation Plan, in 1994. The Plan estimates the future travel demand in the urbanized area of Cheyenne, and prioritizes the projects proposed for construction during the next twenty years, as follows:

Bicycle/Pedestrian Projects

Priority 1 -- On-Street Bicycle System throughout community

Priority 2 -- Greenway (Section C-12), I-180 east to 1st Street

Priority 3 -- Greenway (C-13), Morrie Avenue west along 1st Street

City & County Projects

High Priority

Reconstruction of Deming Drive & 1st Street
between Walterscheid Blvd., & Morrie

Reconstruction of Norris Viaduct -- (connect to
9th St.)

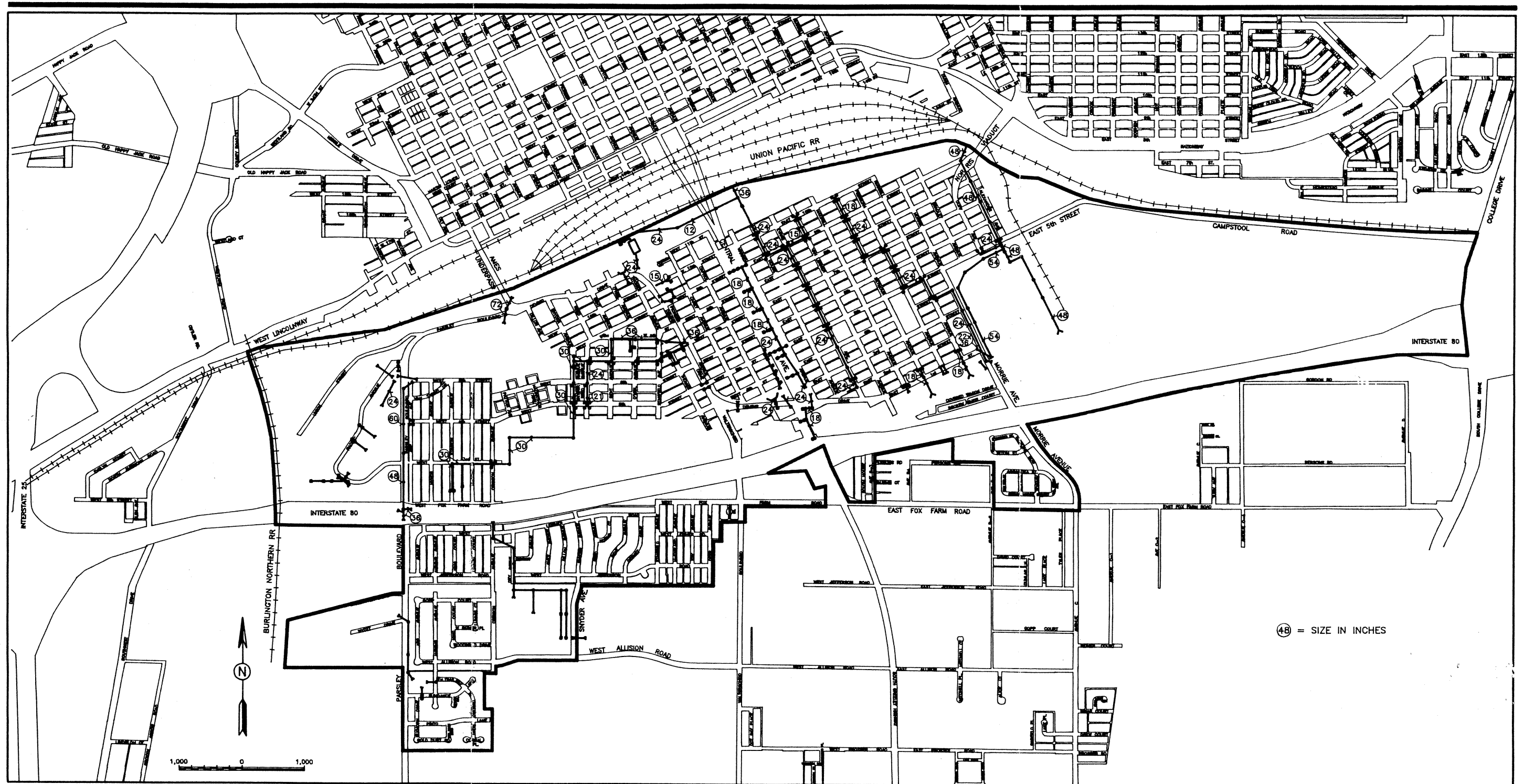
Upgrade 9th St. -- Morrie to Deming

Upgrade Morrie between 1st and 9th

Medium Priority

Reconstruct 5th St. intersections at Morrie &
Warren

Reconstruction of Deming and Walterscheid,
Ames to West Fox Farm



Street Condition

Figure 2-5 indicates the condition of the streets in the Study Area. The information was obtained from the ChATPP Pavement Management Engineer who has prepared an inventory of the condition of the streets in the City. Each segment of street is given an OCN rating beginning at zero and going up to 25. Streets are considered to be in excellent condition if the rating is from 0 to 5 (there are 6.1 miles with this rating in the Study Area), good condition if the rating is from 6 to 10 (13.2 miles), fair condition if the rating is from 11 to 13 (16.1 miles), and in poor condition if the rating is over 14 (0.6 miles).

An inventory of the study area indicated that there are approximately 2765 lineal feet of unpaved streets in the study area. In addition there are several miles of streets which do not have curb and gutter.

Existing and Future Road Classification

The existing functional classification of the roads in the Study Area, as shown in the Cheyenne Area Master Transportation Plan, is indicated in Figure 2-6.

Functional classification indicates the hierarchy of the streets in the system. Interstate routes are at the high end of the hierarchy and are intended to carry only through traffic between major cities. Arterials are the next level of streets and are intended to carry primarily through traffic. Collectors move traffic between the local streets and the arterial system. The lowest level of streets in the hierarchy are the local streets which primarily serve the abutting land uses. The local street system includes those streets in the Study Area which are not indicated on Figure 2-6 as Interstate, Minor Arterial, or Collector Streets.

Traffic Volumes in the Study Area

An indication of the traffic volumes on the streets in the Study Area is shown in Figure 2-7. These volumes were obtained from the Cheyenne Traffic Division and the ChATPP.

The Wyoming Department of Transportation maintains permanent traffic counting stations at each of the three major grade separations (Norris Viaduct, I-180 Overpasses, Ames Underpass) of the Union Pacific

Railroad tracks. These counting stations mechanically count the vehicles continuously, and the data is summarized to indicate the average daily traffic during each month of the year. A graph showing these traffic volumes for the three locations is included as Figure 2-8.

Pipelines

Information was requested and received from both Conoco and from Cheyenne Light Fuel & Power regarding pipelines in the area. The location of the major lines are indicated in Figure 2-9.

Conoco has both crude oil and petroleum products lines within the study area.

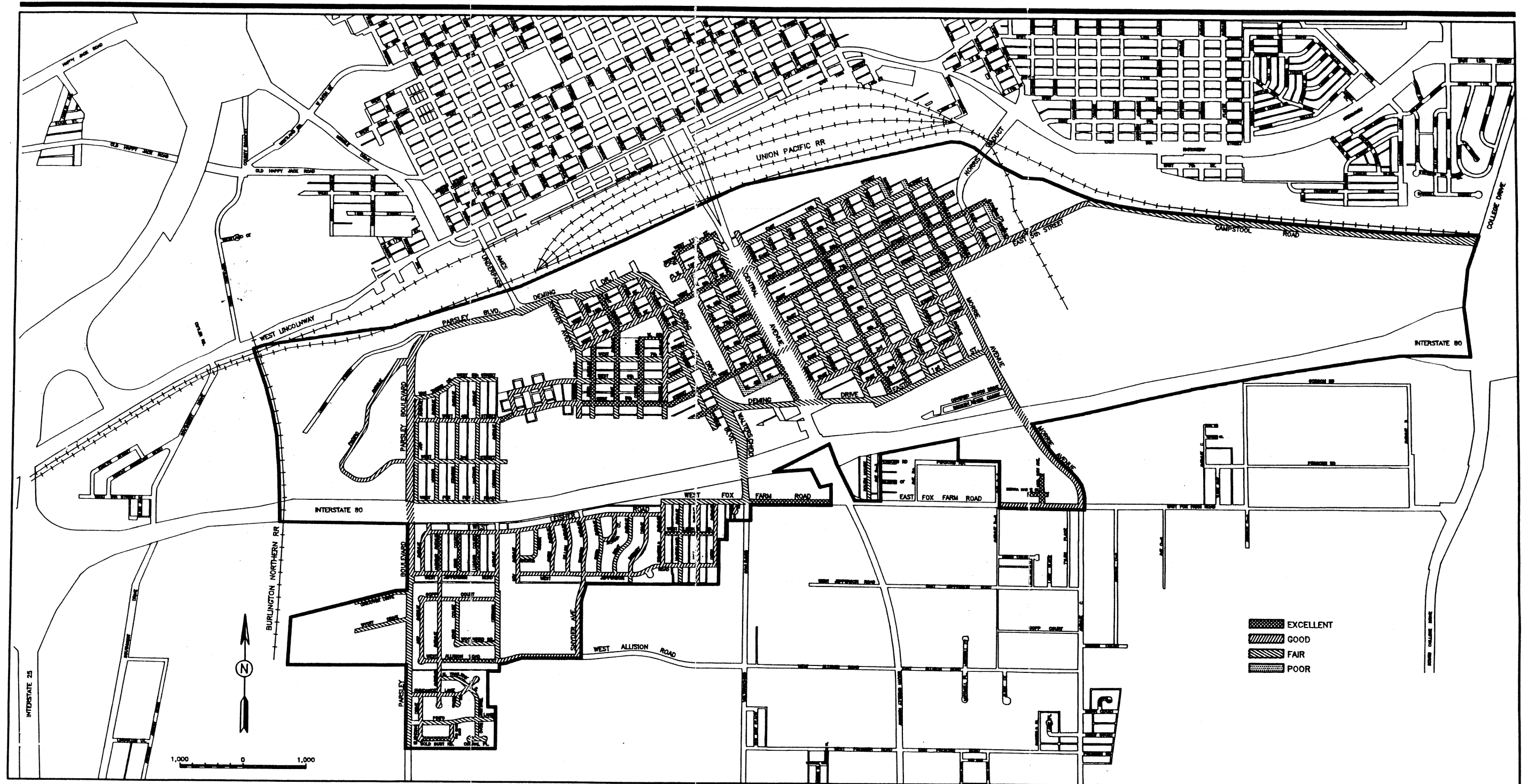
The lines owned by Cheyenne Light Fuel & Power carry natural gas, and only the lines which are 4" in diameter or larger are indicated in Figure 2-9.

Sanitary Sewer

The location and size of the sanitary sewers in the Study Area is shown on Figure 2-10. The approximate size is also indicated by the circled number adjacent to the lines.

The Cheyenne Board of Public Utilities has prepared an analysis of the sanitary sewer system which computes the capacity of each segment of each line, and then estimates the flow data for the line including sanitary flow, inflow and infiltration. The analysis includes a utilization factor for each segment which is the estimated total flow divided by the capacity. This information can be used to determine those segments of the system needing improvement, or to estimate the impact of new land uses on the system. Figure 2-11 indicates those segments of the system which have utilization factors between .6 and 1 and exceeding 1.

The master plan (Wastewater Treatment and Collections Systems Master Plan, Draft Report, Back & Veatch, January, 1995) recommends the improvements of the sewer trunk throughout virtually all of the Study Area from the Union Pacific Railroad tracks, easterly and southerly to east of College Drive. It also recommends a parallel sewer be constructed to relieve the sanitary sewer in the alley between McComb and Cribbon

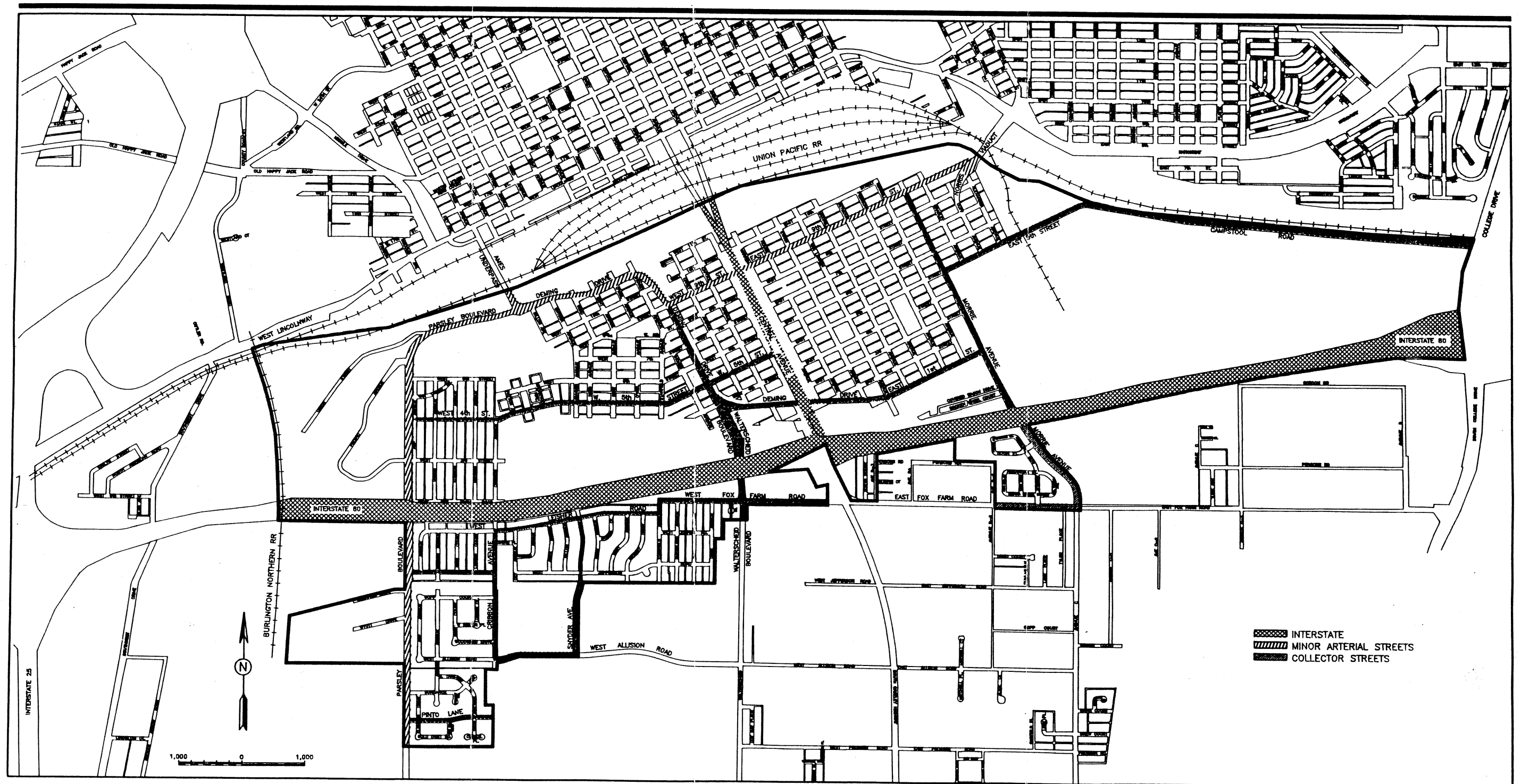


Hebard, Cole and Goins Neighborhoods Plan STREET CONDITIONS

Jack Noblitt & Associates, P.C.
EDAW, Inc.

September 1995

Figure 2-5

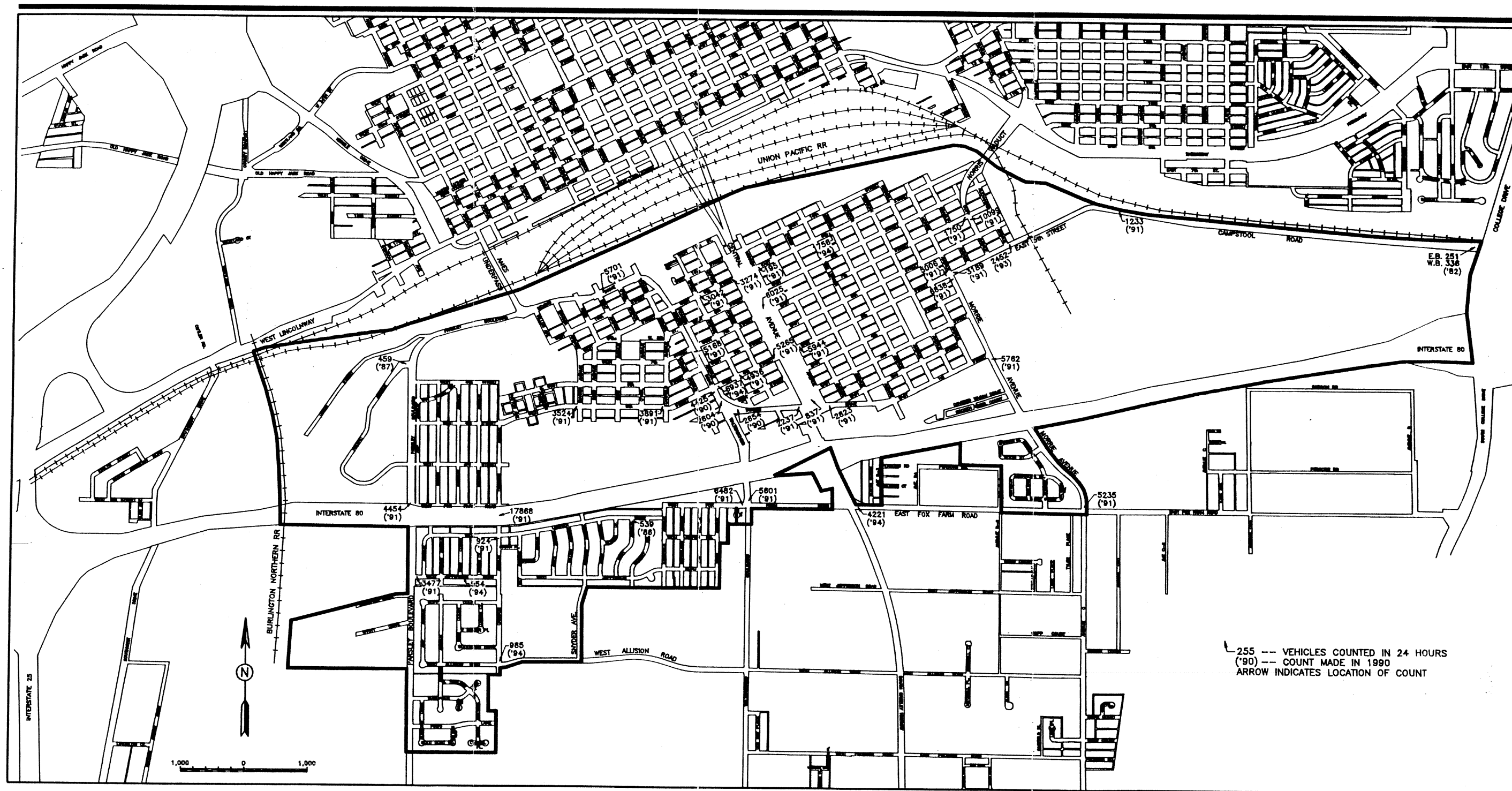


Hebard, Cole and Goins Neighborhoods Plan EXISTING & FUTURE ROAD CLASSIFICATION

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September 1985

Figure 2-6



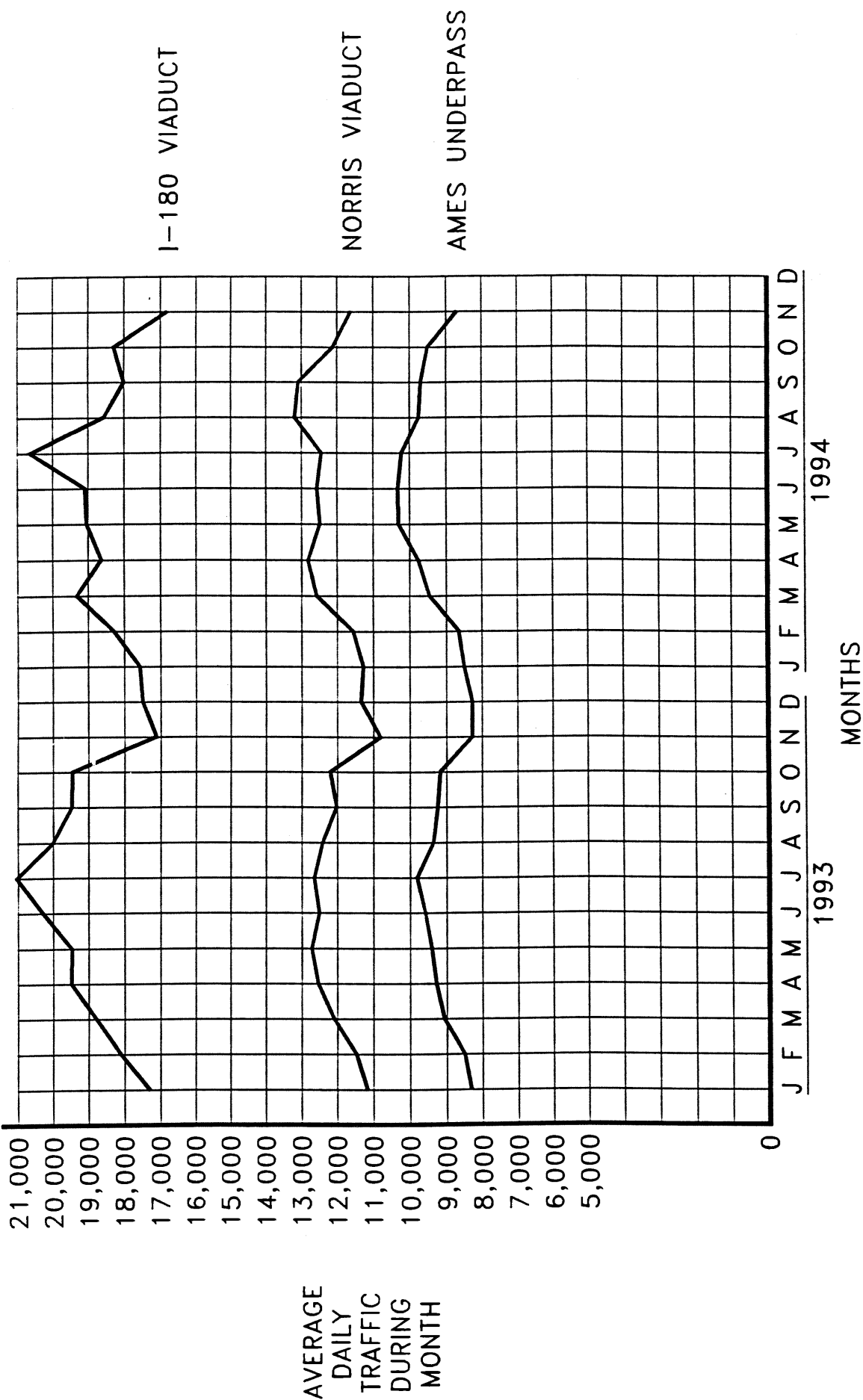
Hebard, Cole and Goins Neighborhoods Plan TRAFFIC VOLUMES IN STUDY AREA

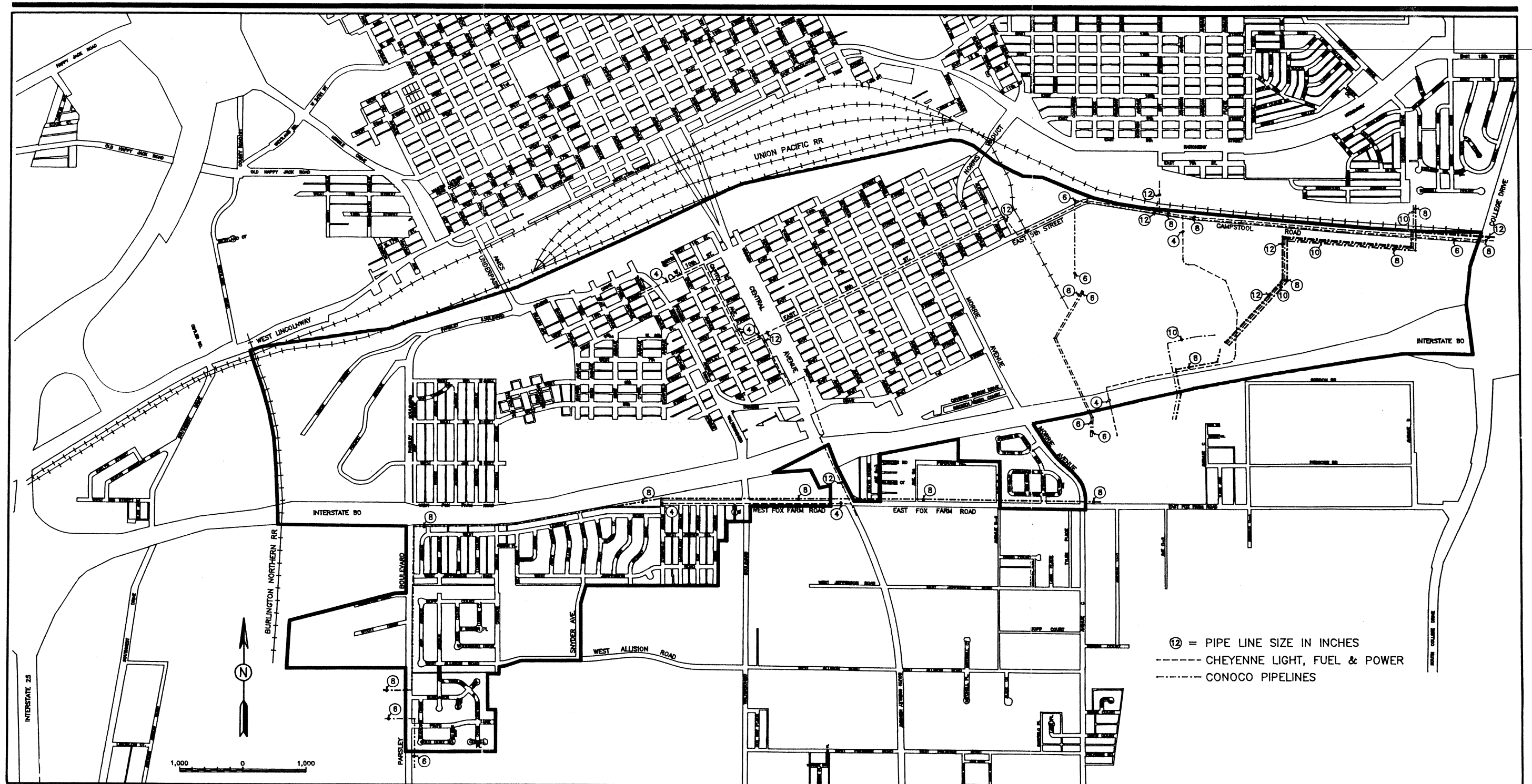
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September 1995

Figure 2-7

Figure 2-8 TRAFFIC VOLUMES BY MONTH
1993 & 1994



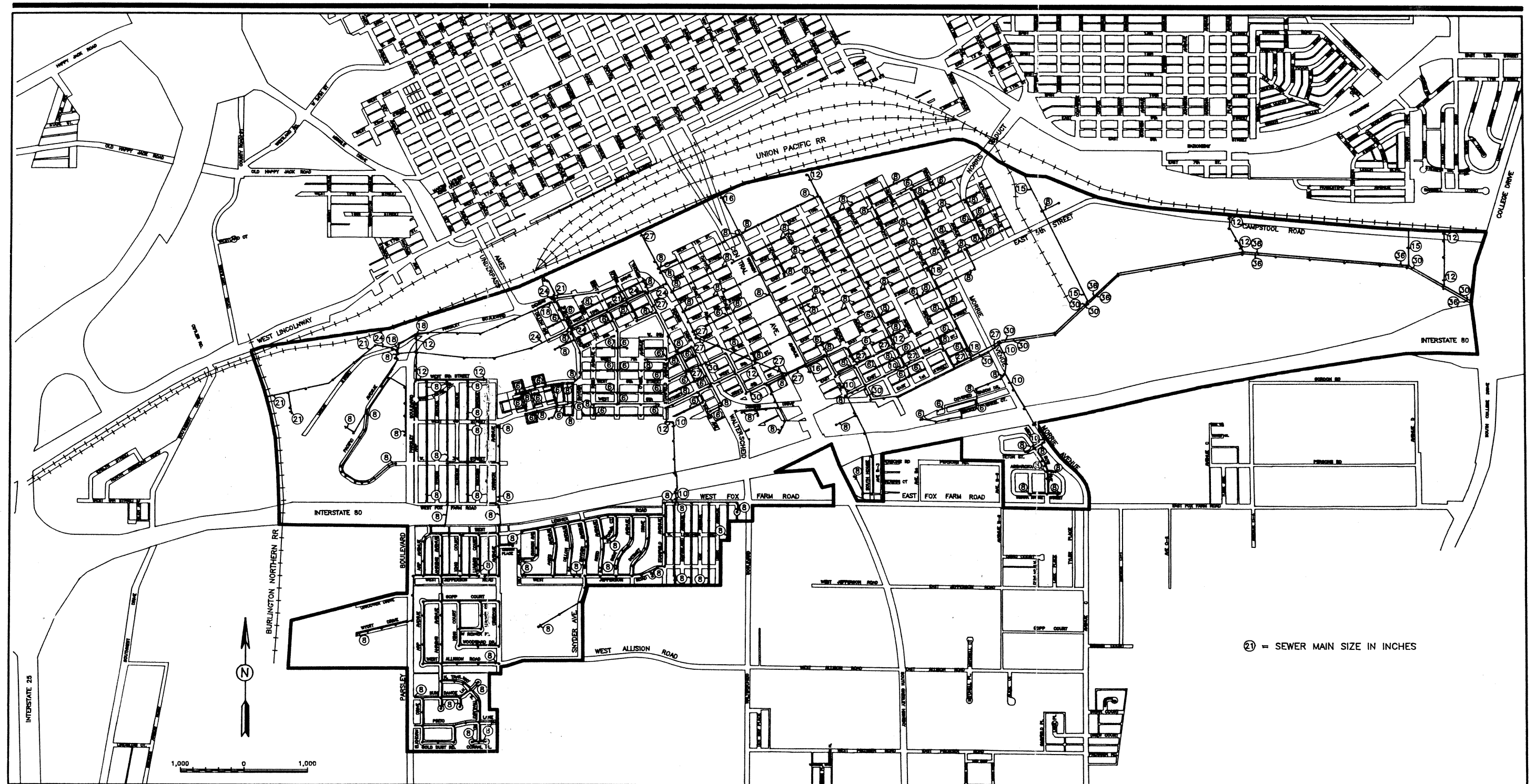


Hebard, Cole and Goins Neighborhoods Plan PIPE LINES

Jack Noblitt & Associates, P.C.
 EDAW, Inc.

September 1995

Figure 2-9



Hebard, Cole and Goins Neighborhoods Plan

SANITARY SEWERS

Jack Noblitt & Associates, P.C.
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September 1995

Figure 2-10

Avenues, between 3rd and 5th Streets. The estimated cost of this proposed improvement is indicated to be \$136,300. The cost estimates are based on 1994 prices, increased by 20% for contingencies, increased by an additional 15% for engineering, legal and administrative costs, and do not include right-of-way, or rock excavation.

The Master Plan indicates that one of the two parallel Crow Creek trunk sewers is out of service between the refinery and the Crow Creek Wastewater Treatment Plant. Page 4-15 states "Due to infiltration of petrochemical-contaminated groundwater, this segment has been blocked off and taken out of service." The Master Plan, in Table 12-3, shows an expenditure flow projection for the Crow Creek Interceptor project of \$1,500,000 in FY 1996, \$530,000 in FY 1997.

The Master Plan also makes reference to a study by States West Water Resources Corporation entitled Rehabilitation of Crow Creek and Other Sewer Mains, dated 1994. That Study recommends routing and replacing both the Crow Creek Interceptor Sewer and the Rollins Sewer at a cost of approximately \$2.03 million. The Rollins Sewer, near the refinery, is located underneath the Wyoming Liquor Commission building, limiting BPU access, and is also beneath tank containment ponds (refinery) that create additional contamination risk to the Board of Public Utilities.

Water Supply System

A Cheyenne Water Supply Master Plan, Level 1, was prepared in 1994 by Black & Veatch. The Study deals primarily with the major lines and recommends new lines through the Study Area from the Ames Underpass to I-80 and Walterscheid; and from the Ames Underpass southerly along Parsley Blvd.

The locations of existing water mains, and the size of each main in the Study Area, are shown in Figure 2-12. Mains below 6" are recommended for replacement since they are not able to deliver the fire flows and pressures needed in commercial and residential areas as discussed in the section below on Fire Hydrant Pressures. Six inch mains are considered satisfactory only in limited applications.

Water Main Type and Age

Figure 2-13 indicates the type (material) of the water mains in the Study Area, and the year of installation of the mains. The unlined cast iron pipe (67,370 lineal feet) should be replaced since it tends to corrode thereby lowering the quality of the drinking water.

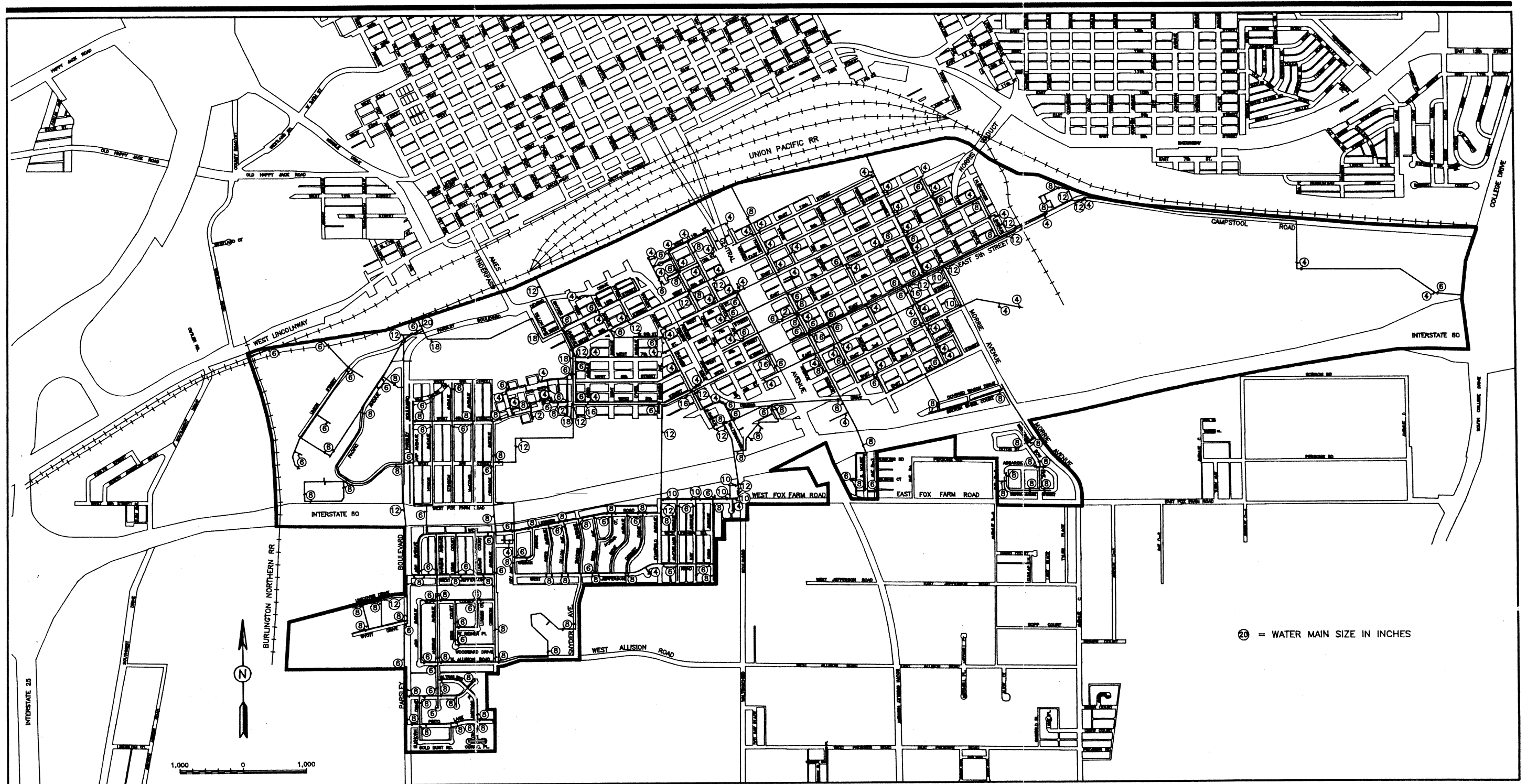
Fire Hydrant Pressures

The static and residual pressures, along with the flows, at several of the fire hydrants in the area are indicated in Figure 2-14. The desired minimum static pressure is 85 psi, and most of the Study Area has adequate static pressure.

The desired minimum residual pressure is 20, when the hydrant is flowing at 1000 gpm in residential areas, and 1500 gpm in commercial areas. The above flows are the desired minimum flows in residential and commercial areas.

It can be noted that both the residual pressures and the flows are below the desired levels in some areas of the Study Area.

Figure 2-14 shows example locations, only.

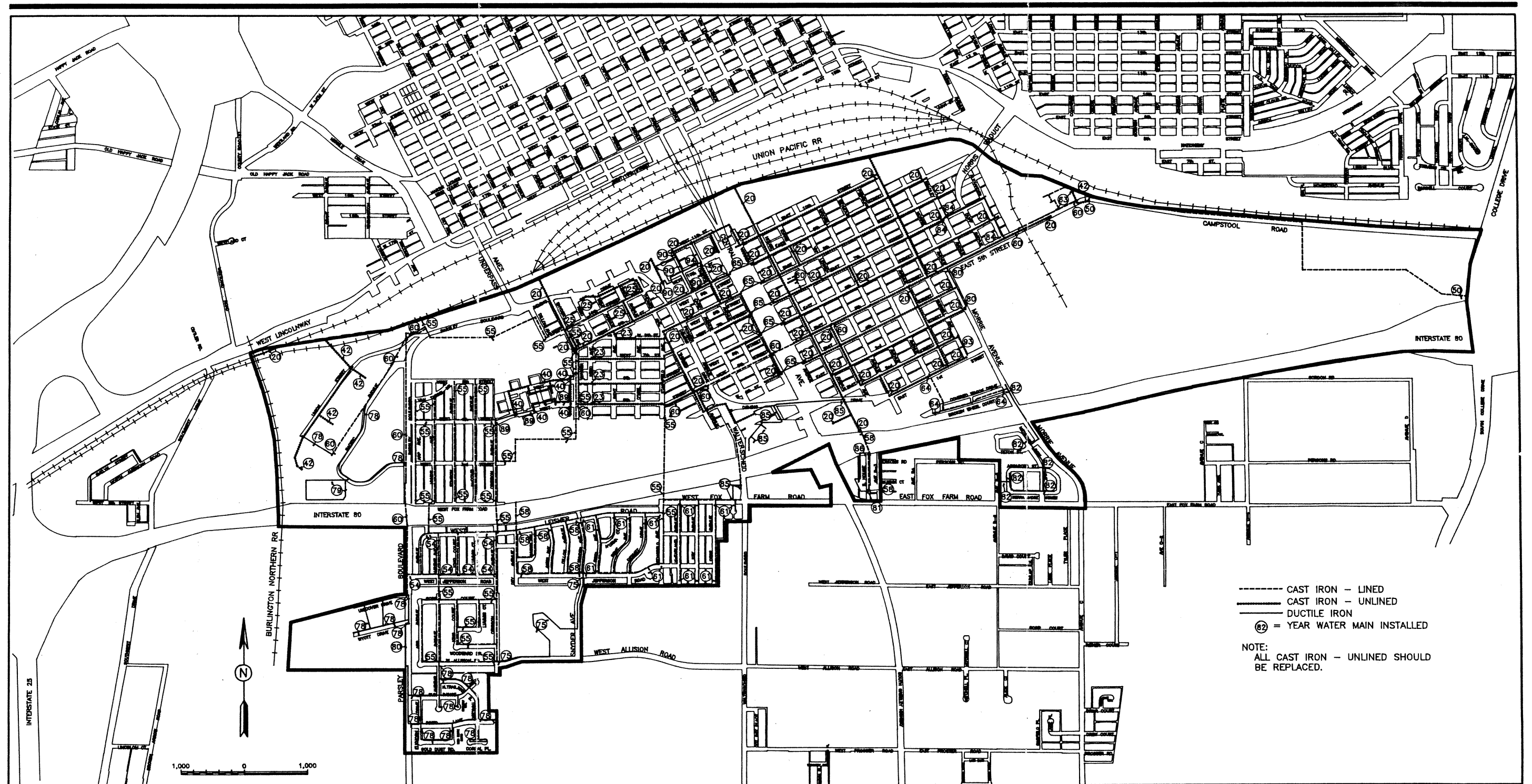


Hebard, Cole and Goins Neighborhoods Plan WATER MAIN SIZES

Jack Noblitt & Associates, P.C.
EDAW, Inc.

September 1995

Figure 2-12

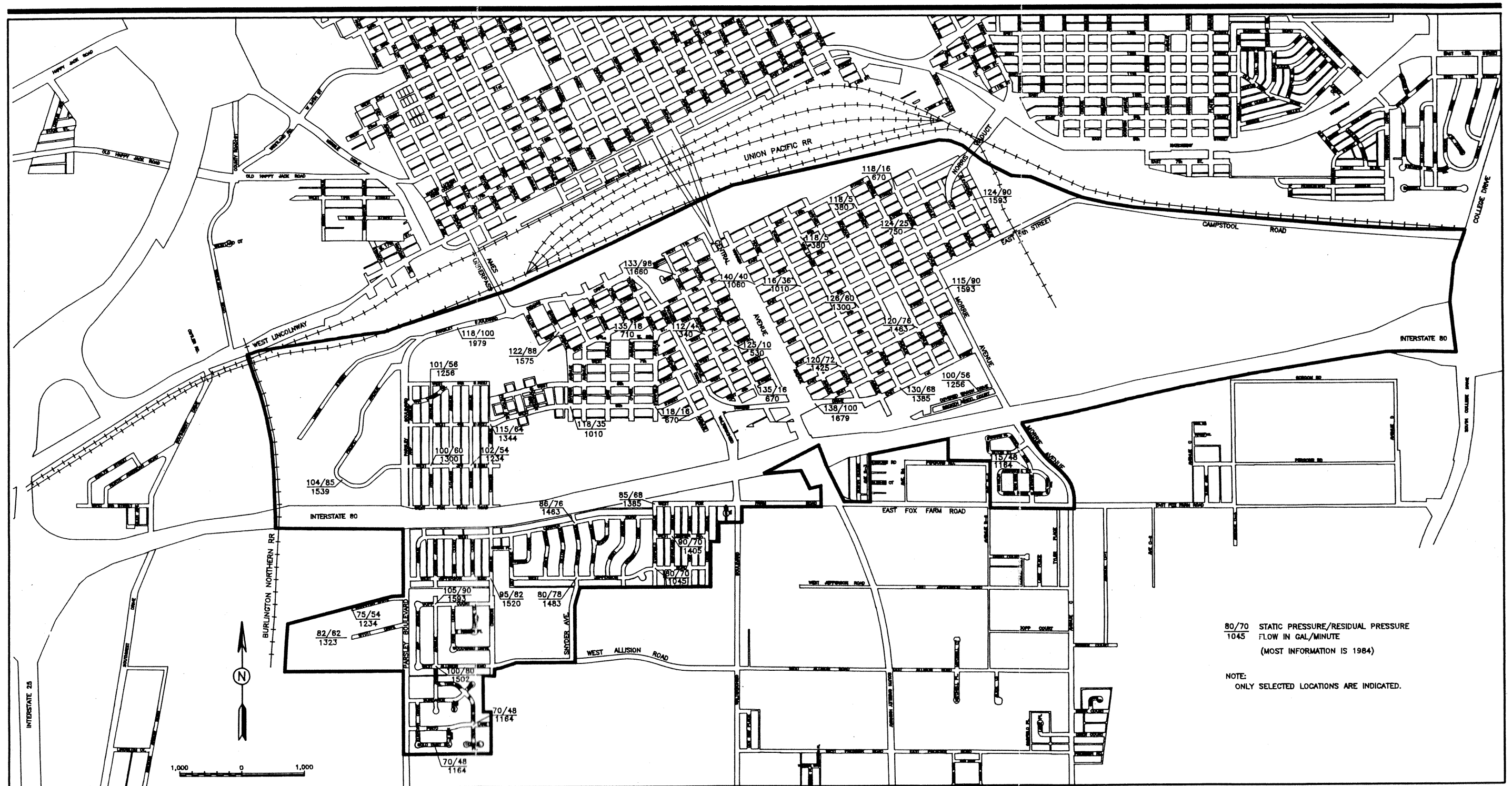


Hebard, Cole and Goins Neighborhoods Plan WATER MAINS TYPE & AGE

Jack Noblitt & Associates, P.C.
 EDAA, Inc.

September 1995

Figure 2-13

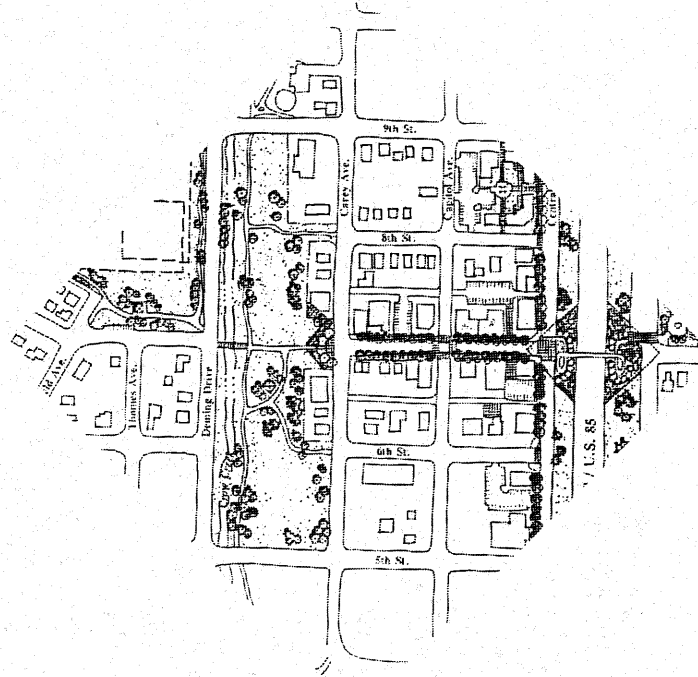


Hebard, Cole and Goins Neighborhoods Plan FIRE HYDRANT PRESSURES

Jack Noblitt & Associates, P.C.
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September 1995

Figure 2-14



Chapter III

The Vision for the Community

CHAPTER III -- THE VISION FOR THE COMMUNITY

Introduction

This chapter contains the vision statement, goals and objectives that were developed as part of the planning process and documents the process by which they were developed. To develop the vision, and these goals and objectives, the consulting team worked with the steering committee to identify existing assets and opportunities in the community, elements that were needed or lacking, and specific items or areas of concern. The assets and opportunities in the community should be preserved and enhanced; elements that are needed or lacking should be targeted, and pursued for inclusion in the study area; and community concerns should be addressed in this plan.

Existing Assets and Opportunities

The following is a list of perceived assets and opportunities for improvements within the study area.

- Vacant land is available for development. Additional land could be available if the Crow Creek floodplain width were reduced.
- Many people are long-term residents and have a genuine concern for the community.
- There are historic resources that could be capitalized upon (e.g. Native Americans' use of Crow Creek, the area was platted as part of the original city).
- The cultural diversity of the residents could be celebrated through design, enriching the landscape of the community.
- Excellent visibility and access from I-80 and I-180.
- The I-180 corridor is a major gateway to the City of Cheyenne.
- Many public facilities are available. Schools are conveniently located and excellent academically. Laramie County Community College is nearby.

Needs

- The Crow Creek Greenway is a wonderful recreational and aesthetic asset.
- Retail Shopping
- Doctors, dentists
- Professional services
- Parkland and recreational opportunities, specifically sport fields, basketball courts and other facilities for youth of all ages
- Paved roads with curb, gutter and sidewalks
- Employment opportunities

Concerns

- Image and visual quality of the community, especially the refinery, the railroad and some residential and commercial areas.
- Reuse of the Old Johnson Junior High School site; it must be compatible with neighborhood.
- Safety on 5th Street due to high traffic volumes.
- Nuisance enforcement, particularly regarding absentee landlords.
- The area should have a balance of housing types, not a disproportionate share of housing geared towards lower income families.
- Keeping older youth on the right track and out of trouble.
- Storm drainage/flooding problems, especially along Crow Creek and adjacent to the U.P. Railroad yard.
- Safety of crossing I-180.

Vision, Goals and Objectives

The following is the vision for the Hebard, Cole and Goins Neighborhoods, followed by specific goals and objectives needed to move towards realization of this vision. Specific improvement projects (Action Items) that are associated with the objectives are identified in Chapter IV - Action Plan.

Vision

To be an attractive, affordable and safe neighborhood with easy access to schools, shopping, employment, medical, professional and governmental services and leisure time activities

Goal 1: Attract retail businesses, professional services and employers to the neighborhood to meet the needs of local residents

Goal 2: Enhance the area as the southern Gateway to the City of Cheyenne

Goal 3: Protect and enhance the historic character of the central part of the study area

Objectives

- 1.1 Enhance central commercial area with pedestrian amenities.
- 1.2 Provide assurances that area will become/remains attractive.
- 1.3 Redevelop portions as a mixed use "Town Center".
- 1.4 Ensure that roads and utilities are adequate to service existing and new development.
- 1.5 Investigate the potential of establishing the core commercial area as an enterprise zone geared towards commercial/retail development.

Objective:

- 2.1 Use pedestrian overpass and surrounding area on I-180 as focal point and link between east and west sides of neighborhood.

Objective:

- 3.1 Develop general design guidelines for new construction or renovations in an area bounded by 1st Street, 10th Street, Deming Drive and Alexander Avenue.

Goal 4: Enhance the quality of life in existing residential neighborhoods (e.g., pedestrian/bike access, recreational facilities, nuisance enforcement, land use conflicts, drainage, etc.)

Objectives:

- 4.1 Make drainage improvements adjacent to railroad.
- 4.2 Discourage traffic through neighborhoods (e.g., 5th Street, commercial area edge).
- 4.3 Provide parks and areas for soccer, baseball and basketball in or near residential areas.
- 4.4 Provide curb, gutter and sidewalks on all streets.
- 4.5 Buffer residences from the railroad and refinery.
- 4.6 Provide opportunities for walking and other unprogrammed recreation.
- 4.7 Seek partnerships with local businesses to sponsor youth organizations and activities.
- 4.8 Make existing public facilities more accessible for youth during summers and after school.
- 4.9 Seek tighter regulations regarding the responsibilities of absentee landlords.
- 4.10 Institute an annual award for "Most Improved Property."

Goal 5: Respect and celebrate the cultural university of the residents

Objective:

- 5.1 Create places where multi-cultural activities can occur and cultural heritage is expressed in the design/architecture of the place.

Goal 6: Attract employers to the available industrial zoned properties

Objective

- 6.1 Develop a marketing plan that identifies economic incentives.

Goal 7: Reduce conflicts between land uses and the floodplain

Objective:

- 7.1 Implement flood control upstream on Clear Creek and Crow Creek to reduce floodplain width.

Goal 8: Encourage infill development

Objective:

- 8.1 Identify vacant parcels and assess their viability for development.

Land Use Plan

Figure 3.1, Land Use Plan, illustrates the land uses that are desirable in these neighborhoods. The plan is somewhat similar to the land uses and zoning that currently exist, however, there are some areas that are different. Table 3.1 shows the relative land area occupied by each of the uses.

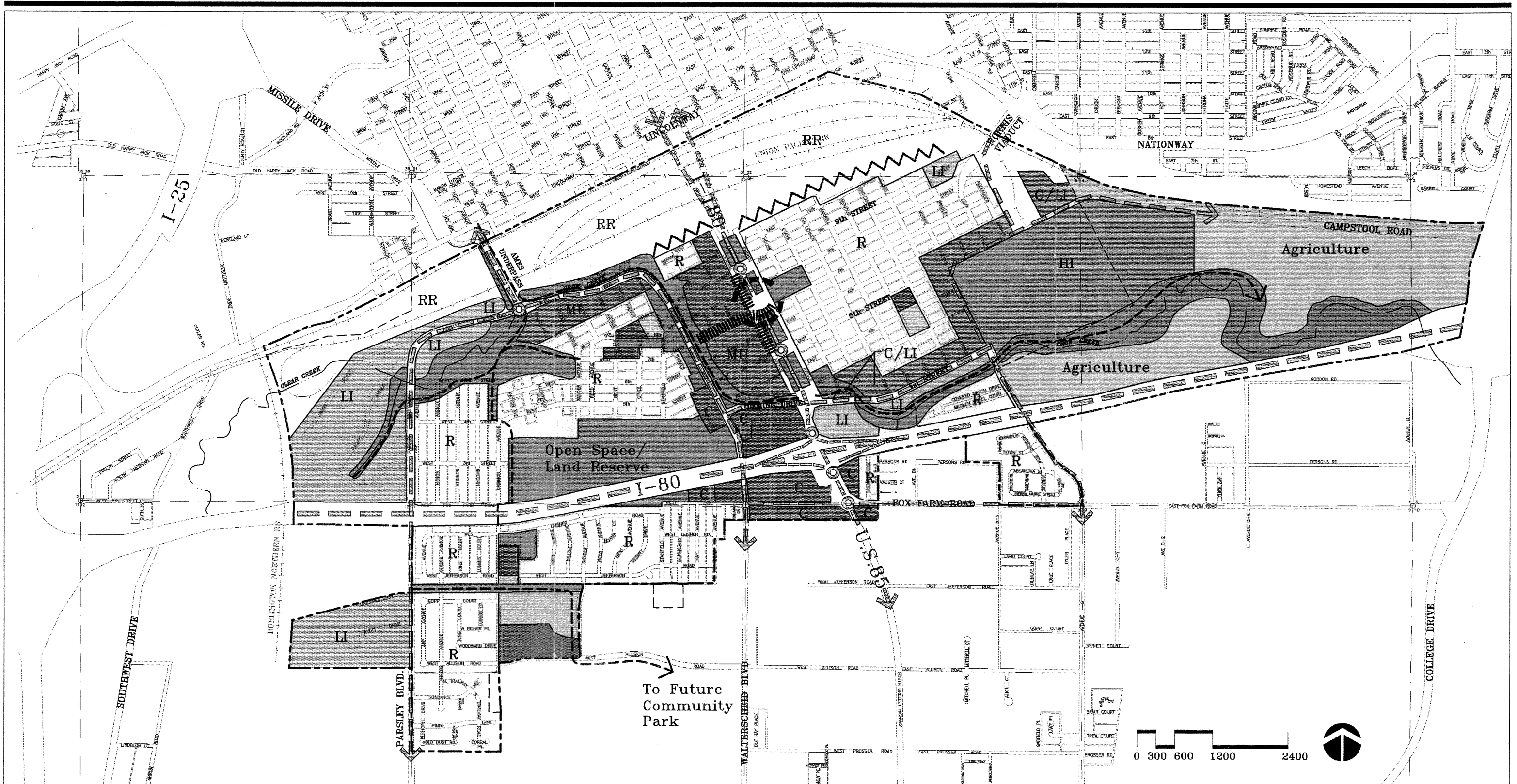
**Table 3.1
Land Use Plan Summary**

Land Use	Acres	% of Total
Mixed Use - MU	65	3.4
Residential - R	590	31.2
Commercial - C	36	1.9
Commercial / Light Industrial - C/LI	48	2.5
Light Industrial - LI	150	7.9
Heavy Industrial - HI	134	7.1
Railroad - RR	350	18.5
Institutional / Educational	38	2.0
School Park	21	1.1
Park / Open Space	205	10.8
Open Space / Land Reserve	78	4.1
Roadways	180	9.5
Total	1893	100%

The center of the planning area west of I-180 is designated as Mixed Use (MU), a mix of retail, office and residential. This area is anticipated to be similar to the CB and MUB Zone Districts which cover a majority of the land within it, however residential uses should be thoroughly integrated into many parcels that are redeveloped. These residential units may most appropriately be located in multi-family or townhome developments or located on the upper floors of multi-story buildings. This MU area should become a commercial core for the neighborhoods and contain many of the types of services that were identified as lacking (e.g. shopping, medical and professional offices). The size of the commercial core (MU) area should be expanded to the west, occupying currently vacant lands that will be developable if upstream flood control measures are implemented. A pedestrian zone should be established along the frontage of Central Avenue and along 7th Street. This will enhance the shopping districts and connect the Hebard neighborhood to the shopping district, Crow Creek Greenway, the Neighborhood Recreational Facility and the Cole neighborhood via the walkways and existing pedestrian bridge over I-180. This concept is shown in more detail on Figure 3.2, Core Area Conceptual Plan. Figure 3.2 is described in more detail after this section.

A small area of MU is also shown along Deming Drive. This area will serve as a buffer between Deming and the Cole neighborhood. This area is envisioned to contain a mixture of uses such as professional services, offices, repair shops and multi-family housing.

The residential areas shown are located where there is existing residential development. It is anticipated that these areas will infill over time, potentially including some multi-family housing developments (apartments, duplexes, townhomes, etc.) Multi-family housing may be considered compatible with the existing single-family residences if it meets the intent of the criteria located in Appendix D. The city planning process requires that all multi-family development, duplex or townhome proposals go through either an administrative or public approval process depending upon the type and extent of the proposal, and will be subject to the final decision of the City Development Director or the Board of Adjustments.



--- Section Line
 --- City Limits
 --- Study Boundary

MU Mixed Use (Retail, Office, Residential)
R Residential
C Commercial
C/LI Commercial/Light Industrial
LI Light Industrial
HI Heavy Industrial
RR Railroad

Istitutional/Educational
School Park
Park/Open Space
Highway or Arterial Roadway

Buffer/Wall
Visual Gateway
Multi-purpose Paved Trail
Pedestrian Zone

Hebard, Cole and Goins Neighborhoods Plan

LAND USE PLAN

JACK NOBLITT & ASSOCIATES, P.C.
 EDAA Inc.

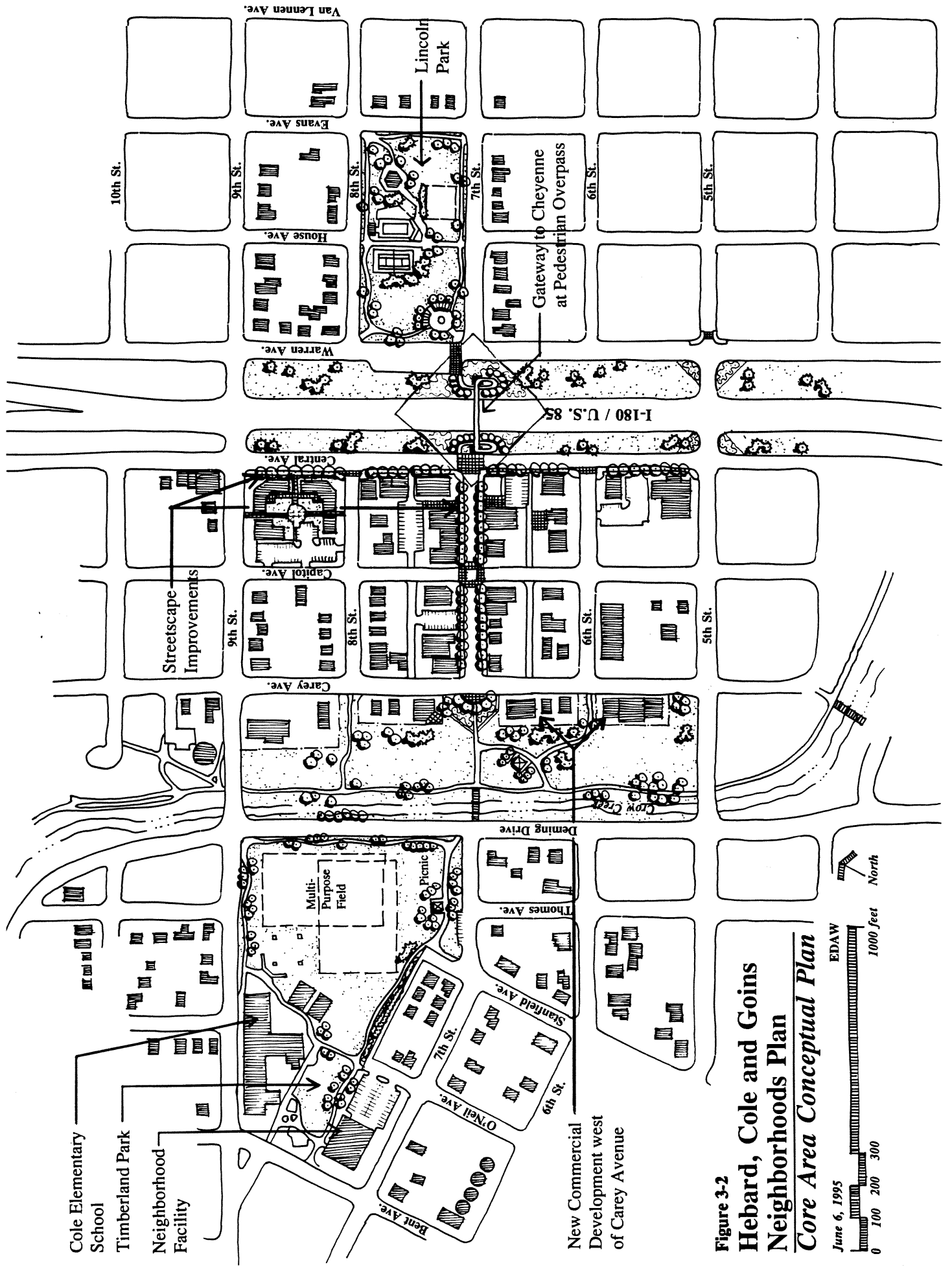


Figure 3-2
Hebard, Cole and Goins
Neighborhoods Plan
Core Area Conceptual Plan

June 6, 1995
 EDW
 0 100 200 300 400 500 600 700 800 900 1000 feet

One area adjacent to I-80 that was shown on previous plans as high density residential, or 9-hole golf course, is now shown as open space/land reserve. This area is a former landfill and its development potential for residential uses is unknown. The property is also not very suitable for intensive recreational development, such as a golf course, because access to the site is limited and would most likely require that local residential streets be used as the main access. The site is adjacent to Walterscheid for a short distance, however grades along this street frontage are very steep, making access difficult if not impossible. Additionally, an 18-hole golf course site has been identified two miles to the southeast, in the Allison Draw drainageway north of Laramie County Community College. Until which time a suitable use is found for this area, it should be left as naturalized open space. Meanwhile, new residential developments should concentrate on the existing vacant land in the neighborhoods or on redevelopment sites in the Commercial Core (MU) area.

Commercial uses (C) are shown near the I-180/I-80 interchange and at the intersection of Walterscheid Boulevard and Deming Drive. These areas are not envisioned to have any residential uses.

A mix of commercial and light industrial uses (C/LI) is planned along the north side of both 1st Street (east of I-180) and Campstool Road (5th Street) where it is adjacent to the refinery. The west side of Morrie Avenue is also shown as C/LI. Many commercial and light industrial businesses exist here presently, with the exception of the four-block stretch of Campstool Road. Just north of the refinery in this four-block stretch there are presently houses that are greatly impacted by the operations of the refinery as well as the traffic that uses this road access the Norris Viaduct. It is a recommendation of this plan that this land use transition from residential to commercial/light industrial over time.

Light Industrial uses (LI) are planned for the western edge of the study area and along the south side of Deming Drive. This respects the current land use pattern. Heavy industrial use (HI) is isolated to the refinery property.

The railroad uses (RR) will continue to be located where they are currently, however it is recommended that a buffer be provided between the railroad yard and the Hebard neighborhood. The preferred buffer is a solid wall, similar to that which was recently constructed next to a new housing development west of Central Avenue.

No new Institutional/Educational uses are proposed. Those indicated on Figure 3.1 are those which presently exist. There are areas on the map designated as School Park. These are areas adjacent to schools, some of which contain turf or gravel play yards, that are recommended to be enhanced as public park space for use after school.

There are several new ideas regarding parks and open space that are illustrated on the Land Use Plan. The first is the acquisition of additional land east and south of Cole Elementary School. Acquiring this land would allow adequate space for a multi-purpose sports field. To develop a park in this location would require that one block of Thomes Avenue and one-half block of Stanfield Avenue between 9th Street and 7th Street be closed to through traffic, the pavement removed and reconstructed as a park. Five or six residences are also located in this area, most of which were for sale at the time of this study. Several other lots are vacant. Figure 3.2, Core Area Conceptual Plan, illustrates this in more detail. This new park would serve as an anchor to the 7th Street pedestrian spine that links to the retail district and the Old Johnson School Site across I-180.

The Old Johnson Junior High School Site was discussed thoroughly at both the Steering Committee and public meetings. Three options were presented during the open houses. They were (1) to utilize all or part of the building for community uses, (2) demolish the total structure and expand Lincoln Park, or (3) utilize the structure for commercial and/or residential purposes. The building is the property of Laramie County School District Number One and as of August, 1995, the School District accepted a purchase offer submitted by private individuals. In view of the current situation, no recommendation for the property is being made as a part of this Study.

A greenway system has been shown along Crow Creek and a portion of Clear Creek. These areas are ideal trail corridors, and the City has already installed the segment along Crow Creek between the Ames Underpass and Central Avenue. The width of the Crow Creek Greenway is conceptually shown and will be dependent upon the ultimate configuration of the floodplain if upstream flood control measures are implemented. The open space in the vicinity of Clear Creek is conceptual also and corresponds to the drainages and the steeper topography at the north edge of the Cole neighborhood. Multi-purpose paved trails should be installed through these areas to give residents and employees in the light industrial areas non-vehicular routes between their homes and other destinations in and beyond the study area. A trail is also shown connecting to the Goins neighborhood to the south and along the power line easement in this neighborhood.

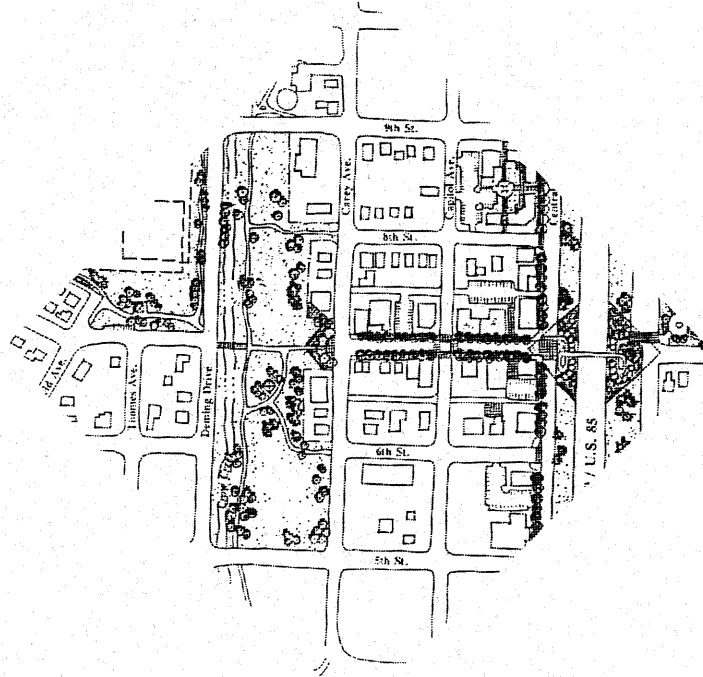
The Norris Viaduct is conceptually shown as aligned with the alley east of Alexander Avenue. This alignment was considered to be the most desirable because it had the least impact on the neighborhood and could be accomplished without negatively impacting neighborhoods north of Nationway. Other alternatives heavily impacted 9th Street, required that the location of the viaduct be moved east thereby creating new problems for northern neighborhoods, or were not economically or physically feasible. Related improvements to the realignment of the Norris Viaduct are intersection improvements at Morrie Avenue and 5th Street to improve safety and traffic flow. A full analysis of alternative alignments of the Norris Viaduct is included in Appendix A, and further discussion of this project is in the next chapter.

Core Commercial Area Conceptual Plan

Figure 3.2, Core Area Conceptual Plan, shows the central portion of the study area in more detail. On this plan, the importance of the streetscape improvements on 7th Street as a neighborhood amenity and pedestrian link between the east and west is readily apparent. Streetscape improvements on Central Avenue are equally important to attract new businesses to the area and improve its appearance from I-180. Landscape and

streetscape improvements are also shown in the vicinity of the pedestrian overpass on I-180. This is Cheyenne's best opportunity for a gateway to the City as one enters from the south.

The Core Area Conceptual Plan also shows how new commercial businesses can take advantage of the Crow Creek Greenway by locating adjacent to it. This would be an ideal location for restaurants, offices and retail shops that appeal to trail users. The park east of Cole School is shown in more detail and includes a conceptual layout of a multi-purpose field and picnic area.



Chapter IV

Action Plan

CHAPTER IV -- ACTION PLAN

This chapter discusses potential funding sources, lists specific improvement projects that should be accomplished to realize the vision for the community, and identifies those projects which should receive highest priority.

There are other actions listed as objectives in Chapter III that are not associated with physical improvements. The importance of these should not be overlooked and may be accomplished with little or no outside funding source. They do however require commitment by neighborhood residents to see that they are implemented.

Possible Sources of Funds to Finance Improvements

Sales and Use Tax for Capital Facilities

The voters of Laramie County previously approved a one percent sales and use tax which took effect on July 1, 1991. The tax was approved for specific capital facilities totaling \$29,168,606, including \$11,110,000 for a new county building, and \$3,668,500 for the remodeling of the current county building. The taxes to pay for these facilities should be totally collected in February, 1996, and the elected officials of the County and the cities and towns within the County, are expected to ask the voters to again approve the tax for a new list of capital improvements. The items on the Action List should be reviewed by City and County officials when determining the projects to be included in this new list.

A possible project for these funds is the reconstruction of the Norris Viaduct.

Optional One Percent Sales Tax

An optional one percent sales tax was approved by the voters of Laramie County for calendar years 1995, 1996, 1997, and 1998. The projects for which the funds raised by the tax were to be spent within the City of Cheyenne were indicated in Resolution No. 3565, which was approved on August 8, 1994. The Resolution indicated that approximately 69% of the funds were to be used for Street Renovation and Construction (including First

	<p>Street in the Study Area). It also indicated that if the 1995 Legislature enacted the proposed Storm Water Utility Bill (which it did), the funds designated for storm water drainage improvements would revert to street renovation work.</p>
<p>System of Public Recreation Funding</p>	<p>Another possible source of funds for the expansion of Lincoln Park, or for other recreational facilities, could be to establish a system of public recreation, and fund it as provided in Sections 18-9-101 and 18-9-201 of the Wyoming Statutes. Under these statutes, a school district may levy up to one mill on the assessed valuation of property within the district. (One mill in School District No. 1 will raise approximately \$190,000 per year.)</p>
<p>Area Included in Downtown Development Area</p>	<p>The DDA has the income from the 10 mill levy on property within the district which is primarily used for operating expenses.</p> <p>Tax increment financing can also be used to assist in paying interest and principal on loans made for improvements in the DDA area.</p>
<p>Cheyenne Area Transportation Planning Process (ChATPP) Funds</p>	<p>The ChATPP has Federal Highway Planning funds, allocated to it through WYDOT, which are used for planning only. These funds were used for preparing the "Hebard, Cole, and Goins Neighborhood Plan".</p>
<p>Surface Transportation Program</p>	<p>The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) includes a new block grant program, known as the Surface Transportation Program, that may be used by the states and localities for any roads which are not functionally classified as local or rural minor collectors. Bridge projects paid for with STP funds may be on any public road. Once the funds are distributed to the states, each state must set aside 10 percent for safety construction activities and 10 percent for transportation enhancements (see below). The allocation to Wyoming of STP funds is approximately \$35,640,000. The Cheyenne Area receives \$708,000 a year from this Program.</p>

**ISTEA Funds for
Transportation
Enhancements**

ISTEA provides that transportation funds can be used for a wide variety of uses related to intermodal transportation enhancements. Some of the permitted uses include: landscaping and other scenic beautification, and pedestrian and bicycle facilities. The Wyoming Transportation Commission has passed a resolution authorizing \$1,500,000 of enhancement funds to be used on projects other than those on the State Highway System. These funds must be applied for annually by submitting a grant application to the Wyoming Department of Transportation.

**Bridge Replacement and
Rehabilitation Program**

ISTEA also includes funding to provide assistance for any bridge on a public road. Such funding may be a potential source for the replacement of the Norris Viaduct. The annual allocation to Wyoming for the Bridge Replacement and Rehabilitation Program is about \$6,410,000.

**Community Development
Funds**

The City receives approximately \$600,000 each year in Community Development Funds from the Federal Government. These funds do not require a local match, but are intended for redevelopment and affordable housing. The funds could be used for land trades which could benefit the area.

**Cheyenne Board of Public
Utilities Funds**

The Cheyenne Board of Public Utilities is responsible for the water distribution and sanitary sewer collection systems in the Study Area, including new construction and modifications. The Board's revenues are derived primarily from user fees, and fees related to new land developments.

**State Farm Loan Board --
Grants and Loans**

Both the City and the Cheyenne Board of Public Utilities are eligible to obtain grants and loans from the Farm Loan Board. These funds are obtained by submitting an application to the Farm Loan Director, who makes recommendations to the Board, which is composed of the top five elected officials of the State (Governor, Sec. of State, etc.). Grants may be awarded for municipal, county, or special district purposes involving the planning, construction, acquisition, improvement, or emergency repair of public facilities. Loans are usually made for the same purposes for revenue-generating facilities. Grants are not awarded for operating,

administrative or routine maintenance purposes. Most grants are for 50% of the project cost, although a higher percent may be requested. The current interest on loans is 8 1/2%, but the rate is reviewed annually by the Board.

Surface Water Drainage Utility Act

The 1995 Legislature approved an act which permits the City to form a surface water drainage utility for specific areas within its jurisdiction. However, the funding for the surface drainage improvements within the area must be approved by the electors within that area. This approach is a potential future source of funds for making drainage improvements within the Study Area.

Priority Action Items and Estimated Costs

The list of action items in Table 4.1 is considered the highest priority. A lower priority project may be accomplished before a higher priority project if a dedicated funding source is identified and it does not compete with the higher priority project for the same funding source. These projects are considered essential to make progress towards the vision for the neighborhoods.

The recommended priority of each project and the entity responsible for planning, design and implementation was suggested by the Consultant and reviewed by the Steering Committee. In some cases, the Committee revised the recommendation, and in others it remained as originally suggested.

The preliminary cost estimates were prepared by using information available from other sources such as studies, master plans and engineers' estimates. In some cases, widely varying estimates were available and it was necessary to determine a reasonable estimate. As an example, the estimated costs available for the reconstruction for the Norris Viaduct ranged from \$428,000 to \$10,000,000, which included the improvement of 9th Street. Our review resulted in a preliminary cost estimate of \$4,000,000, which included \$3,500,000 for the structure and \$500,000 for the connection between the structure and Campstool Road.

Street Improvements

The top two priority projects are Street Improvements and they are related to each other. The Norris Viaduct is geometrically obsolete (it provides for only two lanes of traffic, and four lanes are needed), and it is rapidly becoming structurally obsolete. The intersection of 5th Street and Morrie Avenue is a hazardous and confusing location, and needs reconstruction including the approach from the east (Campstool Road) which will connect to the south approach to the Norris Viaduct, and the south approach to the intersection at First Street. (First Street is currently approved for reconstruction beginning in the fall of 1995.) These street improvement projects will assist in providing for the increasing traffic volumes in the area, and should discourage traffic from using the streets within the neighborhoods.

Both of these projects need planned in more detail, after which design work will need to be done and necessary right of way acquired, before construction can commence.

The seventh priority project is also a street improvement -- the improvement of Deming Drive and Walterscheid from Ames Avenue to W. Fox Farm Road. Deming Drive currently does not have adequate right of way, and additional width needs to be acquired before the street can be improved. A land survey will be needed to determine the boundaries of the existing right of way, and to indicate the needed additional property. After the right of way is acquired, improvement of the street is recommended.

Upstream Flood Control

The potential for flood damage is believed to be detrimental to development in the Study Area.

It is suggested the City review the recommendations of the Drainage Master Plans for Crow and Clear Creeks to see if the situation has changed regarding the feasibility of upstream flood control.

One change which needs to be considered is the large earthwork project done by F.E. Warren Air Force Base near Crow Creek in 1993. That project removed a large amount of material and should make the construction of a detention pond in the area more feasible and economical than it was previously.

A second factor to be considered is the cost of the proposed revision of the Ames Underpass, which is mentioned in the Master Plan as a need, but does not appear to be included as a cost of the selected alternate. Adequate upstream storage may eliminate or postpone the need for the changes in Ames Avenue and the Underpass.

The first step is to conduct a study to review the feasibility of upstream detention as a flood control measure.

Streetscape Improvements

Although a number of streetscape projects are recommended., the first projects should be in the high traffic areas to gain public support for the remainder of the project. For this reason, the priority projects recommended are those on Central Avenue and 7th Street, and along I-180.

Sanitary Sewer & Water System Upgrades

The sanitary sewer and water system upgrades fall within the jurisdiction of the Cheyenne Board of Public Utilities, and the Board will be responsible for funding needed improvements. The Board has completed comprehensive master plans for both its water and sanitary sewer systems, and its proceeding with making needed improvements. For example, the Board has initiated the design process for the construction of the needed trunk lines in the eastern part of the Study Area.

A high priority is also recommended for the replacement of water lines in the Study Area to (1) provide adequate fire protection, and (2) provide water of high quality by replacing the unlined mains.

Park, Landscape and Streetscape Improvements

Crow Creek Greenway Enhancements. The City should take advantage of the undevelopable land that is located adjacent to Crow Creek near the Commercial Core. The Crow Creek Greenway corridor should be widened, the natural character of the channel enhanced and other recreational amenities developed, such as picnic and nature observation areas. This will make the creek-front area a valuable amenity to the developing commercial core and provide open space for area residents.

Cole School Park. The City should pursue acquisition of the land necessary to accommodate the park site east of the Cole Elementary School. As mentioned earlier, a park should be developed in this area that will be large enough to accommodate a multi-purpose play field and community picnic area.

Multi-Purpose Trails. Multi-Purpose trails should be developed further on Crow Creek and through the Cole and Goins neighborhoods. This will allow residents to have walking or bicycle access to work and school with minimal contact with vehicles. It will provide additional recreational opportunities as well by providing places to stroll, run, rollerskate, skateboard and bike. Trails are one of the most highly used recreational facilities in urban areas.

Railroad Buffer. The north edge of the Hebard neighborhood is greatly impacted by the visual quality and noise associated with the rail yards. A solid barrier is needed to reduce these impacts.

Table 4.1
Priority Action Items

Priority No.	Type of Project	Description	Estimated Project Cost	Responsible Entity (ies)	Potential Funding Sources
1	Street	Norris Viaduct Reconstruction (Viaduct & connection to Campstool Rd.)	\$4,000,000	ChATPP WYDOT CDPW	ChATPP ISTEA Cap. Facil. Tax
2	Street	Intersection 5th Street & Morrie Avenue (Reconstruction of intersection and approaches)	\$1,600,000	ChATPP CDPW	ChATPP 1% Sales Tax Cap. Facil. Tax FLB
3	Redevelopment	Old Johnson Jr. H.S.	\$750,000	School Board City	Cap. Facil. Tax Public Rec. Funding FLB Private Funds

4	Feasibility Study	Upstream Flood Control on Clear & Crow Creeks	\$25,000	CDPW Lar. Co.	Surface Water Drainage Utility Cap. Facil. Tax FLB
5	Streetscape	a) Improvements on Central Ave. & 7th b) Improvements along I-180	\$500,000 \$75,000	DDA WYDOT	ISTEA DDA Prop. Tax ISTEA
6	Sanitary Sewer	Refinery to the East	\$2,030,000	BPU	BPU, FLB
7	Sanitary Sewer	Reline Sanitary Sewer	\$255,000	BPU	BPU
8	Water System	Needed Mains	\$1,209,000	BPU	BPU, FLB
9	Water System	Replace Unlined Mains	\$3,368,000	BPU	BPU, FLB Cap. Facil. Tax
10	Street	Reconstruction of Deming Drive and Walterscheid from Ames to W. Fox Farm Road	\$710,000	CDPW	1% Sales Tax FLB Cap. Facil. Tax
Total Estimated Cost -- Priority Action Items			\$14,522,000		

Additional Action Items

The following projects should also be implemented but take second priority if they compete with the previously mentioned projects for funding. These action items should be implemented as soon as possible when funding becomes available. As mentioned earlier, other action items that are not capital projects are listed as objectives in Chapter III.

Table 4.2
Additional Action Items

Priority No.	Type of Project	Description	Estimated Project Cost	Responsible Entity (ies)	Potential Funding Sources
1	Street	Interchange on I-80 at Parsley Dr.	\$2,000,000	WYDOT	WYDOT
2	Street	Street Paving Project (Currently Unpaved)	\$300,000	CDPW	Improvement District
3	Street	Curb, Gutter & Sidewalk Imp.	\$300,000	CDPW	Improvement District
4	Street	Parsley Blvd. & Tank Farm Road College to Pacific	\$2,500,000	CDPW Lar. Co.	1% Sales Tax
5	Street	Southwest Drive Lincolnway-College	\$2,000,000	CDPW Lar. Co.	1% Sales Tax
6	Drainage	Clear Creek New Reservoir Enlarge Clear Res. Enlarge Swan Res.	\$6,773,000 \$3,636,000 \$3,783,000	CDPW & Lar. Co.	Surface Water Drainage Utility Cap. Facil. Tax FLB
7	Drainage	Crow Creek New Reservoir (Also benefit portion of City north of Ames)	\$7,000,000	CDPW & Lar. Co.	Surface Water Drainage Utility Cap. Facil. Tax FLB
8	Sanitary Sewer	Cribbon, North of West Allison (2N.81.19)	\$140,000 \$140,000	BPU	BPU
9	Park	Crow Creek Greenway Enhancements	\$500,000	City	Greenway Funds
10	Park	Cole School Park	\$1,000,000	School Bd. City	Public Rec. Funding Cap. Facil. Tax

**Explanation of
Abbreviations Used In
Tables**

Responsible Entities

BPU -- The Cheyenne Board of Public Utilities

CDPW -- The Cheyenne Department of Public Works

ChATPP -- The Cheyenne Area Transportation Planning Process

City -- The City of Cheyenne, Wyoming

DDA -- The Downtown Development Authority

Lar. Co. -- Laramie County, Wyoming

School District -- School District No. 1, Laramie County

WYDOT -- The Wyoming Department of Transportation

Possible Funding Sources

(For information about each of the possible sources of funds, see the "Possible Sources of Funds to Finance Improvements Chapter"

BPU -- Funds available to the Cheyenne Board of Public Utilities, primarily revenues from user fees.

Cap. Facil. Tax -- The Sales and Use Tax for Capital Facilities, frequently referred to as the 6th penny tax.

ChATPP -- Federal Highway Planning funds allocated to the Cheyenne Area Transportation Planning Process via WYDOT.

DDA Prop. Tax -- Funds from the 10 mill levy available to the Downtown Development Authority.

FLB -- Grants or loans from the Wyoming Farm Loan Board.

Greenway Funds -- Funds included in the 1991 Capital Facilities Tax for the construction of the Greenway System, or other funds obtained by the Greenway Committee.

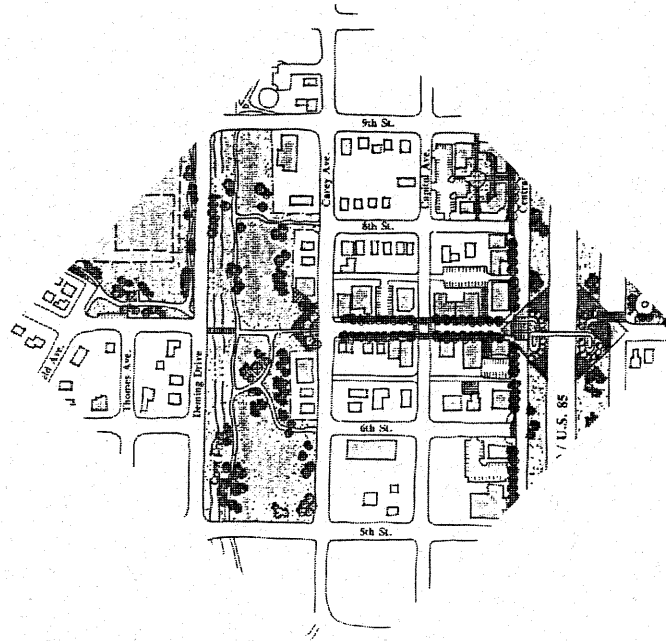
ISTEA -- Federal Funds available to the State through the Intermodal Surface Transportation Efficiency Act of 1991. (It includes for numerous programs including The National Highway System, Surface Transportation Program, Bridge Improvements, etc).

National Trails Funds -- Funds included in the ISTEA to be used for Trails.

1 % Sales Tax -- Funds available from the Optional 1 % Sales and Use Tax, often referred to as the fifth penny tax.

Public Recreation Funding -- Funds which the statutes authorize the School District to levy and collect to establish a system of public recreation.

Surface Water Drainage Utility -- Funds available if the local electorate approves the creation of a storm water utility.



Appendix

APPENDIX A. REALIGNMENT OPTIONS FOR THE NORRIS VIADUCT

Introduction

The agreement for the study indicates the Consultant will review three transportation projects proposed in the area. One of the projects is the realignment of the Norris Viaduct to connect to 9th Street, including a below grade crossing of the Greenway at 9th Street. A second project is to make 5th Street a local street, and the best way to discourage through traffic. These two projects are related since the primary purpose of realigning the Norris Viaduct to connect to 9th Street is to reduce the traffic which now goes (and comes from the) west on 5th Street at the intersection of Morrie Avenue and 5th Street.

The only two at-grade intersections on Interstate Highway 180 between the Union Pacific Railroad (UPRR) tracks and Interstate Highway 80 are at 5th Street and at 9th Street.

In an effort to increase the traffic on 9th St., and reduce the traffic on 5th St., the ChATPP has revised the functional classification of 9th St. to a minor arterial, and 5th St. to a local street. The ChATPP has also completed a study (Ninth Street Corridor Study, 1986, by A.C.I., p.c.) of whether a new Norris Viaduct should be constructed, or to utilize the existing structure. That study recommended the construction of a new structure with Morrie Avenue as the primary connection to the south. It estimated the cost of the new structure and the new Morrie Connector to be \$2,936,000, in 1990 dollars.

Review of Origin and Destination Information for the Norris Viaduct

In an effort to learn more about the traffic using the Norris Viaduct, it was decided to analyze the origins and destinations of the traffic projected to use the Viaduct.

The Cheyenne Area Transportation Planning Process (ChATPP) provided information regarding the origin and destination of trips crossing the Norris Viaduct for three conditions:

- A. 1990 traffic, with existing and committed conditions,

-
- B. Projected 2010 traffic, with existing and committed, physical conditions.
 - C. Projected 2010 traffic, with completion of the projected transportation improvement projects. The major improvement project of interest is the reconstruction of the Norris Viaduct to tie to 9th Street, and the improvement of 9th Street from the Viaduct to I-180.

The data provided included the origins and destinations for almost 300 traffic zones in the Cheyenne area. The data was developed using a computer utilizing an iterative process based on travel times between zones. The process is a useful tool for preparing traffic analyses, but is based on many assumptions regarding population growth, locations where growth will occur, etc. This analysis also utilized the Cheyenne Area Master Transportation Plan, which was issued by the ChATPP in 1994.

The data indicated the total daily trips crossing the Viaduct under the three conditions to be:

Condition A	12,124 trips
Condition B	17,503 trips
Condition C	21,153 trips

An analysis of the information provided led to the following conclusions:

1. The total traffic using the Norris Viaduct in the year 2010 will be approximately 3650 vehicles per day higher with Condition C, as opposed to Condition B. Condition C assumes not only that the Norris Viaduct is reconstructed and reoriented to connect to 9th Street, and the 9th Street is improved, but also that the other minor arterial and collector streets in the study area are improved. Condition B is based on the assumption that none of these improvements are made and the existing alignments are the same. The increased traffic on the Norris Viaduct, with Condition C, is not desirable from the viewpoint of the Study Area, since it means an additional 3650 vehicles on the street system south of the Viaduct.

The total traffic using the I-180 Structures over the UPRR shows more vehicles (2600 vehicles per day) with Condition B than with Condition C. Apparently, the improvements associated with Condition C will divert some of the traffic from the I-180 structures to the Norris Viaduct. The diversion of the traffic to the I-180 structures is considered desirable, from the viewpoint of the Study Area, since I-180 is designed to accommodate through traffic and there is no negative effect on the established neighborhoods.

The traffic across the UPRR on College Drive also shows a significant decrease from Condition B to Condition C. Much of the reduction is believed to be the result of two new structures (at Christensen and Whitney Roads) across the UPRR which connect Campstool Road and the LEADS Industrial Park to the street system north of the UPRR.

2. For purposes of analysis, the traffic analysis zones were grouped to make it easier to determine the areas of the City from which trips using the Norris Viaduct were originating. These zones are indicated in Figure 1.

The number of trips originating from each of the areas under each of the three conditions outlined above, was then computed and the percentage of the total trips is indicated in Figure 1. It can be noted that the percentage of trips originating in the Hebard, Cole and Goins Neighborhood Study Area for the three conditions is 22.5%, 18.1%, and 19.9% respectively. In other words, approximately one out of five trips using the Viaduct originates in the Study Area.

Remembering that half of the origins are on each side of the Viaduct, it can be said that about 40% of the trips from south of the Viaduct originate in the Hebard, Cole & Goins Neighborhoods.

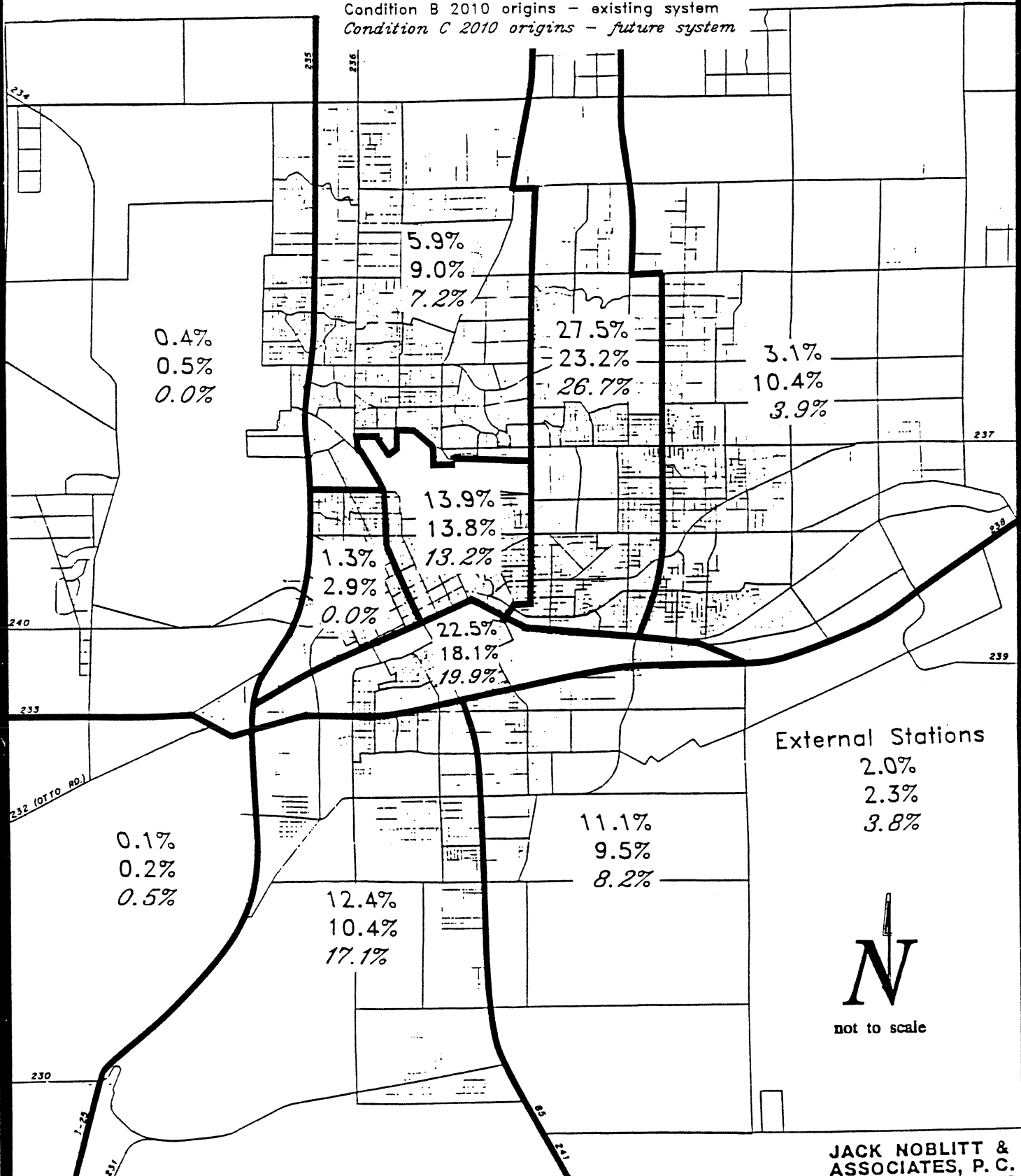
Figure 1.

ORIGINS OF TRIPS ON NORRIS VIADUCT
(% of total origins using overpass)

Condition A 1990 origins - existing system

Condition B 2010 origins - existing system

Condition C 2010 origins - future system



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-
3. An analysis was made of the trips originating from the traffic zones located in the Hebard, Cole & Goins Neighborhood Study Area. This information for the three conditions is indicated in Table 1. It can be noted that the traffic zones located on the west side of Central Avenue generate significantly more trips with Condition C, than with Condition A or B. This significant increase in the traffic from the Viaduct to the zones west of I-180 is not desirable, since it conflicts with the objective of reducing the east-west traffic on the residential streets in the Study Area.
 4. It can be noted in Table 1 that the traffic using the Viaduct from Zone 200 (Frontier Refinery) is significantly reduced with Condition C. The destinations of trips originating in Zone 200 were plotted for the 10 traffic areas, and these are indicated in Figure 2. It appears the reductions are due to (1) the improvement of 9th Street which makes it more convenient for trips from the northwest to use I-180 and 9th Street, as well as (2) the street system improvements to the east (Christensen and Whitney Roads) reducing the convenience of the Viaduct.
 5. Significant reductions are also indicated in Table 1 for Zones 197 (residential area at the west end of the Viaduct), and Zone 201 (west end of LEADS Industrial Park). The reasons for these reductions are believed to be similar to those indicated above for the Refinery.
 6. Based on the traffic forecasts in the Cheyenne Area Master Transportation Plan, the current traffic on 9th Street is 400 vehicles per day, and with Condition C, the volume is 17,200 vehicles per day. Similarly, the volume on Morrie Avenue, north of 5th Street will increase from the current 1500 vehicles per day, to 11,400 in the year 2010. All streets with projected volumes exceeding 10,000 vehicles per day can be expected to warrant four lanes when they are reconstructed. The traffic on Fifth Street is

Analysis of Trip Origins from the Zones in the Study Area
Table 1

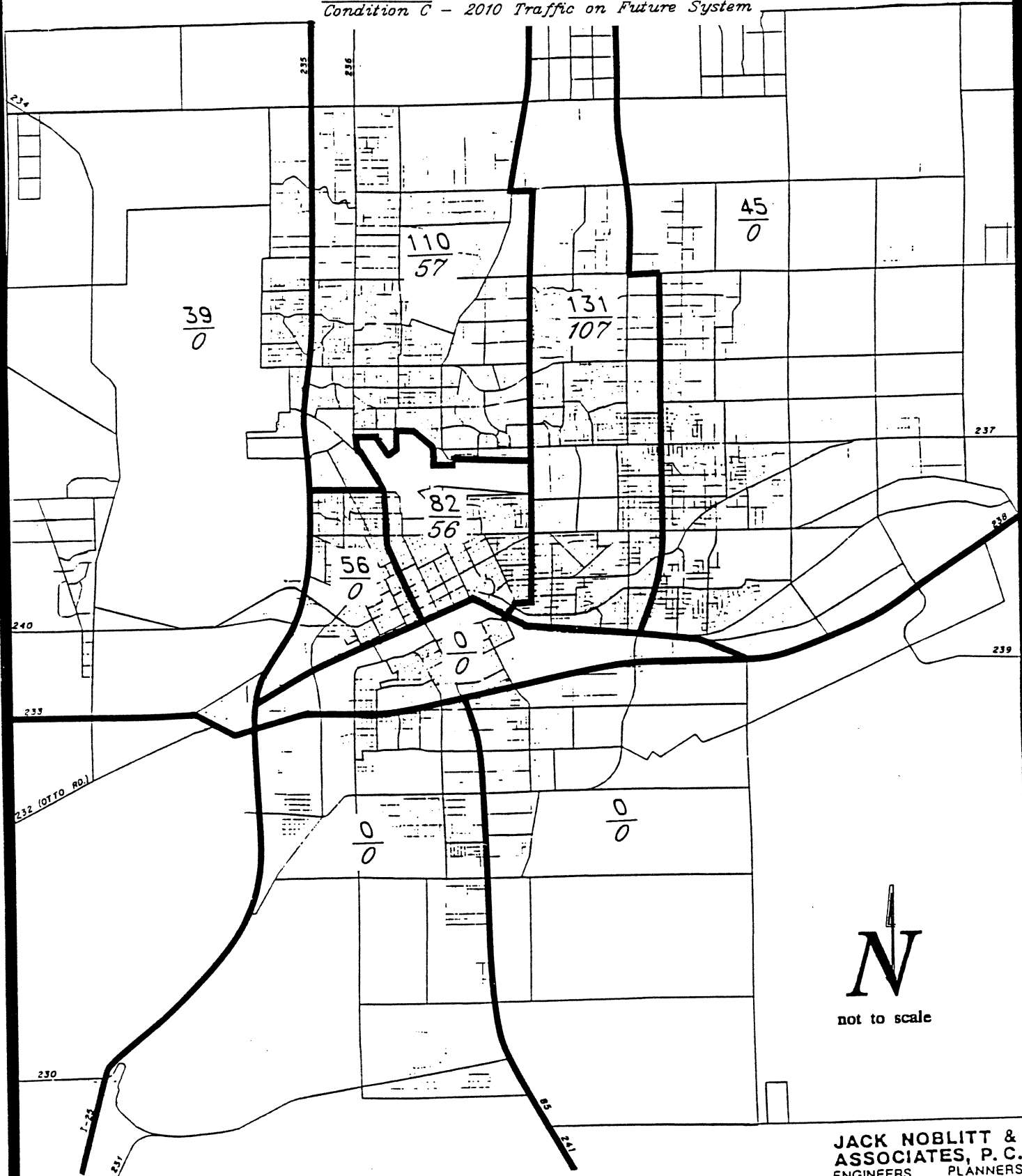
Zones	Trip Origins Conditions		
	A	B	C
176	---	---	---
181	---	---	158
182	94	117	309
183	---	---	539
184	---	---	109
185	---	---	141
186	28	36	206
187	70	162	373
188	41	53	143
198	---	---	14
West of I-180 Subtotal	233	368	1992
189	302	338	330
190	111	123	128
191	260	287	290
192	128	178	172
193	87	100	97
194	16	18	153
195	158	157	173
196	136	137	145
197	488	613	368
199	57	58	55
200	455	465	220
201	298	320	78
East of I-180 Subtotal	2496	2794	2209
Total from Study Area	2729	3162	4201

Figure 2.

DESTINATIONS OF TRIPS USING VIADUCT
ORIGINATING IN ZONE 200 (FRONTIER REFINERY)

Condition B - Traffic on Existing System

Condition C - 2010 Traffic on Future System



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projected to drop from the current 2800 vehicles per day to only a few hundred vehicles with Condition C. This reduction of the traffic on Fifth Street is probably the result of (1) turning the Norris Viaduct to connect with 9th Street, making 9th Street the most convenient east-west route in the Study Area, and (2) lowering the functional classification of 5th Street which would reduce its estimated travel speed -- thereby making other routes more attractive.

7. The advantages of reconstructing the Norris Viaduct with a direct connection to 9th Street are:
- a. The traffic is reduced on 5th Street which is narrower than 9th St., and is adjacent to the Hebard School.
 - b. The situation is improved at the problem intersections at 5th St. and Duff Avenue, and 5th St. and Morrie Avenue.

The disadvantages of reconstructing the Norris Viaduct with a direct connection to 9th Street are:

- a. The project average daily traffic volume on 9th St. in the year 2010 is 17,200. To accommodate this volume, 9th Street will have to be widened to four lanes, or be converted to part of a one-way couplet.
- b. Ninth Street becomes a preferred route for east-west traffic:
 - 1) from I-180 to the Refinery and points east.
 - 2) from areas west of I-180 to areas east and north of the Norris Viaduct.
- c. A major traffic route is created between the buildings of Schroll Cabinets, and there is a potential for increased traffic in front of the Cole Elementary School.

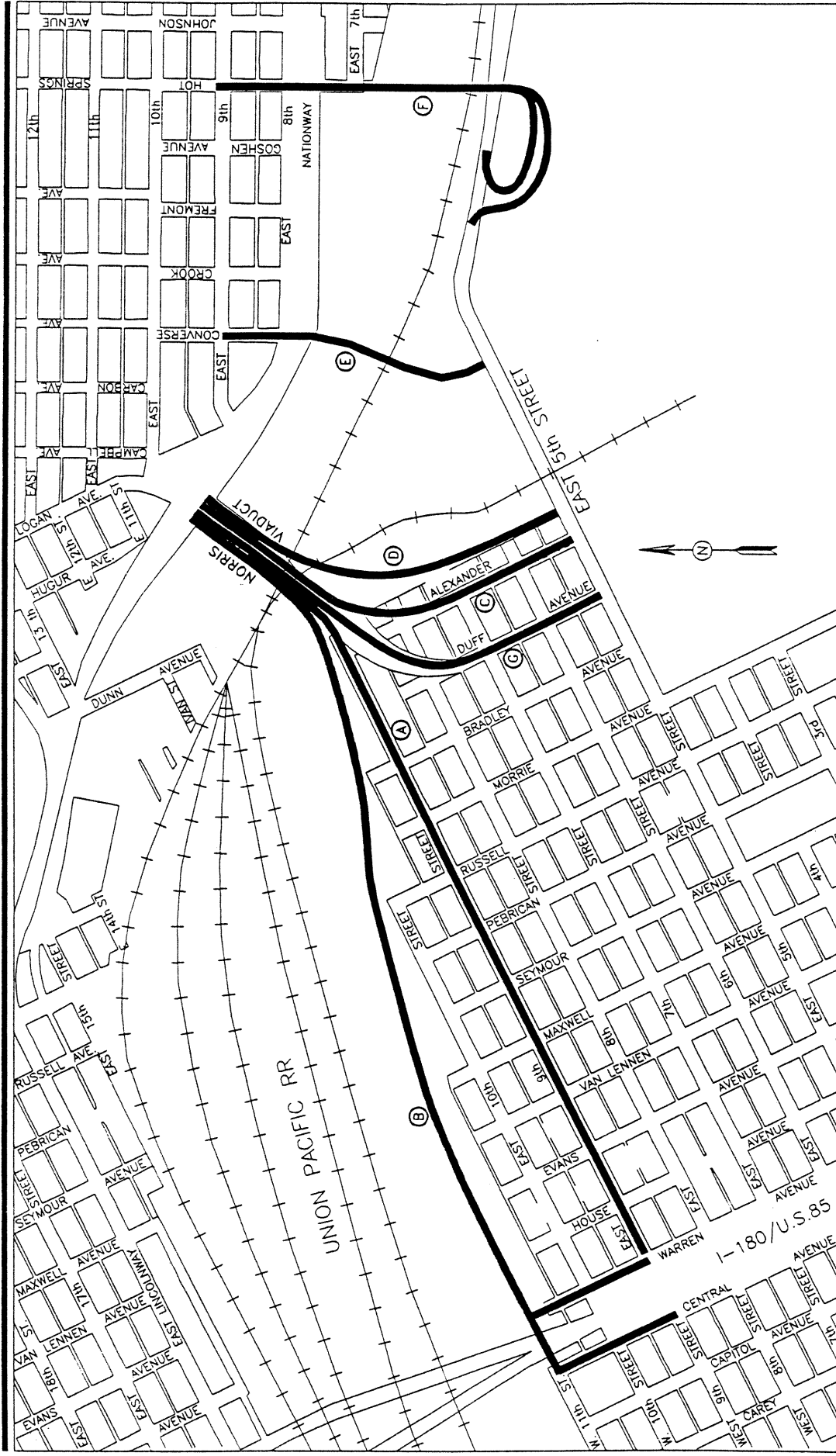
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- d. Complete reconstruction of the Norris Viaduct is required to make an adequate connection. The grade on the south end will probably be steeper than desired to provide the existing access to the Schroll Cabinet buildings.
 - e. A current major access route to the UPRR yards is disrupted.

Alternative Alignments

Since neither the existing situation, or the connection of the Norris Viaduct to 9th Street, appears to offer a good solution from the standpoint of neighborhood planning, other alternatives offering a good solution were reviewed. The locations are indicated in Figure 3, and are briefly described as follows:

- A. The alternative alignment along 9th Street which has been described and discussed above.
- B. A new road along the south side of the UPRR right-of-way which would connect directly to a reconstructed Norris Viaduct on the east, and which could connect either directly or indirectly to the intersection of I-180 and 9th St. on the west. The direct connection would require the taking of more right-of-way and homes, while the indirect connection would utilize the existing northern connections of Central and Warren Avenues to reach the intersection.
- C. A connection of a reconstructed and realigned Norris Viaduct to Alexander Avenue. This alignment is one block east of the existing alignment on Duff Avenue, but it is at the east edge of the residential neighborhood.

In conjunction with Alternative Alignments C, D, E, F, or G, it is proposed that Fifth Street be barricaded at the west side of Morrie Avenue, and Morrie Avenue be



Hebard, Cole and Goins Neighborhoods Plan ALTERNATIVE ALIGNMENTS NORRIS VIADUCT REPLACEMENT

Jack Noblitt & Associates, P.C.
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barricaded on the north side of Fifth Street. Such barricades will discourage through traffic on Fifth Street, and will eliminate the hazardous intersection of Fifth Street and Morrie Avenue. The barricades should be done as a part of the reconstruction of the area which should include flattening the curve between the east and south legs of the location. The reconstruction should be done so that the result is aesthetically pleasing.

D. This Alternative Alignment is similar to Alternative C, except that the location utilizes the alley east of Alexander. It also would require the reconstruction and realignment of the Norris Viaduct.

E. and F. These Alternative Alignments involve a relocation of the Norris Viaduct further to the east which would connect with a major street to the north and which could extend to the south. Possible connections to the north could be either to Converse Avenue (Alternative E) or to Hot Springs Avenue (Alternative F). Connection to the south could possibly connect to a new interchange on I-80, or could extend across I-80 and connect to the street system south of I-80.

G. This Alternative is to reconstruct the Viaduct utilizing the same location.

It would involve widening the structure to accommodate four lanes.

A comparison and analysis of the eight alternative alignments (the eighth is to "do nothing") is shown on Table 2. It can be noted that there is no alignment that is clearly superior.

	RECONSTRUCT -- Favor Traffic to West			RECONSTRUCT -- Favor Traffic to South		Relocate Further East		Do Nothing
	(A) Connect to 9th St. Divides residential area	(B) Connect to new road on So. side of UPRR Creates barrier next to UPRR	(C) Alexander Street At edge of development	(D) Alley east of Alexander Street East of development	(E) Converse Ave. Corridor No effect on Hebard-Cole-Goins	(F) Hot Springs Ave. Corridor No effect on Hebard-Cole-Goins	(G) Reconstruct at Same Location Divides neighborhood	
Compatibility (neighborhood plan)	--	++	+	++	++	++	--	--
Attainability (R/W)	+ Some R/W from UPRR	---	+	++	--	--	+	++
Adaptability (culture, grading, drainage, landscaping)	+ Structure on curve Major grading	+	+	+	+	+	+	+
Design Features & Operational Characteristics	+ 17,400 A.D.T. on 9th St. in future	+	+	+	+	+	+	+
Capacity and Traffic Service	-- 4 lanes on 9th St.	-- Problem @ I-180	+	+	+	+	+	--
Costs	-- Reconstruct structure and 9th Street	---	+	+	+	+	+	---
Maintenance of Traffic During Construction	-- Closed during constr. of new structure	-- Closed during constr. of new structure	+	+	+	+	+	---

KEY: + Better situation than average of alternatives
 ++ Much better situation than average of alternatives
 -- Poorer situation than average of alternatives
 --- Much poorer situation than average of alternatives
 (G) Indicates Alternate Alignment letter.

Table 2

Hebard, Cole and Goins Neighborhoods Plan ANALYSIS OF ALTERNATIVE ALIGNMENTS NORRIS VIADUCT RECONSTRUCTION

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 ED&W, Inc.

July 1995

A computer analysis was made by the ChATPP, assuming the Norris Viaduct was reconstructed to connect to Alexander Avenue, to determine the traffic volumes in the Study Area. The results are indicated in Figure 4. The analysis assumed that Fifth Street was barricaded on the west side of Morrie Avenue, and that traffic was not encouraged to use 9th Street.

**Recommendations Related
to the Norris Viaduct**

The recommended major components of the transportation plan related to the Norris Viaduct are:

- a. I-180 should remain the major north-south route through the study area. The primary access to the commercial area along Central Avenue should continue to be I-180.
- b. The Norris Viaduct should be reconstructed in a manner that does not negatively affect the neighborhoods in the Study Area. A more detailed analysis should be made of the potential alternatives, as indicated in Items 8 and 9, above.
- c. As an interim measure, the City may want to consider permanently barricading Fifth Street at the west side of Morrie Avenue, and Morrie Avenue at the north side of Fifth Street. Such barricades will discourage the through traffic on Fifth St., and will eliminate the hazardous intersection of Fifth St. and Morrie Avenue.
- d. Traffic east of I-180 should be encouraged to reach I-180 by using First Street, Deming Drive, and Central Avenue. The abutting land uses on this route are commercial and industrial. Traffic control devices can be used to assist in this effort by making this route the only east-west through street in the Study Area, setting low speed limits on the local streets, and by eliminating stop and yield signs at the intersections of local streets in the Study Area.

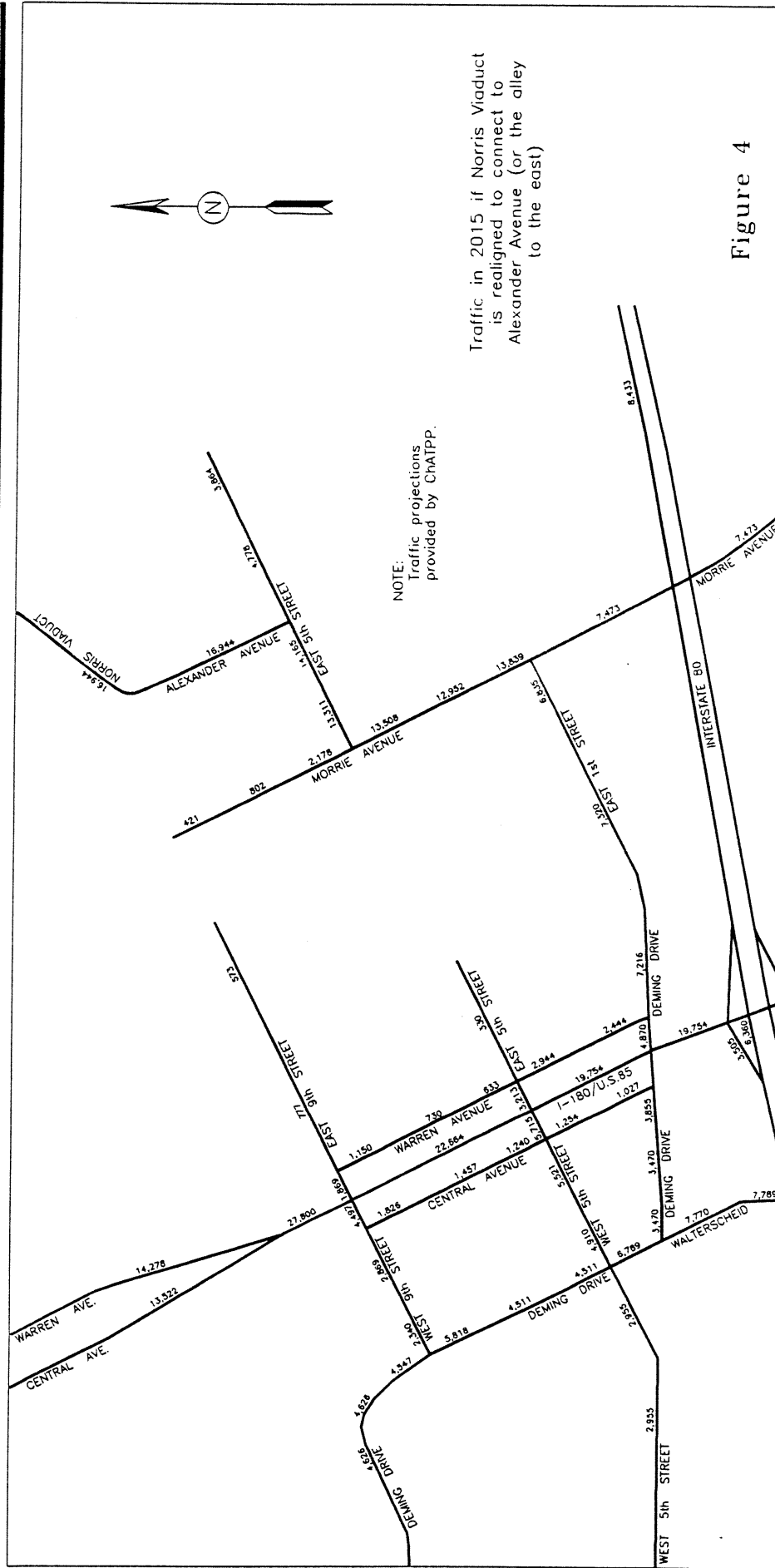


Figure 4

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- e. Traffic to the LEADS Industrial Park should be encouraged to use College Drive or the streets to the east of College Drive. The improvement of the access between College Drive and Campstool Road should be improved as a high priority.

APPENDIX B. DEMING DRIVE DESIGN AND RIGHT-OF-WAY

Purpose

The scope of work for the Hebard, Cole and Goins Neighborhood Planning project indicates the Consultant will review several specific transportation projects proposed for the area. One of these is to: Recommend a Typical Section for Deming Drive from Ames Underpass to 1st Street.

Existing Conditions

The current street is two-lane and two-way. There is a traffic signal where Deming Drive intersects Parsley Blvd. and Ames Avenue. The street has curb and gutter only where there have been related improvement projects (Ames Avenue intersection, Walterscheid intersection, where I-180 crosses). The southern and eastern terminus of Deming Drive is at 1st Street, which is at approximately Van Lennen Avenue.

Deming Drive follows Crow Creek from Ames Avenue to 1st St., and the Greenway also follows Crow Creek through this segment. The bikeway has been constructed, as a part of the Greenway, from Ames Avenue to I-180.

Functional Classification

Deming Drive is functionally classified as a minor arterial from Ames Avenue to 9th St., and as a collector from 9th St. to 1st St.

Existing Traffic Volumes

The historic traffic volumes obtained from the City indicate:

On Deming, east of Bent

<u>Date</u>	<u>24 hr. Count</u>
4-82	6952
6-85	3052
8-86	4659
6-91	5701

On Deming, south of 7th Street	
4-82	5891
7-85	4693
8-86	5460
6-91	5168

On Deming, west of Central	
6-85	2580
8-86	2785
3-90	2211
6-91	2237

On Deming, east of Warren	
6-85	4688
8-86	3105
3-90	3135
6-91	2823

Projected Traffic Volumes

The projected traffic volumes on Deming Drive were obtained from the Cheyenne Area Master Transportation Plan, 1994, by the Cheyenne Area Transportation Planning Process. (Figure 3.3c, of that report, indicates the 1994 traffic assignment to the 1994 street network, at the following locations on Deming Drive:

East of the Ames Underpass	4800
West of the 9th St. intersection	3900
Between 9th St. and 5th St.	4900
West of Central Ave.	2100
East of Warren Ave.	3600

Figure 4.4c, of the Area Master Transportation Plan, indicates the 2010 traffic assignment to the 1994 street network as 5800, 4800, 5900, 2800, and 4500, at the above locations, respectively.

Figure 4.5c, of the Area Master Transportation Plan, indicates the 2010 traffic assignment to the 2010 street network as 6200 on Deming Drive between Ames Avenue and 9th St., 5800 from 9th St. to Walterscheid, 1000 west of Central Ave., and 2700 east of Warren Avenue.

(As a part of this Study, the ChATPP made a traffic projection assuming the Norris Viaduct was realigned to connect to Alexander Avenue. The projected average daily traffic volumes in the year 2015 on Deming Drive are: 4626 east of the Ames Underpass, 4547 west of the 9th St. intersection, 4511 between 9th and 5th Streets, 3655 west of Central Avenue, and 7216 east of Warren Avenue.)

Capacity

It can be noted that the highest traffic assignment to Deming Drive under any of the above assumptions is 6200 vehicles per day. This volume is below the capacity of a two-lane street assuming Level of Service C is satisfactory, and that the proportion of the AADT (Annual Average Daily Traffic) expected to occur in the design hour is less than 12%.

Recommendation of Typical Sections

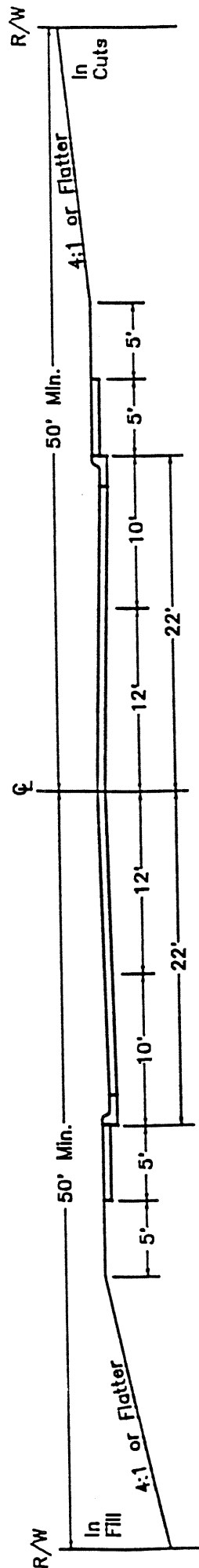
The recommended typical cross section for a minor arterial with two lanes is illustrated in Figure VI-2, and described in Table VI-1 of the Road, Street & Site, Planning and Design Standards, 1990, as amended. The recommended typical cross section for a Collector is also indicated in Table VI-1.

A copy of Figure VI-2 is attached. The cross section for a Collector should be the same, with the shoulders reduced to 8', and a minimum right-of-way of 80'.

It is anticipated that the adoption of the recommendations of this Report will result in some revision of the functional classification of some streets. After the revisions, it is recommended that Deming Drive be constructed as a two-lane street in accordance with the adopted standards. This will be a 44' section on the minor arterial segments, and a 40' section on the collector segments.

Available Right of Way

Deming Drive is bounded on the south and west by residential, mixed use business (MUB), and light industrial areas. On the north and east the street is bounded by Crow Creek. Between Warren Avenue and First Street there is some light industrial property on the north side.



TYPICAL SECTION
MINOR ARTERIAL
WITH 2 LANES

1. Other standards are indicated in TABLE VI-1.
2. See other appropriate Sections of these Standards for additional information.
3. Where fill slopes are steeper than 3:1, guard rail may be required.
4. Minor arterials with 4 or more lanes should have medians.
5. See Chapter XIII for a standard placement of utilities.

The right of way for Deming Drive has not been platted. It appears that in the 1950's the City of Cheyenne acquired land along the right bank of Crow Creek for construction of the street. There is no evidence that the acquired property was ever platted or dedicated. In preparing the present City Maps, the City Engineer's office used descriptions on the deeds to delineate the boundaries of city property. A map labelled as a "plat" signed and dated by the City Engineer in 1952 shows dimensions of several partial blocks in the vicinity of Deming Drive and West 10th Street. There are no dedications or approvals, so the document is not a proper plat.

From Ames Avenue to West 9th Street, Deming Drive is classified as a minor arterial. The standard section for a minor arterial as set forth in the Road, Street and Site Planning and Design Standards requires a right of way width of 100 feet. The width of land available for construction of a street, as measured from the property line to the top of the bank of Crow Creek, varies but is in general less than 100 feet.

From West 9th Street south and east to First Street, Deming Drive is classified as a collector. The standard section requires a right of way of 80 feet. North of West 5th Street, there is in general less than 80 feet (actually about 55 feet \pm) between the property line on the west and the top of the bank of Crow Creek. From 5th Street to First Street the width of public property varies, but for most of the length it is at least 80 feet.

It is possible that Deming Drive and Walterscheid Road From Ames Avenue to West College Drive will be reclassified to minor arterial.

The standard right of way widths of 100 feet and 80 feet for minor arterials and collectors, respectively, include space to slope from the street grade to natural grade. Along the alignment of Deming Drive, some of that right of way may not be necessary, and it may be possible to reduce the width from that required by the standard. If a minimum of ten feet were required from back of curb to the right of way line, the respective ROW requirements are 64 feet and 60 feet. These requirements could possibly be further reduced by, for example, eliminating the sidewalk on the creek side.

There appears to be at least 64 feet available for the minor arterial portion and 60 feet for the collector portion, except for the section between 5th Street and Bent Avenue.

Discussion of Right of Way Alternatives

Where there is not sufficient right of way, the alternatives for Deming Drive are:

1. Construct a street section narrower than required by the standard
2. Acquire additional right of way, the amount depending on degree to which standards are modified
3. Fill part of the floodway of the creek to provide additional street width.

Improvements to Deming Drive which do not include compliance with the Road and Street Standards may reduce land acquisition costs on parts of the route. However, there are significant problems with this choice. The objectives of development of a parkway system in the neighborhoods would be in part defeated by construction of a substandard street. Increased traffic, particularly pedestrian and bicycle traffic, in the area increases the requirement for adequate street and right of way width. The standards provide adequate width for traffic lanes, parking, sidewalks, and clear space. Neighborhood development will increase rather than decrease the importance of correctly designed and constructed streets. Therefore, alternative 1 would fail to meet any reasonable criteria for development of Deming Drive.

Acquisition of additional right of way is the most straightforward way to build the street to meet the standards. Although the initial cost of this alternative could be considerable, part of the cost will be incurred anyway to obtain land for the parkway development. The additional cost to obtain street right of way will be appreciable but not a major cost of the neighborhood development. This alternative will insure that a street adequate to handle present and projected traffic can be

designed and built, that the street will complement the parkway, and that it will provide a safe environment for thru traffic as well as local residents and users of the parkway.

There are several problems with Alternative 3. The alternative requires placing of fill in a designated floodway. It does not appear that the cost of such a project can be kept within reasonable limits. The regulatory floodway presently extends over the banks of Crow Creek in places along Deming Drive. The further obstruction of the creek implied in this alternative will be difficult to mitigate. The expense as well as the technical and regulatory complications of this alternative should remove it from further consideration.

The right of way for Deming Drive and any property acquired for parkway or other public improvements should be surveyed and platted by a professional land surveyor. Records at the City Clerk's and City Engineer's offices indicate that during the 1950's the City of Cheyenne acquired property for the construction of Deming Drive. Blocks or portions of blocks platted in the Original City plat were purchased by warranty deed and used for construction of the street. As a result, in order to accurately establish the limits of public right of way, city owned property, and private property the deeds will have to be researched. A plat will document all boundaries and properly dedicate the right of way.

This discussion is based on distances obtained by scaling from maps and a few spot measurements in the field. More precise locations of the property lines and the edge of the creek bank are required. The property lines can probably be found by researching deeds in the City Clerk's office. The stream bank location will require a survey.

Conclusion Regarding Right of Way

The preferred alternative is Alternative 2, acquisition of additional right where necessary to construct the street to comply with the Road, Street, and Site Plan Design Standards.

Recommendations

1. Construct Deming Drive to meet all standards, including right of way standards, of the appropriate functional classification.
2. Acquire the required right of way to construct the road without filling in the Crow Creek floodway.
3. Survey and plat all land to be acquired, including land for parkway and for streets. Dedicate the park and street rights of way as appropriate.

APPENDIX C. FLOODPLAIN MANAGEMENT OPTIONS

Areas of Flood Hazard

Extensive areas of neighborhoods in both the Crow Creek and Clear Creek drainage basins are subject to flooding. The Cheyenne Drainage Master Plan, 1988 (1) modelled the hydrology of Clear Creek and Crow Creek (as well as the other major basins in the Cheyenne Area) and produced maps delineating the 100 year flood plains. These maps form the basis for the City's Floodplain Management Maps.

The Federal Emergency Management Agency (FEMA) utilized City of Cheyenne data to prepare the Flood Insurance Rate Map (FIRM) of Cheyenne. With a few exceptions, the FIRM and the City Floodplain Management maps show identical floodplain limits.

Mitigation: Structural Methods

The extent of the areas subject to flooding can be reduced by one or a combination of several methods. Structural methods include construction of culverts, storm sewers, and channels. These methods have been conveniently described as "conveyance-oriented" (2) -- they provide for the collection of stormwater runoff, followed by the immediate and rapid conveyance of the stormwater from the collection areas to the discharge point to minimize damage and disruption within the collection area. The Cheyenne Drainage Master Plan selected conveyance-oriented methods as the preferred approach to floodplain management for both the Clear Creek and Crow Creek basins.

A second structural method is the "storage-oriented" approach. This is the approach of detention or retention ponds. Stormwater is stored near the point of origin or at a suitable location along a waterway and then released slowly. The Drainage Master Plan considers a storage approach for Clear Creek, but does not select it as the preferred method.

Mitigation: Non-Structural Methods

Non-structural measures include public acquisition of floodplain property and legislative controls (zoning) to control development in flood-prone areas. Non-structural methods are not new, but have not been popular with local governments, particularly when large expenditure of public funds is involved. The orientation of non-structural methods is land-use planning rather than engineering. These methods do not in general reduce the areas subject to flooding. Instead, they attempt to reduce the damage to public and private property and the danger to people by removing people and property from the hazard.

The non-structural method most visible in Cheyenne is the Cheyenne Surface Water Management Ordinance (City Ordinance 3138). The Ordinance complies with the National Flood Insurance Program, which requires cooperation by local governments in order for the local governments to be eligible for benefits under the program. Under the Ordinance, the City restricts development in designated flood hazard areas and limits the placement of earth fill in areas designated as floodway.

Options for Clear Creek

The Cheyenne Drainage Master Plan discusses three options for reduction of flood losses in the Clear Creek Basin (shown with corresponding costs, 1988 dollars):

1. Construct various improvements (berms, culverts, storm drains) to rapidly convey floodwater through the basin. Raise the level of Southwest Drive. Construct grass-lined channels downstream from the Burlington Northern Railroad embankment. (\$6,130,000)
2. Construct a 50 acre-foot off-line detention west of Interstate Highway 25. Construct a few additional channel improvements. (\$19,428,000)
3. Floodplain management: A flood warning system, Public information, floodproofing, removal of some structures. (\$818,000)

The options were evaluated for the cost/benefit ratio (life cycle costs versus expected benefits) and non-economic considerations (safety, legal, recreational, economic). Based on these criteria, option 1 scored slightly higher than option 2, and is the selected option, primarily because of a large difference in estimated capital costs. The third option, the non-structural option, had the highest benefit/cost ratio, but was rejected because it depended on too many uncertainties. The option assumes strict and perpetual enforcement of local drainage policies. It does not resolve roadway overtopping (a major safety hazard), and relies on an early warning system which, is an inexact science. This option scores lowest on non-economic considerations.

It is recommended that these options be revisited. The estimated cost of a detention pond (option 2) appears somewhat high. Option 1 ranks slightly higher in hazard mitigation, about even in damage reduction, enhancement of property values, and recreation potential, and lower in environmental considerations. The overall score for option 1 is only slightly higher than that of option 2, despite the sizeable estimated cost difference, which, as noted above, should be re-evaluated. Furthermore, the analysis in the Plan does not adequately consider the effects on Crow Creek of increasing the peak flow in Clear Creek. These effects could be sufficient to reverse the selection of option 1, even if there is considerable difference in cost.

It is not recommended that non-structural measures be used as the solution to flooding problems in the Clear Creek basin, for the reasons given in the Plan, even though the present value of the estimated costs is substantially lower than the other options. The option's low score on non-economic factors indicates that it is not viable as a sole solution. However, some of these measures may be appropriate as a part of an overall program.

Options for Crow Creek

For the Crow Creek basin, the Drainage Master Plan considered three options (shown with corresponding costs):

1. Construct berms, grass-walled sloped channels, floodwalls, culverts, berms, and other channel and crossing improvements. (\$17,320,000)
2. Same as option 1, except use vertical concrete walls instead of grassed slopes for the channels. (\$20,800,000)
3. Non structural measures. (\$6,135,000)

The selected option is option 1. Option 2 costs are somewhat high, and benefits of hazard mitigation slightly lower. The main benefit of option 2 is that less right of way is required for vertical concrete walls than for sloped grassy sides of channels. The non-structural option was rejected, for the same reasons as for the Clear Creek basin.

No consideration was given to detention. The study ended at the Interstate 25 crossing of Crow Creek, and there is little available land along Crow Creek in the City for a detention facility.

In 1994, Francis E. Warren Air Force Base removed earth material from the area southwest of the interchange of I-25 and Happy Jack Road for use in a landfill cap on the Base. At that time, the City considered the possibility of developing a detention facility at the site. Such a plan is complicated by two factors:

1. Because of the volume of flood flows in Crow Creek, it is probably not feasible to construct a detention facility that will keep the creek within its banks during the 100-year event. It may be feasible to reduce peak flows by a reasonably sized detention facility. If the peak can be reduced enough to prevent flooding of the Ames Avenue underpass, it could be worthwhile. The benefits would extend to the Crow

Creek floodplain downstream of Ames Avenue, reducing the extent of the floodplain and reducing the scope and cost of required improvements for flood prevention.

2. The groundwater in the vicinity may be contaminated. If contaminants cannot be removed, provisions would have to be made in design of the detention facility to prevent transfer of groundwater contaminants to the surface water. Implementation of these provisions may limit the volume of a detention facility or increase its cost, or both.

Detention on Crow Creek is still under consideration by the City. In addition to reducing the scope of required channel improvements downstream, a well designed detention facility will provide sediment removal and a recreation resource. If the groundwater environment makes a detention facility unfeasible, flood hazard reduction should be pursued along the lines of the Drainage Master Plan.

Recommendations:

1. Clear Creek: It is recommended that the City of Cheyenne reevaluate the recommendations of the Drainage Master Plan for the Clear Creek basin to consider the costs and benefits of detention south of Interstate 80 and west of Interstate 25. This reevaluation should consider the effects on the study area in the Crow Creek basin of conveyance improvements in the Clear Creek basin.
2. Crow Creek: It is recommended that the City pursue the location of a water storage detention facility on F.E. Warren Air Force Base to reduce the impact of Crow Creek floods on the City of Cheyenne.

References

1. CH2M Hill, States West Water Resources, Eagle Consultants, and Intermountain Professional Services, City of Cheyenne Drainage Master Plan, (Crow Creek and Clear Creek Volumes), 1988.
2. Sheaffer, John R., Kenneth R. Wright, William C. Taggart, and Ruth M. Wright, Urban Storm Drainage Management, Marcel Dekker, Inc., 1982.
3. Walesh, Stuart G., Urban Surface Water Management, McGraw Hill, 1989.
4. American Society of Civil Engineers, Design and Construction of Urban Stormwater Management Systems, 1992.

APPENDIX D. CRITERIA FOR LOCATING MULTI-FAMILY HOUSING IN SINGLE FAMILY RESIDENTIAL NEIGHBORHOODS

- The building(s)' and accessory uses' architectural character, colors and detailing shall be similar to the majority of residences within 1/8 mile.
- The building(s) shall be no more than 3 stories tall.
- The structure shall be set back from the street a distance that is at least equal to the height of the structure or as directed by City standards, whichever is greater.
- The development has adequate off-street parking.
- No more than 40 parking spaces will be provided in any one parking lot.
- All parking lots will be screened from view along 80% of its length where it is adjacent to public streets. All parking lots will be screened from view along 100% of its length where it is adjacent to residential uses. the screen shall be opaque, a minimum of 36" tall and consist of all plant material (species with a dense branching pattern), a combination of berming and plant material or a low wall softened with plant material on the side of the wall that is visible.
- All parking lots will be set back a minimum of 15' from the street right-of-way, and 10' from a side or back property line.
- The maximum illumination of exterior areas will be as follows:

Parking Lot	0.5 footcandle
Walkway	0.5 footcandle
Building/mounted	0.35 footcandle

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- The traffic generated by the higher density development will not significantly change the character or level of safety of the streets in the neighborhood (as determined by the City Traffic Engineer).
 - Garages will be located to minimize their visual effect on the streetscape, and are encouraged to be oriented to the back of the lot or alley.
 - Secondary and service entrances will be located where they are convenient for residents and service vehicles, but are not visually detracting to neighboring properties and public streets.
 - Rooftop appurtenances and mechanical equipment will be integrated into the roofline or screened so as to appear as part of the building itself.
 - Trash enclosures will be designed to be compatible with the overall building architecture, engineered adequately so the enclosure doors do not sag with use over time, and located and screened from view from public streets and adjacent properties.