

ACCESS PLAN

US 14B/GARFIELD AVENUE
Pierre, SD

Prepared by
South Dakota Department of Transportation
City of Pierre

June, 2003

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Introduction

The City of Pierre and the South Dakota Department of Transportation have prepared this plan for future access to US 14B on the east side of Pierre. US 14B, also named Garfield Avenue, runs north and south and was originally built to provide an alternate route for truck traffic. Trucks using US 14B avoid a low-height railroad overpass, several tight turns, a steep grade, and driving through part of Pierre's central business district.

This access plan serves as part of local and state access management efforts. Access management is the process of providing safe, efficient ways of getting on and off our streets and highways. The concept "concentrates on restricting the number of direct accesses to major surface streets, providing reasonable indirect access, effectively designing driveways, and enforcing safe and efficient spacing and location of driveways and signals," according to Ron Giguere, former chairman of the Transportation Research Board Access Management Committee. "There are a variety of techniques available for achieving access control. These include geometric design considerations such as medians and channelized islands that prohibit certain turning movements, consolidation actions such as shared driveways and service roads, and others such as removal and relocation of existing access and the introduction of auxiliary lanes for left and right turns. If these types of improvements are implemented correctly, users can expect smoother vehicle flow, reduced delay and fewer crashes. These benefits equate to larger aggregate cost savings in travel time, fuel consumption, property damage and injuries. In addition, there is potential for expanding market area for local businesses, reducing vehicular emissions and fostering quicker emergency response."

Planning of access is particularly important for Garfield Avenue. Pierre is experiencing steady growth and advance identification of access points will help prevent future accidents and congestion.

This study includes the following work items:

- Inventory of existing access points
- Consideration of land ownership, zoning, planned infrastructure, access criteria and physical constraints
- Analysis of future transportation service
- Determination of future access points

Study Area

The area studied includes the US 14B right-of-way and adjacent properties. The study area extends from the intersection at SD 34/Wells Avenue on the south to the intersection with US 14 on the north, a distance of about 2.8 miles.

Along this section of Garfield Avenue, land uses range from agricultural to commercial and industrial. Some major adjacent uses include Wal-Mart, the Pierre Mall, automobile, equipment and manufactured home dealers, and other retailers. Much of the development

in the southern portion of the study area is well established. New commercial development is moving into the agricultural land in the northern portion of the study area.

The roadway is five lanes wide from the south end of the study area to approximately the intersection of Fourth Street/Airport Road. A two-lane rural roadway extends north from Fourth Street to US 14.

Existing Access Points

The existing access points were identified through field survey. They are listed in Table 1 by MRM (mile reference marker). The MRM system is used to locate features along all state highways. The access points listed in the table are also mapped on Figures 1 and 2.

Land Ownership

Land ownership adjacent to the roadway was reviewed to determine whether existing parcels are served by existing access points, or whether new access points may be needed. Land ownership records for this area are not fully mapped and are too voluminous to copy in this report.

Zoning

Projected land uses are shown on Map 3 in the appendix, provided by the City of Pierre. The map indicates that developed land in the southern portion of the study area is expected to retain its existing land uses. Undeveloped land in the northern portion of the study area is slated for commercial and industrial uses. This undeveloped land exists in large parcels with combined or well-spaced access points.

Planned Infrastructure

The South Dakota State Transportation Improvements Program (STIP) includes two minor construction projects on US 14B:

- Roadway lighting from Wells Avenue to Buffalo Street in 2003
- Milling and asphalt concrete resurfacing on the westbound ramp from US 14B to Wells Avenue and from 4th Street to US 14 in 2003.

SDDOT and the City of Pierre have also completed an environmental assessment for the extension of Elizabeth Street east of Garfield Avenue to connect to Northstar Avenue and serve a new development area. This planned improvement would also include an extension of Arthur Avenue from Elizabeth Street to connect to Garfield Avenue opposite of Harrison Avenue. Maps 1, 3, and 5 from the environmental assessment are included in the appendix to this report.

TABLE 1 - EXISTING ACCESS POINTS

US 14B -
PIERRE

NUMBER	MRM	+DISP	SIDE	NOTE
1	95.00	+0.00	BOTH	SD 34
2	95.01	+0.110	RIGHT	CENEX C-STORE
3	95.13	+0.000	BOTH	IRWIN STREET
4	95.23	+0.000	BOTH	HUMBOLDT STREET
5	95.23	+0.034	LEFT	HOPE REFORMED CHURCH
6	95.23	+0.051	RIGHT	COMBINED DRIVEWAY
7	95.23	+0.054	LEFT	HOPE REFORMED CHURCH
8	95.30	+0.000	LEFT	FRANKLIN STREET
9	95.30	+0.094	RIGHT	DOT REGION/AREA OFFICE
10	95.30	+0.159	RIGHT	LARIAT BOWL
11	95.30	+0.184	RIGHT	LARIAT BOWL
12	95.51	+0.000	LEFT	CAPITOL AVENUE
13	95.51	+0.000	RIGHT	MINI STORAGE
14	95.56	+0.000	RIGHT	BUSHFIELD DRIVE
15	95.73	+0.000	LEFT	BUFFALO STREET
16	95.73	+0.000	RIGHT	STANTON DRIVE
17	95.73	+0.076	RIGHT	STANTON DRIVE
18	95.75	+0.000	LEFT	SKYLINE DRIVE
19	95.75	+0.050	RIGHT	FIELD ENTRANCE
20	95.75	+0.052	LEFT	PIONEER OF PIERRE
21	95.75	+0.188	RIGHT	OAK STREET
22	96.05	+0.000	LEFT	FLAG MOUNTAIN DRIVE
23	96.05	+0.000	RIGHT	ELIZABETH STREET
24	96.05	+0.065	LEFT	WAL-MART
25	96.05	+0.164	RIGHT	PIERRE SPORTS CENTER
26	96.43	+0.000	LEFT	HARRISON AVENUE
27	96.43	+0.000	RIGHT	PIERRE SCHOOL DISTRICT BUILDING, STATE SHOPS & STORAGE
28	96.43	+0.024	LEFT	C-STORE
29	96.43	+0.032	RIGHT	COMMUNICATIONS CENTER
30	96.43	+0.065	RIGHT	BAS HOMES
31	96.54	+0.000	LEFT	PIERRE MALL
32	96.73	+0.000	RIGHT	AIRPORT ROAD
33	96.73	+0.000	LEFT	FOURTH STREET
34	96.73	+0.049	LEFT	RESIDENTIAL DRIVEWAY
35	96.73	+0.226	BOTH	FIELD ENTRANCE
36	97.00	+0.079	BOTH	FIELD ENTRANCE
37	97.00	+0.249	LEFT	FIELD ENTRANCE
38	97.00	+0.249	RIGHT	CONTRACTOR'S YARD
39	97.00	+0.381	RIGHT	FIELD ENTRANCE
40	97.00	+0.414	LEFT	FIELD ENTRANCE
41	97.81	+0.000	BOTH	US 14



Figure 1 - US 14B Layout
With Existing Access Points



Figure 2 - US 14B Layout
With Existing Access Points

This project would alter traffic patterns and change the character of the existing intersections at Garfield/Elizabeth and Garfield/Harrison. Both of these locations may see increased traffic and may be candidates for future improvements. Traffic signals may be warranted at either of these two locations in the future. The Harrison intersection already handles a fair volume of turning traffic and is located on fairly level terrain. The Elizabeth intersection is located on a significant grade on Garfield Avenue. SDDOT experience shows that traffic signals on significant grades can create more traffic safety problems than they solve because trucks have difficulty stopping for the signals, particularly during inclement weather.

The intersection of Garfield/4th may also become a candidate for traffic signalization in the future. No signal project is planned for any of these locations at this time.

Access Criteria

South Dakota administrative rules 70:09 provide criteria for spacing of new access points on the State-administered highway system. Access points determined by a detailed planning effort, like this one, take precedence over the criteria contained in the rules. The criteria, however, can serve as useful guidelines for planning.

The access criteria indicate that new access points should be spaced no closer than 660' apart, between Wells Avenue and 4th Street. North of 4th Street, new access points should be no closer than 1000'. Traffic signals should be no closer than ¼ mile apart. Existing access points have grandfathered approval under the rules for their existing uses. When the uses change, the access points and spacing need to be re-evaluated.

Physical Constraints

The study area lies in the bluffs of the Missouri River, typified by deeply-cut draws between hills, poor soils and frequent slide areas. There is an overall elevation gain of over 300' within the study area. Several deep drainages abut the highway in the undeveloped areas. These gullies affect how the land might be developed and the feasible locations for access points.

Future Transportation Service

Garfield Avenue is expected to continue to play a significant role in providing regional transportation service in the future. There are currently two competing concepts for that role:

- Garfield Avenue will continue to carry the US 14B designation. As such, it will need to provide service to a combination of traffic demands, including interstate passenger and freight and local circulation. In this case, Garfield will need to provide high-end function with minimum traffic delay.
- Garfield Avenue will be a local major street and through-traffic delay will be less of an issue. Currently, the City of Pierre has identified a future through-

traffic route on Dry Run Gulch Road to serve interstate passenger and freight functions.

No project commitment or funding has been assigned to the Dry Run Gulch Road concept. Until this, or some other alternative, comes to fruition, Garfield Avenue will need to continue providing through-traffic service.

Future Access Points

The location of future access points was determined by comparing property boundaries, planned zoning, planned infrastructure, physical constraints, existing access points, and SDDOT access spacing criteria. The goals of the analysis were:

- to maintain existing access points for existing property uses, and
- to provide access to undeveloped parcels while maintaining the safety and efficiency of the transportation facility.

The planned access is shown on Table 2. Note that many of these access points do not meet current access standards, but are allowed because they predate current access rules. If properties adjacent to the roadway redevelop, they are subject to being re-evaluated.

Spacing of the planned access points north of 4th Street have been constrained by property ownership patterns. If properties are combined, access spacing may be increased.

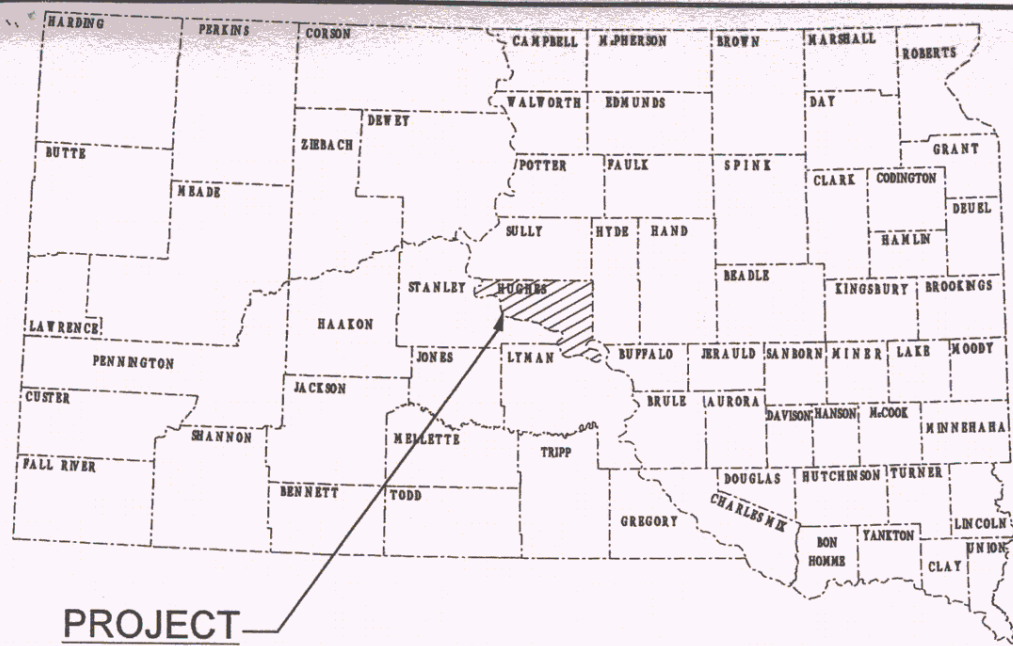
TABLE 2 - PLANNED ACCESS POINTS
US 14B - PIERRE

NUMBER	MRM	+DISP	SIDE	NOTE	PLANNED ACCESS ACTION
1	95.00	+0.00	BOTH	SD 34	MAINTAIN EXISTING STREET INTERSECTION
2	95.01	+1.10	RIGHT	CENEX C-STORE	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
3	95.13	+0.00	BOTH	IRWIN STREET	MAINTAIN EXISTING STREET INTERSECTION
4	95.23	+0.00	BOTH	HUMBOLDT STREET	MAINTAIN EXISTING STREET INTERSECTION
5	95.23	+0.034	LEFT	HOPE REFORMED CHURCH	COMBINE WITH ACCESS 7 DURING RECONSTRUCTION OR REDEVELOPMENT
6	95.23	+0.051	RIGHT	COMBINED DRIVEWAY	MOVE SOUTH TO MIDBLOCK WITH RECONSTRUCTION OR REDEVELOPMENT
7	95.23	+0.054	LEFT	HOPE REFORMED CHURCH	COMBINE WITH ACCESS 5 DURING RECONSTRUCTION OR REDEVELOPMENT
8	95.30	+0.000	LEFT	FRANKLIN STREET	MAINTAIN EXISTING STREET INTERSECTION
9	95.30	+0.094	RIGHT	DOT REGION/AREA OFFICE	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
10	95.30	+0.159	RIGHT	LARIAT BOWL	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
11	95.30	+0.184	RIGHT	LARIAT BOWL	CONSOLIDATE WITH PROPERTY TO NORTH WITH RECONSTRUCTION OR REDEVELOPMENT
12	95.51	+0.000	LEFT	CAPITOL AVENUE	MAINTAIN EXISTING STREET INTERSECTION
13	95.51	+0.000	RIGHT	MINI STORAGE	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
14	95.56	+0.000	RIGHT	BUSHFIELD DRIVE	MAINTAIN EXISTING STREET INTERSECTION
15	95.73	+0.000	LEFT	BUFFALO STREET	MAINTAIN EXISTING STREET INTERSECTION
16	95.73	+0.000	RIGHT	STANTON DRIVE	MAINTAIN EXISTING STREET INTERSECTION
17	95.73	+0.076	RIGHT	STANTON DRIVE	MAINTAIN EXISTING STREET INTERSECTION
18	95.75	+0.000	LEFT	SKYLINE DRIVE	MAINTAIN EXISTING STREET INTERSECTION
19	95.75	+0.050	RIGHT	FIELD ENTRANCE	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS, ACCESS TO SERVE AREA FROM STANTON TO OAK
20	95.75	+0.052	LEFT	PIONEER OF PIERRE	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
21	95.75	+0.188	RIGHT	OAK STREET	MAINTAIN EXISTING STREET INTERSECTION
22	96.05	+0.000	LEFT	FLAG MOUNTAIN DRIVE	MAINTAIN EXISTING STREET INTERSECTION
23	96.05	+0.000	RIGHT	ELIZABETH STREET	MAINTAIN EXISTING STREET INTERSECTION
24	96.05	+0.065	LEFT	WAL-MART	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS, REDIRECT ACCESS TO ELIZABETH STREET
25	96.05	+0.164	RIGHT	PIERRE SPORTS CENTER	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
26	96.43	+0.000	LEFT	HARRISON AVENUE	MAINTAIN EXISTING STREET INTERSECTION

27	96.43	+0.00	RIGHT	PIERRE SCHOOL AND STATE	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS OR ARTHUR AVENUE IS CONNECTED
28	96.43	+0.024	LEFT	C-STORE	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
29	96.43	+0.032	RIGHT	COMMUNICATIONS CENTER	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS, CONSIDER CONSOLIDATION WITH 30
30	96.43	+0.065	RIGHT	BAS HOMES	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS, CONSIDER CONSOLIDATION WITH 29
31	96.54	+0.000	LEFT	PIERRE MALL	MAINTAIN EXISTING DRIVEWAY UNTIL PROPERTY REDEVELOPS
31A	96.54	+0.000	RIGHT	(PROPOSED NEW ACCESS POINT)	POTENTIAL SITE FOR COMBINED ACCESS TO SERVE PROPERTIES TO NORTH AND SOUTH
32	96.73	+0.000	RIGHT	AIRPORT ROAD	MAINTAIN EXISTING STREET INTERSECTION
33	96.73	+0.000	LEFT	FOURTH STREET	MAINTAIN EXISTING STREET INTERSECTION
34	96.73	+0.049	LEFT	RESIDENTIAL DRIVEWAY	MOVE TO '+.095 TO SERVE FUTURE DEVELOPMENT
34A	96.73	+0.095	BOTH	(PROPOSED NEW ACCESS POINT)	PLANNED POINT TO SERVE FUTURE DEVELOPMENT
35	96.73	+0.226	BOTH	FIELD ENTRANCE	SERVE ADJACENT DEVELOPMENT AT THIS LOCATION
36	97.00	+0.079	BOTH	FIELD ENTRANCE	SERVE ADJACENT DEVELOPMENT AT THIS LOCATION
37	97.00	+0.249	LEFT	FIELD ENTRANCE	SERVE ADJACENT DEVELOPMENT AT THIS LOCATION
38	97.00	+0.249	RIGHT	CONTRACTOR'S YARD	SERVE ADJACENT DEVELOPMENT AT THIS LOCATION
39	97.00	+0.381	RIGHT	FIELD ENTRANCE	SERVE ADJACENT DEVELOPMENT AT THIS LOCATION
40	97.00	+0.414	LEFT	FIELD ENTRANCE	MOVE WITH DEVELOPMENT TO PROVIDE ADEQUATE SPACING FROM ACCESS 39
40A	97.00	+0.600	BOTH	(PROPOSED NEW ACCESS POINT)	SERVE ADJACENT DEVELOPMENT AT THIS NEW LOCATION, LOCATION MAY BE ADJUSTED BUT NO CLOSER THAN 500' FROM US14 INTERSECTION RADIUS OR NEAREST DRIVEWAY TO THE SOUTH
41	97.81	+0.000	BOTH	US 14	MAINTAIN EXISTING STREET INTERSECTION

APPENDIX

Maps



STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION
HUGHES COUNTY

PROJECT NO. P 5262(3)

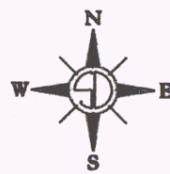
**APPROX GRADING, CURB & GUTTER
WATER MAIN, INTERIM SURFACING
PCEMS 6280**

Map 1: Project Location

INDEX OF SHEETS

Section A	Est. of Quantities
Section B	Grading Plans
Section C	Traffic Control Plans
Section D	Erosion Control Plans
Section F	Surfacing Plans
Section X	Cross Sections

PROJECT



BEGIN PROJECT

END PROJECT

Elizabeth Street/Northstar Avenue
 Gross length 3110 Feet 0.589 Miles
 Length of exceptions 110 Feet 0.02 Miles
 Net length 3000 Feet 0.569 Miles
 Length of grading 3000 Feet 0.569 Miles

Arthur Avenue
 Gross length 1486 Feet 0.281 Miles
 Length of exceptions 0 Feet 0 Miles
 Net length 1486 Feet 0.281 Miles
 Length of grading 1486 Feet 0.281 Miles

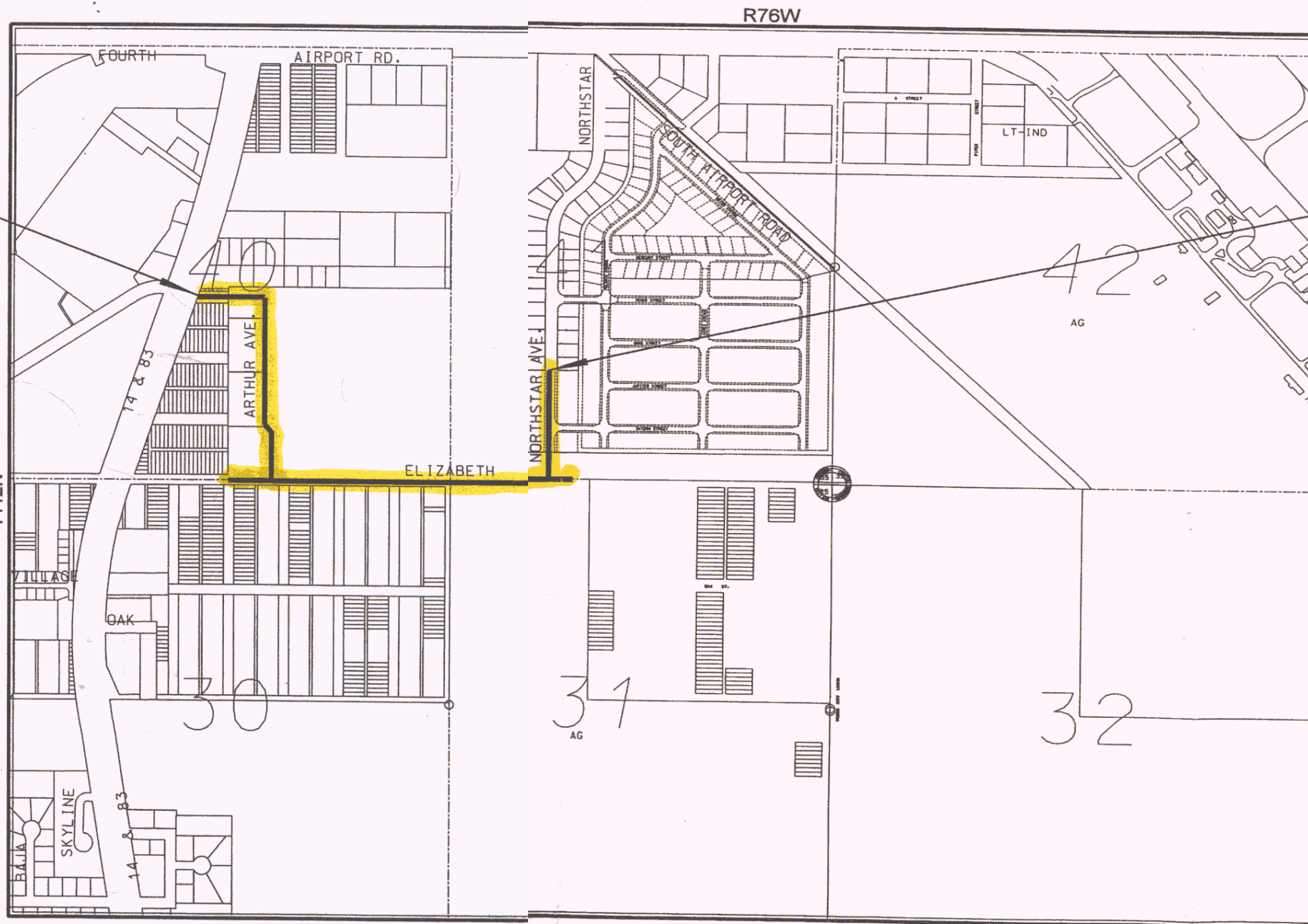
Storm Water Permit
 Major Stream: Missouri River
 Disturbed Area: 21.68 Acres

SCALES

PLAN	1" = 60'
PROFILE	HORIZONTAL = 1" = 60'
	VERTICAL = 1" = 10'
CROSS	HORIZONTAL = 1" = 40'
SECTIONS	VERTICAL = 1" = 20'

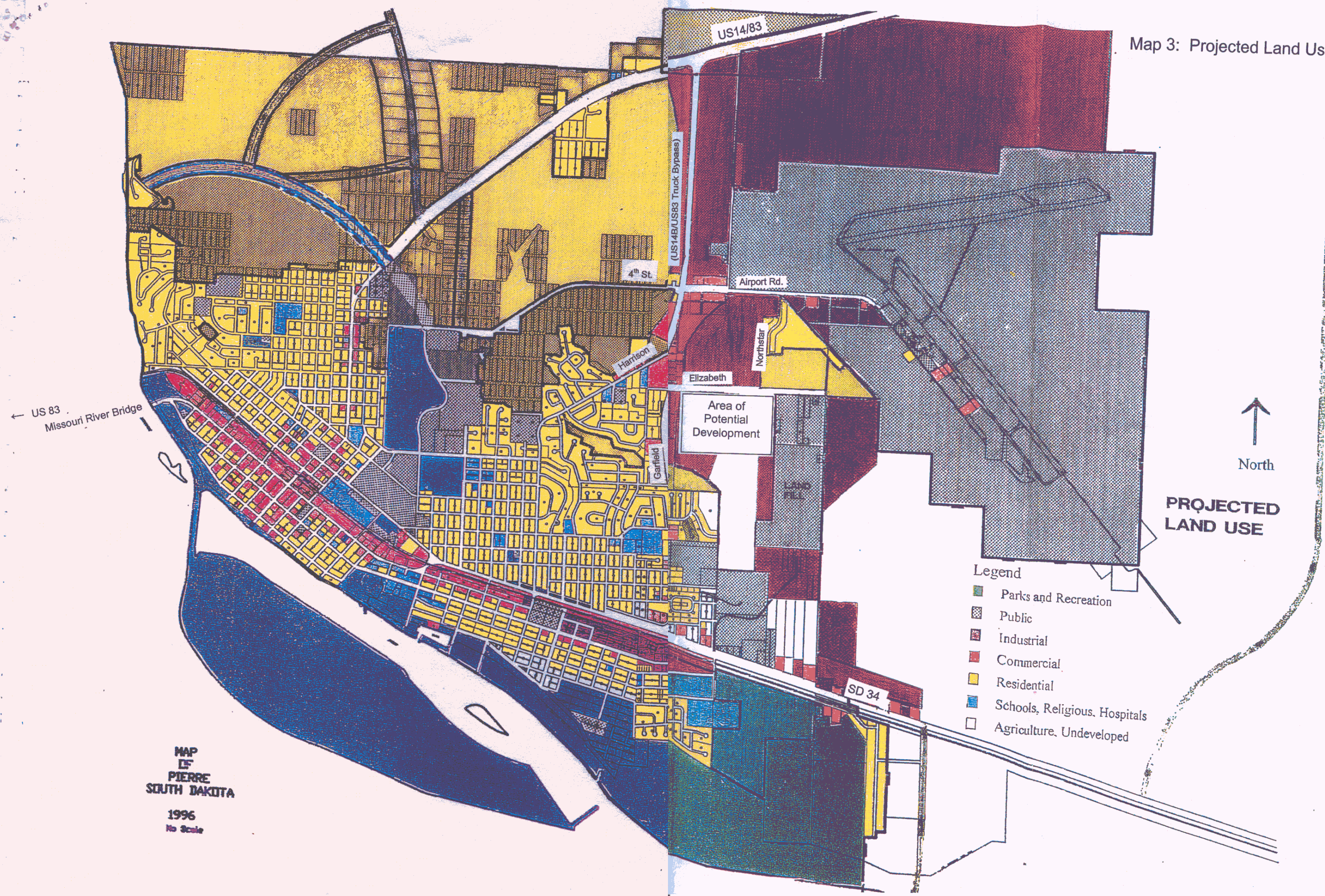
LEGEND

STATE AND NATIONAL LINE	—————
COUNTY LINE	—————
SECTION LINE	—————
QUARTER LINE	—————
SIXTEENTH LINE	—————
PROPERTY LINE	—————
SURVEY LINE	—————
ROW LINE	—————
WORK LIMITS	—————



GRADING PLANS	
SURVEY BY	Broz Engineering, Inc. Pierre, SD
PLANS BY	Broz Engineering, Inc. Pierre, SD

Map 3: Projected Land Use

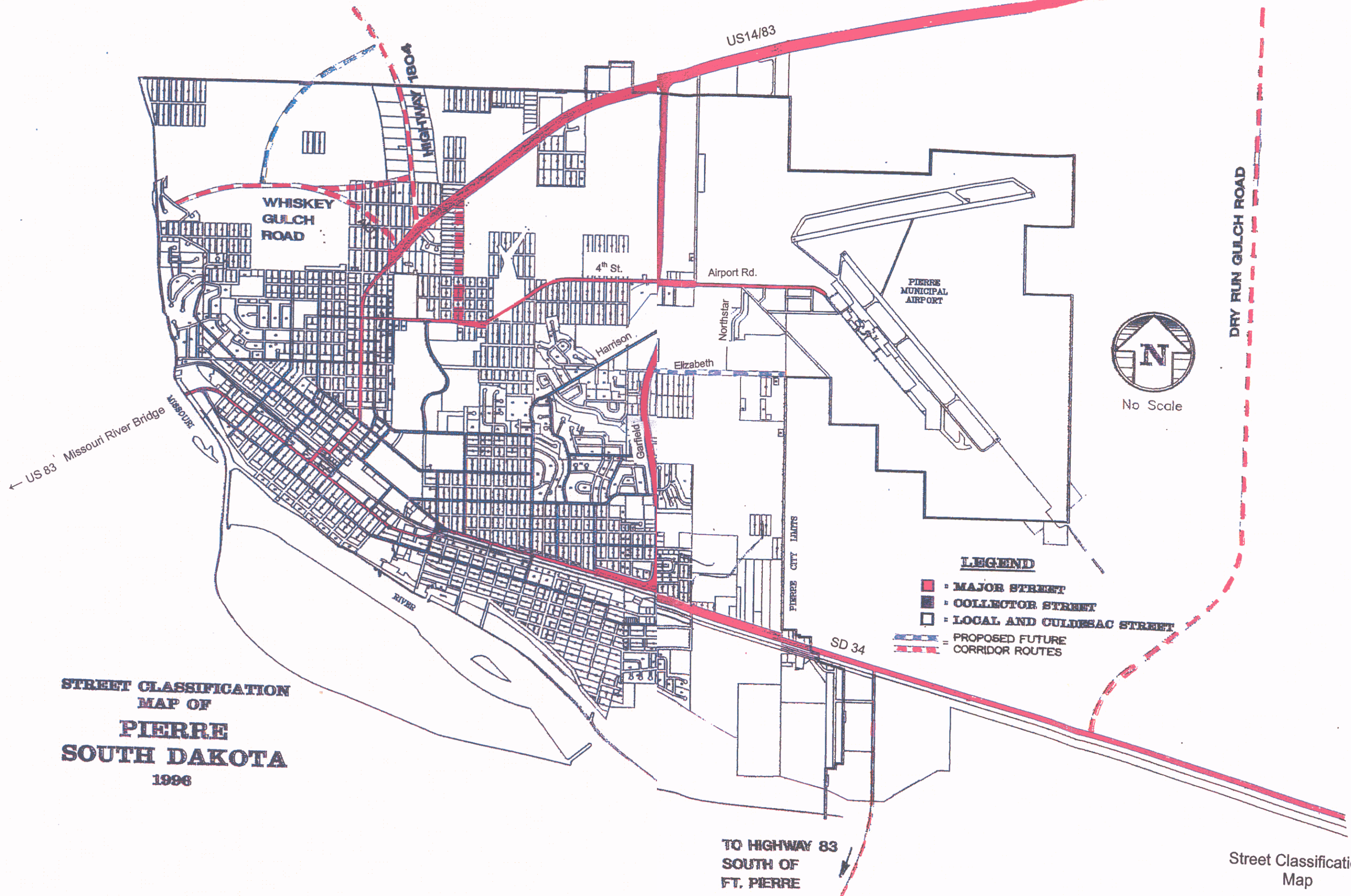


MAP
OF
PIERRE
SOUTH DAKOTA
1996
No Scale

- Legend
- Parks and Recreation
 - Public
 - Industrial
 - Commercial
 - Residential
 - Schools, Religious, Hospitals
 - Agriculture, Undeveloped



PROJECTED
LAND USE



**STREET CLASSIFICATION
MAP OF
PIERRE
SOUTH DAKOTA
1996**

Street Classification
Map

TO HIGHWAY 83
SOUTH OF
FT. PIERRE

