American Fork I-15/Sam White Lane Interchange
Park and Ride Lot

September 2001

Purpose and Need

Introduction

The purpose and need of the proposed park and ride lot is required as part of the NEPA approval process. This section describes the purpose and need of the park and ride lot and explains why it was selected over the other sites considered.

The City of American Fork in cooperation with the Utah Department of Transportation Region 3, is preparing a Park and Ride Lot Plan and NEPA Categorical Exclusion (CadEx). The City and UDOT have retained The Sear-Brown Group as the prime consultant and BIO/WEST as the subconsultant to assist them. At this time, American Fork City has selected a site for the Park and Ride lot and is gathering information for preparation of the CadEx.

Purpose and Need

The purpose of dedicated park and ride lot is to provide a permanent parking location for commuters who wish to carpool or ride the bus to and from American Fork. The existing 120 stall park and ride lot owned by UDOT on the northwest side of the American Fork Main Street interchange is near capacity. It is not accessible by UTA buses. Several temporary park and ride lots are located along State Street in American Fork and Lehi. For example, approximately 100 vehicles park in the Smith's and Kmart lots north of American Fork Main Street. The owners of these stores currently allow these vehicles to park in their lots at their discretion. These are temporary sites and they may be restricted in the future depending on development or concerns by the owners.

The Mountainland Association of Governments conducted a park and ride needs study in 1996 that showed a shortage of 176 dedicated stalls in the American Fork area in 1990. It is projected that the shortage will grow to 295 stalls in 2015. Additional parking demand will result when Commuter Rail service to Salt Lake City is implemented resulting in a need for several new parking stalls by the year 2015. The study map shows the existing and proposed park and ride lots. The majority of current park and ride lots are located near the mouths of canyons or adjacent to I-15 freeway interchanges to allow cars and buses to quickly access I-15 from the lots. The lots are spaced along I-15 to be central to and to provide full coverage of the majority of the population.

The Mountainland study identified other benefits of the park and ride lots. They improve mobility for commuters who travel to and from the County and within the County. They allow for Express buses and car pools to have a central location to meet or to catch the bus. The result for the County is less traffic congestion on I-15 and a reduction in the number of vehicle miles driven each day, which improves air quality.

The park and ride lot has potential for intermodal opportunities for passengers, bus and pedestrians, bicycles, commuter rail and ADA. It will provide an alternate commuter parking area to nearby sites that are being shared with commercial owners (Smith's, Walmart) and the parking is not dedicated to the use of commuter parking. The Park and Ride lot will integrate bus transit (Utah Transit Authority's local and express bus service), park and ride facilities, kiss-n-ride drop-off facilities, and possibly future commuter rail service between Provo, Salt Lake City, and Ogden.

The Sear-Brown Group conducted a study to determine the most appropriate site in American Fork City for a new Park and Ride Lot that is compatible with the existing and future roadway network, transit system, and the future Commuter Rail system. Sear-Brown coordinated the study process with the Park and Ride Lot Advisory Committee including representatives from American Fork City (the planning commission, City Engineer and City Planner), UDOT and the UTA. The preferred location chosen by the advisory committee was presented to the Planning Commission for their approval.

The Northpointe site, is adjacent to the railroad tracks west of I-15 on 1500 South near the new Sam White Lane/Pleasant Grove/Lindon interchange. It is directly south of the Utah Valley Auto Mall and is part of the Northpointe business park Phase II currently under design and development. The developers are willing to integrate the design of the park and ride lot into their street system, trails system and land subdivision. There are two other nearby business parks that are similar in design that have been quite successful. The park and ride lot would benefit the development by allowing employees to travel to the site on UTA buses and then walk to the individual businesses within the park.

As can be seen in the attached project location map/aerial photo the project site was shifted to the south to avoid some possible wetlands on the undisturbed property. An attempt was also made to locate the project on a site with only one property owner involved. The site as currently proposed is all located on property owned by the Bromley family and being developed as part of the Northpointe Business Park. The site needs to be next to the railroad to allow for future use by Commuter Rail as well as the express buses and carpools. The site is located on the east side of the tracks because it is closer to the freeway interchanges and for safety issues. It is not desirable for buses to cross an active at-grade rail crossing several times a day.

Selection Criteria

The following criteria were applied to both sites and the Northpointe site was found to be superior based on a ranking process that included the following:

Table 1 Ranking Criteria and Site Comparison	Site Comparison	
	Northpointe	500 East
1. Connections to I-15 and Street Network	*	-
2. Central to Population/Ridership Existing and Future	*	-
3. UTA Bus Operational Suitability	E	E
4. Railroad Operational Suitability	E	E
5. Safety/Policeability	-	*
6. Ability to Expand Lot Size	*	-
7. Traffic Congestion/Level of Service Comparison	*	-
8. Full Services (nearby gas station etc.)	-	*
9. Environmental Impacts (Including Wetlands and Air Quality)	E	E
10. Property Availability/Cost	*	-
11. Ability to Share Parking with Adjacent Land Uses	*	-

***=This site was superior for the criteria**
E=Both of the sites were equal

The two sites considered were found to be roughly equal for most of the criteria. The three criteria, which most favored the Northpointe site, were:

- *2. Central to Population/Ridership Existing and Future,*
- *7: Traffic Congestion/Level of Service Comparison, and*
- *10: Property Availabiltiy/Cost.*

The Northpointe site is more central to the area population. The Northpointe property value as quoted by the developer is much less than the 500 East site because the area is less developed and is located 0.77 miles from the existing interchange. The 500 East site is approximately 0.4 miles from the existing interchange, which increases attractiveness to businesses and also increases its cost. The developer of the 500 East site has already identified a customer for the property. The existing and future traffic congestion at the 500 East site is much greater than the Northpointe site.

No alternatives were considered on the west side of the railroad tracks as this would place the park and ride lot away from the freeway and the population centers and would require a longer travel time to access. There is the additional safety concern of crossing active railroad tracks. Buses must stop and open a door to listen for an approaching train when crossing the tracks. This would delay buses and cars accessing the park and ride lot.

Traffic Impacts of the Park and Ride Lot

In order to determine the effects that the proposed park and ride would have on the adjacent I-15 interchanges, a level of service analysis was conducted at the intersections on located on the interchanges. The analysis conducted was based on procedures outlined in the Highway Capacity Manual (HCM) published by the Transportation Research

Board (TRB). This type of analysis assigns a letter value based on average delay experienced by vehicles to indicate the level of service (LOS) of the intersection. The letter values assigned range from A to F, with A being the best. A summary and definitions of the different levels of service are given in Table 2 for signalized and unsignalized intersections.

Table 2
Level of Service Definition

LOS	Signalized Intersection Delay (sec/veh)	Unsignalized Intersection Delay (sec/veh)	Definition
A	≤ 5.0	≤ 5.0	Favorable progression
B	>5.0 and ≤15.0	>5.0 and ≤10.0	good progression
C	>15.0 and ≤25.0	>10.0 and ≤20.0	fair progression
D	>25.0 and ≤40.0	>20.0 and ≤30.0	noticeable congestion
E	>40.0 and ≤60.0	>30.0 and ≤45.0	limit of acceptable delay
F	>60	>45	unacceptable

Source: *Highway Capacity Manual*, Transportation Research Board, 1992

The Interchange Access Request Report prepared in 1998 for the proposed Pleasant Grove Interchange was consulted for this analysis. The additional trips expected from the park and ride lots were added to the four intersections at the two interchanges. The number of trips expected by the park and ride lot is based on its size. It is planned to accommodate 500 cars when fully built out. The number of trips expected assuming little vehicle turn over occurs has been estimated assuming 80% occupancy in year 2020. There would be approximately 800 vehicle trips per day expected in the year 2020 with 60% of the trips or 480 trips per day through the new I-15 interchange and the remaining 40% through the 500 East interchange or 320 trips per day. The new interchange is estimated to operate at Level of Service (LOS) C in 2020 including the park and ride lot traffic. The 500 East interchange is estimated to operate at Level of Service (LOS) F in 2020 with or without the park and ride lot traffic.

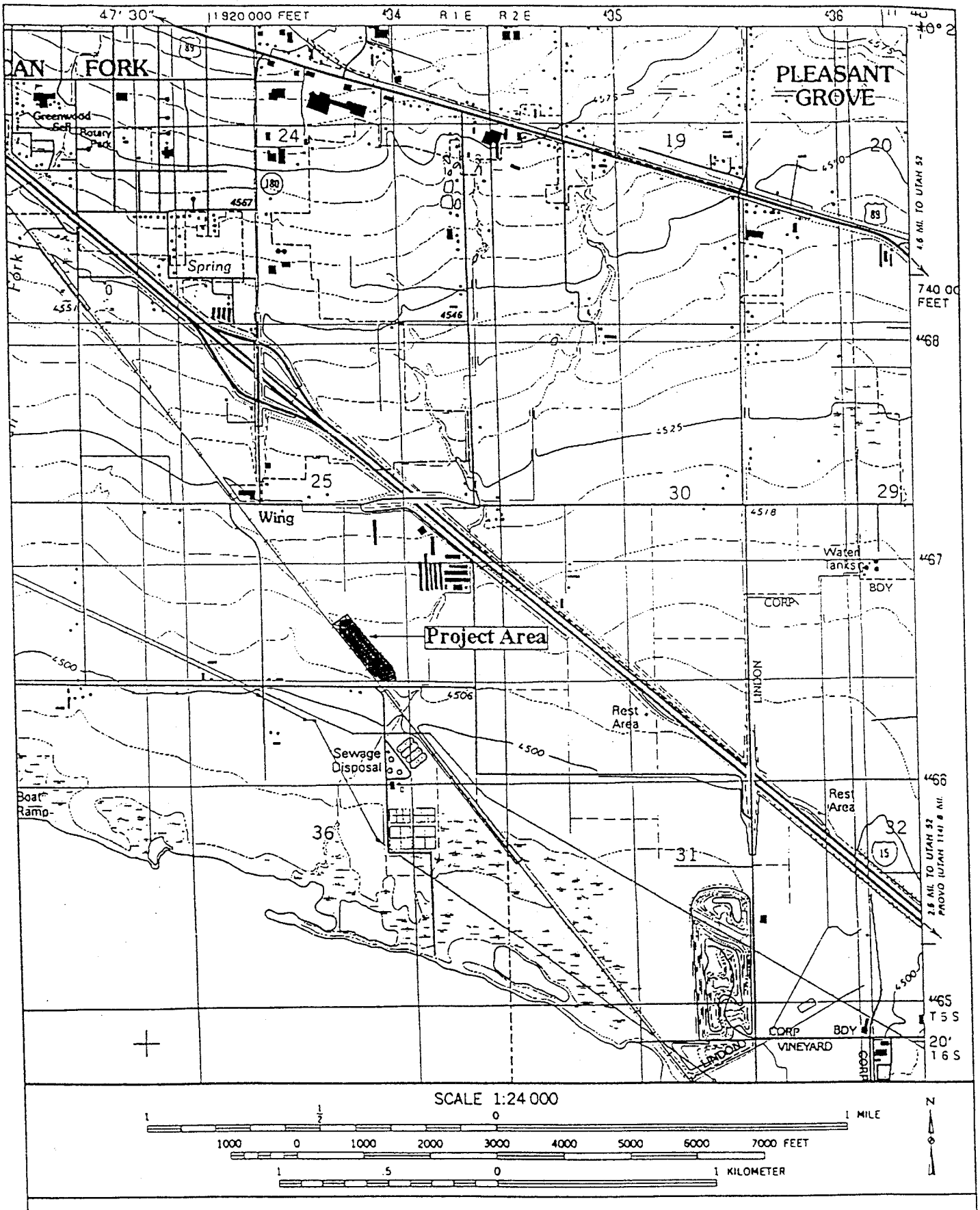
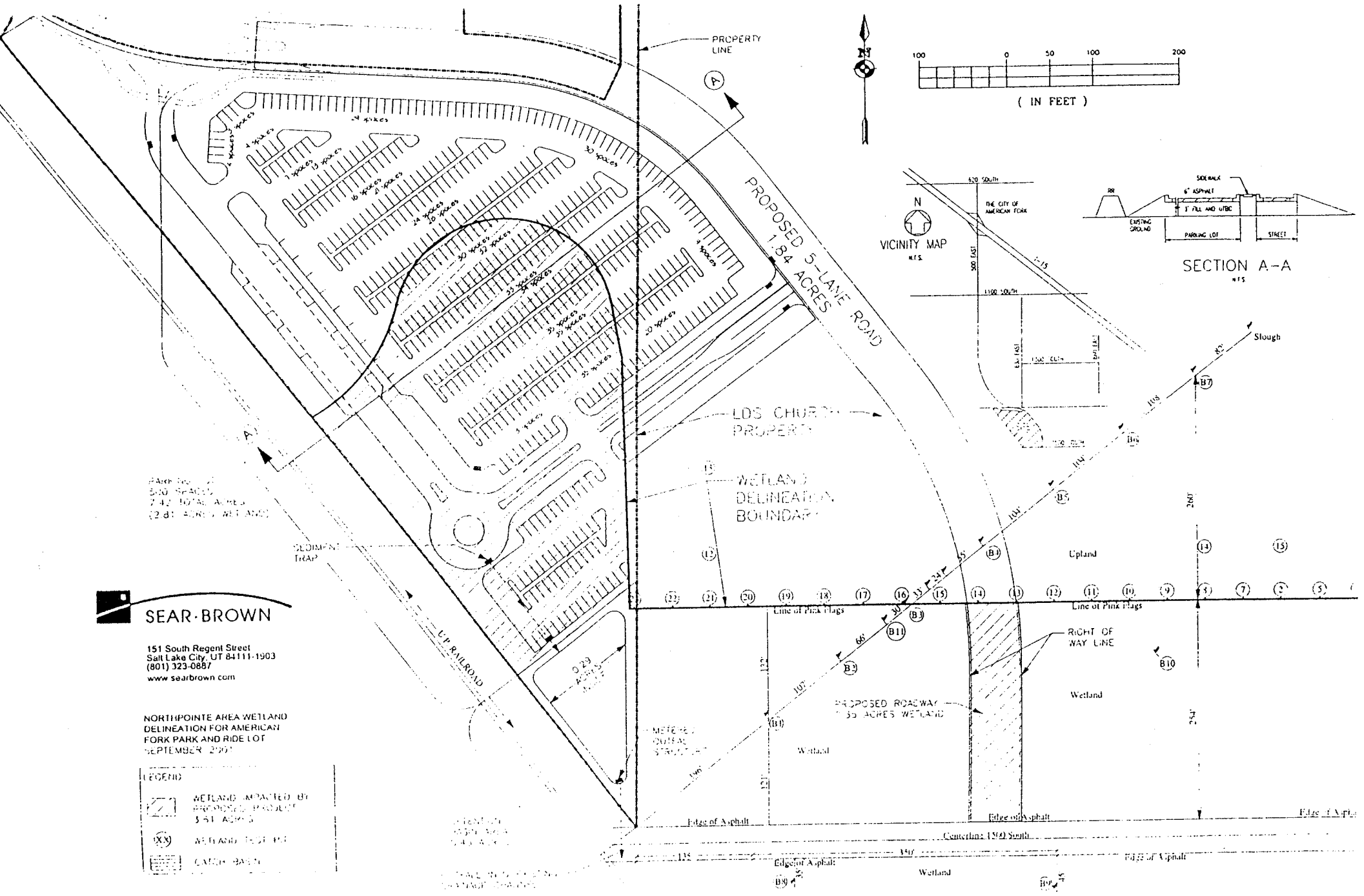


Figure 1. Location of the proposed Northpointe Park and Ride Lot. Taken from USGS 7.5' Quadrangle Pelican Point, Utah (1992).


PROPERTY LINE
PROPOSED 5-LANE ROAD
1.84 ACRES
LDS CHURCH PROPERTY
WETLAND DELINEATION BOUNDARY
SEDIMENT TRAP
U.P. RAILROAD
0.23 ACRES
PROPOSED ROADWAY
.55 ACRES WETLAND
RIGHT OF WAY LINE
Upland
Wetland
Slough
Line of Pink Flags
Edge of Asphalt
Centerline 1500 South
N
100 0 50 100 200
(IN FEET)
VICINITY MAP
N.T.S.
SECTION A-A
N.T.S.
SIDEWALK
6" ASPHALT
3" FILL AND UTBC
EXISTING GROUND
PARKING LOT
STREET
SEAR·BROWN
151 South Regent Street
Salt Lake City, UT 84111-1903
(801) 323-0887
www.searbrown.com
NORTHPOINTE AREA WETLAND DELINEATION FOR AMERICAN FORK PARK AND RIDE LOT
SEPTEMBER 2001
LEGEND
WETLAND IMPACTED BY PROPOSED ROADWAY
.55 ACRES
WETLAND TEST PIT
CATCH BASIN

American Fork Park and Ride Location Map