

## RIVER HEIGHTS CITY GENERAL PLAN INTRODUCTION

Utah state law requires that cities prepare a general plan for the "present and future needs of the municipality". This plan is the official statement that describes overall goals and strategies for the future development of the City. This plan (previously called a Master Plan) functions within a community to:

- ◆ Improve the physical environment of the community as a setting for human activity. This purpose is in accord with the broad objective of local government to promote the health, safety, order, convenience, prosperity, and general welfare of the citizens.
- ◆ Promote the public interest of the community at large, rather than the interest of individuals or special interest groups within the community. By adopting and following a general guideline it will help prevent arbitrary, capricious, biased actions. The contributions of the plan to democratic responsible government help safeguard the public interest.
- ◆ Facilitate the democratic determination and implementation of community policies on physical development. A general plan is a policy instrument. It is a declaration of long range goals. It places the responsibility for determining policies on the elected officials and provides an opportunity for citizen participation under the democratic process.
- ◆ Inject long range consideration into short range actions. It provides for coordination through time, to attempt to make sure that today's decisions lead to tomorrow's goals. The use of forecasts and the establishment of long range goals are significant features of the general plan.
- ◆ Bring professional and technical knowledge to bear on the making of political decisions concerning the physical development of the city. This is intended to promote wiser decision making, to achieve informed, constructive government. The importance of a general plan as a policy document and a general guide to the future of River Heights should be emphasized. It should be considered as a compass. It sets the direction which the City should take but it is not static. Future events may necessitate a change in course. It should be reevaluated on a regular basis and updated as it becomes necessary to do so to guarantee its relevancy.

This document has four sections:

1. Land Use
2. Transportation
3. Infrastructure/City Utilities
4. Affordable Housing

Each section contains a description of the current situation and conditions, applicable back ground information, and recommendations for adoption by the Planning Commission and the City Council.

Once adopted this becomes the plan for the future development of River Heights. The Zoning and other ordinances are then changed, as needed, to comply with and implement the provisions of this adopted plan. The ordinances then become the instrument by which these policies are put into effect. These two planning documents are interwoven.

Planning is more than the production of a general plan and regulatory ordinances. It is an ongoing process. Therefore, after this plan is adopted it will be reassessed on a regular basis. This document can change over time.

Planning is dynamic. The initial adoption of the General Plan and its elements is the beginning of the planning process. A periodic reevaluation process will be used to maintain the validity of the goals and

policies of the plan.

Amending the plan can take two forms. Most amendments will come through the Planning Commission. At periodic intervals they should review the plan and determine if it still coincides with existing conditions and attitudes. If it is determined that it does not meet the needs of the city at some future time, after appropriate public input, it should be changed.

A second method of amending the general plan is by written application submitted by an individual requesting a consideration for a change. In both of the above referenced methods for changing the general plan, the Planning Commission should hold a public hearing, consider the data, and make a recommendation to the City Council. The Council conducts a final review and after a second public hearing, enacts needed changes and takes final action.

## BACKGROUND

Incorporated as a Town in 1934 and becoming a City in 1968, River Heights is one of the youngest communities in Cache County. Originally pasture land, it started slowly and evolved into a community of well kept homes. It is on the east bench lands of Cache Valley, a remnant of ancient Lake Bonneville. The Bear River range of the Wasatch Mountains is the east backdrop of the city. Providence City is to the south and Logan City is to the north and west.

The first settlers of the area came in the 1880s and built homes in the area between Providence and Logan where land was inexpensive. Named "Dry Town" for obvious reasons, new inhabitants arrived slowly and it was incorporated into a Town only when it became necessary to receive a grant from the federal government to drill an irrigation well to augment scarce water supplies during the drought of the 1930s.

River Heights is unique among most other Cache communities. It is completely surrounded by either other cities or physical barriers that will limit its long term growth. While there still remains vacant land that can be developed, it is limited. The community is totally residential with only limited possibilities of future commercial development.

### Population

Table 1 shows the historical population of River Heights:

| year       | 1950 | 1960 | 1970 | 1980 | 1990 | 1995 |
|------------|------|------|------|------|------|------|
| population | 468  | 880  | 1088 | 1211 | 1274 | 1320 |

Table 1  
Historical Population

### Projected Population

While Cache County has experienced about 2% annual growth rate since 1950, River Heights has shown a rate of less than 1.5 percent. Growth for the ten year period 1980 to 1990 was less than one/half percent per year and for the period 1990 to 1995 it has continued at the same rate. That rate of growth could

change dramatically. As the southeast bench area of Logan continues to fill up, pressure will build for new subdivision and homes in River Heights. Another factor that could hasten growth is if the irrigation company ceases to be able to deliver water to the area east of town. Long time farmers would then be more willing to sell land that could then be developed. The following projections are from the Cache County Planning office and may be very conservative.

| year       | 2000 | 2010 | 2020 |
|------------|------|------|------|
| population | 1413 | 1596 | 1850 |

Table 2  
Population Projections

Preliminary data suggest that the City has already reached a population of 1400 in early 1997.

There are about 400 acres of land currently undeveloped that are either inside the current city boundaries or inside the annexation declaration policy area. This land represents the growth limits of the city. Assuming three lots per acre, there could be approximately 1200 additional homes in River Heights (for a total of 1650), compared to the current number of 450. This population projection would add approximately 4,000 more for a total of 5,320 persons. These numbers are estimates based on available land and current zoning and building trends.

The above estimate is especially useful in planning for infrastructure needs.

Median household income in River Heights is \$40,603 (all figures are 1990, the latest year for which comparable data are available). That figure is the highest in the county and compares to a county median of \$26,949.

## COMMUNITY SURVEY

In the spring of 1996, the Planning and Zoning Commission, in conjunction with the Extension Service at Utah State University, conducted a survey of River Heights citizens on a number of planning issues in the City. Because it covered 85% of the households in the city and because of the questions asked, it is an indispensable tool in understanding the mood of the citizenry of River Heights. A copy of the survey is included in appendix A. This general plan is based upon that community survey. The survey results are summarized here.

- ◆ An overwhelming majority of citizens want River Heights to remain a community of single family residences.
- ◆ 99% want single family housing and 91% are against multi-family housing of three or more units.
- ◆ While very few expressed a desire for no growth, 85% wanted growth to proceed at a rate of 25% or less over the next ten years.
- ◆ Planned Unit Developments were favored by only 30% of the respondents.

- ◆ 88% want more sidewalks installed (presumably in existing areas of the city) and they say that the city should share in the cost of doing so.
- ◆ More recreation programs are wanted by 80%.
- ◆ Current park land should be developed and it appears that citizens favor the acquisition of more park space. Parkland development should favor activities from playground equipment to soccer and ball fields to tennis and basketball courts.
- ◆ Majorities favor annexing more land into the city limits for open spaces, buffer zones between cities and for residential development but not for commercial development (84% say no).
- ◆ 87% are in favor of allowing home based business activities in residential neighborhoods.
- ◆ River Heights should not have a commercial zone in the city (76%).
- ◆ Except for some concern about vandalism and stray pets, people of River Heights are satisfied with their lifestyle and surroundings in the community.
- ◆ 64% of the residents in River Heights favor a tax if necessary to support the Library
- ◆ There is considerable support for projects to install sidewalks and curbs in the areas of the city that don't have them
- ◆ There are some concerns about transportation issues ; they are covered in the transportation section of this plan.

There are a few interesting demographic characteristics that the survey highlighted:

- ◆ 58% of the heads of households are under 55 years old.
- ◆ River Heights residents are well educated; 96% are high school graduates and 62% have graduated from college or have a graduate degree.
- ◆ Slightly over half (51%) have lived here less than 15 years while a third have lived in River Heights less than 6 years.
- ◆ A large majority own or are buying their homes (90%).

## **Section 1 LAND USE**

Current land use is almost exclusively single family residential. There are a few apartments in the city but no apartments have been built in recent years. There is a zone (R-2-10) that allows for the construction of 2-family units and a few duplexes have been built in that zone. The city is divided into three additional density zones allowing for 8,000 square foot lots, 10,000 square foot lots, and 12,000 square foot lots. There are no commercial or industrial zones. There is also a Planned Unit Development use available but it has not been used to date.

An ordinance establishing an Agricultural Zone was passed by the City Council in 1998. All land annexed in the City is placed under this zone. The agricultural zone allows the integration of residential areas with open space. The minimum lot size in the agricultural zone is 5 acres and the keeping of horses, cattle, and fowl is permitted in the agricultural zone.

The zoning ordinance, adopted in 1983, includes mobile home parks and allows them as a conditional use in the R-2-10 zone (residential, 2 family, 10,000 square foot lots). No mobile home parks, however, have been built in River Heights.

A community survey pointed out that residents want River Heights to remain a community of single family homes.

There are no commercial areas in the city but there are some residents with home occupations.

### **PARKS AND OPEN SPACE**

Few things define the ambiance and general attractiveness of a city more than its parks and open spaces.

At present, the Heber Olsen park is the only developed park in the city. It has 6 acres and is next to the former elementary school and city office building. There are tennis courts, playing fields and a fireplace/pavilion area for public use.

In 1997 the City transferred approximated 8.4 acres, near 600 South and 800 East, to the Cache County School District. That land had been set aside, by the City, for a Park. The Cache County school district, however, will use that land for outside recreation grounds and playing fields (softball, soccer, etc). Under an agreement made with the school district in 1997, the school district will allow these recreational grounds and playing fields to be used by residents of the City and the general public. The public will be allowed to use the fields at any time except during school hours. This land is, therefore, part of the River Heights park system. The total area of these recreation grounds and playing fields is 5.6 acres.

The National Recreation and Park Association recommends 6.25 to 10.5 acres of park land per 1000 residents as a guideline. Counting the recreation grounds near the elementary school, River Heights is at the high end of that recommendation at 10.2 acres per 1000 residents. If River Heights reaches its potential population of 5,320 it will be at 2.6 acres per thousand people.

## LAND USE TOTALS

Table 3 shows land use in River Heights.

| Land Use                    | Acreage Total | Percent of Total |
|-----------------------------|---------------|------------------|
| Single Family Dwelling      | 153.95        | 41.96            |
| Duplex                      | 0.18          | 0.05             |
| Multi-Family Apartment      | 1.03          | 0.28             |
| Mobile Home Court           | 0.0           | 0.0              |
| Commercial                  | 0.3           | 0.08             |
| Light Industry              | 0.16          | 0.04             |
| Heavy Industry              | 0.0           | 0.0              |
| Public & Quasi-Public       | 18.59         | 5.1              |
| Transportation              | 49.14         | 13.39            |
| Utilities                   | 2.17          | 0.59             |
| Park & Recreation           | 9.76          | 2.6              |
| Agriculture                 | 60.1          | 16.38            |
| Subdivided Vacant Lot Acres | 14.26         | 3.9              |
| Vacant Land Acreage         | 57.33         | 15.63            |
| <b>TOTAL ACREAGE</b>        | <b>366.97</b> | <b>100.0</b>     |

Table 3  
Land Use

## GEOLOGY

River Heights is located on firm ground. None of the existing neighborhoods in River Heights are built on land said to be unstable for development. A study by Evans, McCalpin, and Holmes, Department of Geology, Utah State University, published in 1996 indicates this. Appendix D contains details about the geology of River Heights.

## SENSITIVE LAND IN RIVER HEIGHTS

Sensitive areas in and near River Heights include the Logan River corridor, the Spring Creek drainage, and steep slopes. There may also be wetlands in some of the undeveloped fields in River Heights. Spring Creek is located between River Heights and Providence City. Steep slopes separate the upper terrace of River Heights from the Riverdale neighborhood, the Logan River, and the area in Logan known as the island.

## Logan River Corridor

The Logan River provides about 3,000 feet of the border between Logan City and River Heights, in the Riverdale neighborhood. This is all private property. At present, there is little development near the River. The only houses in this area are on Riverdale Avenue, 300 East, and 500 South (10 houses). Only one house is located close to the River (about 30 feet). This area has the potential for flooding, but the River Heights side of the river is higher than the Logan side and thus less susceptible to flooding. Landowners in Riverdale report that the Logan River did not overflow its banks in Riverdale during the 1983 flood. Flood plain maps provided by the Cache County recorder indicate that the Logan River corridor, in River Heights, would not be inundated by a 100 year flood.

The Logan River corridor provides valuable wildlife habitat. The river and its associated riparian vegetation provide habitat for a variety of bird species. These species are listed in appendix E of this document. Appendix F lists the native plant species in the riparian zone along the Logan River.

## Spring Creek and Wetlands

Spring Creek is the natural drainage for most of River Heights and of Providence. It also serves as the logical place for a boundary between the two cities. Although all Spring Creek is not currently within the River Heights City limits, it is a stated goal in the general plan to annex much of the land north of Spring Creek into River Heights. It is also a stated goal to acquire or otherwise reserve the property along Spring Creek for further parkland and open space between Providence and River Heights. Therefore, a discussion about the Spring Creek drainage is included in this plan.

Spring Creek is bordered on the north and south by agricultural fields. There are wetlands adjacent to or near Spring Creek along much of its length. Wetlands are "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

In this region wetlands include marshes, bogs, wet meadows, shrub wetlands, forested wetlands, and similar areas. Wetlands are protected under section 404 of the Clean Water Act and a permit is required to fill or destroy wetlands. Permits are issued by the United States Army Corps of Engineers (COE). Pursuant to section 404(c) of the Clean Water Act, the Environmental Protection Agency has veto power over the issuance of section 404 permits for certain reasons.

A wetland delineation, performed by the COE or a wetland ecologist as certified by the COE, must be conducted to determine the boundaries of any wetlands that may exist near Spring Creek or in any other part of River Heights, prior to implementation of any development activities that may affect those wetlands. It is the responsibility of land developers to determine if wetlands exist on any sites that are to be developed. If wetlands are found, it is their responsibility to obtain the required permits, from the COE, before wetlands can be filled. In most cases, mitigation will be required to compensate for the filling of a wetland. Wetland mitigation usually includes the creation, restoration, or enhancement of an acreage of wetlands comparable to or greater than the wetland acreage impacted. In some cases, wetland preservation may be acceptable as mitigation.

## Steep slopes

The slopes that separate the upper terrace of River Heights from the Logan River and the Riverdale area are too steep to build on. At present, there are no structures on the slopes. Due to the obvious problems associated with building on these slopes it is doubtful that anyone will propose building on them.

These slopes are covered with trees and vegetation. At present there is a zoning ordinance that requires buildings near and on slopes greater than twenty-five degrees to have adequate provision by siting, retaining walls, landscaping, terracing, etc. to maintain site stability and to prevent erosion.

## LAND USE GOALS AND RECOMMENDATIONS

Goal 1. River Heights should be a residential community of single family homes. It should continue to have an atmosphere of pleasant and quiet residential living.

- Policies:
- A. Growth in the City should be paced by the ability of the City to provide services.
  - B. Eliminate the mobile home park reference in the zoning ordinance
  - C. Eliminate the zone allowing for more than one family per dwelling, as it applies to any new zones. Retain the R-2-10 zone currently in the City.
  - D. Develop a City policy for moderate income housing as required by state law (10-307).
  - E. Retain the zones allowing houses on 8,000, 10,000 and 12,000 square foot lots.
  - F. Retain a Planned Unit Development (PUD) ordinance in the General Plan. Encourage only single family, owner occupied, single family units in a PUD. Develop more extensive PUD policy. Require open space in PUDs.
  - G. Require a conditional use permit for a kennel license (the keeping of three or more dogs). Include siting review and guidelines for dog enclosures.
  - H. Require that Cache County School District demolish the west building of the old elementary school (at 420 South 500 East), with other provisions of the City/School contract; that the land could subsequently be used for residential lots, unless a better use of that building is proposed and accepted by River Heights City, after holding a public hearing.

Goal 2. Newly annexed areas of the City should maintain an agricultural atmosphere until the owners request further development.

- Policies:
- A. All newly annexed areas shall come into the City zoned for agriculture use or greenbelt/open space. Allow lots smaller than 5 acres in size to be annexed into River Heights under the agricultural zone.
  - B. Acquire or otherwise reserve land for a park in the north-east area of the City.

Goal 3. Maintain an attractive, aesthetically pleasing community with open spaces available for public use

- Policies:
- A. Acquire or otherwise reserve the property along Spring Creek for further parkland and open space between Providence and River Heights. By mutual agreement, both cities should set aside land on each side of the creek from approximately 1000 East to 100 East.
  - B. Encourage private landowners to preserve open space.
  - C. Require that new subdivisions be required to set aside land for city parks either by

paying an impact fee for parks or by requiring that some land be dedicated to the City for parkland.

Goal 4. The City boundary should ultimately go east to the U.S. Forest Service land boundary and should go south to Spring Creek, continue west along Spring Creek to Logan again at Main Street.

Goal 5. Develop a plan for excessive storm water runoff.

Policy: Develop a storm water runoff plan for River Heights, coordinated with Logan and Providence.

Goal 6. Preserve and Protect Sensitive Areas.

Policies: A. Prohibit building on steep slopes.

B. Encourage land owners along the Logan River to preserve the riparian vegetation along the river, including the over story (trees) and the under story (shrubs, etc.). Encourage land owners along the Logan River to remove concrete and asphalt rip-rapping from the river bank and replace it with native trees and shrubs.

C. Require new homes to be set back at least 30 feet from the Logan River.

D. View jurisdictional wetlands as an opportunity for wetland preservation. Educate developers of the need to comply with the Clean Water Act when planning developments in wetlands.

Goal 7. Recycle

Policy: Encourage city residents to recycle household waste.

Goal 8. Establish an urban forestry program.

Policy: A. Apply for Tree City U.S.A. status, as awarded by the National Arbor Day Foundation.

B. Prune and care for City owned trees using guidelines provided by the National Arbor Day Foundation.

Goal 9. Plan a network of pedestrian paths and bicycle paths throughout the city

Policies:

A. Ensure safe pedestrian traffic to and from the River Heights elementary school by installing school-crossing zones and hiring crossing guards.

B. Plan for a pedestrian/bicycle path along the north side of Spring Creek.

C. Require that pedestrian movement across any new roads be central to the design of any new road projects. Require that bicycle movement along any new road also be central to the design of any new road projects.

Goal 10. Plan for a small commercial zone.

Policies:

A. The commercial zone shall be adequately buffered from all residential zones so that noise, lighting, and traffic that may be generated by a commercial zone does not impact residential zones.

B. The commercial zone must not cause a significant burden on City services.

## **Part 2 TRANSPORTATION**

The transportation portion of the River Heights general plan is challenging in that the city is a destination only for those who live here. Many more must travel the streets to arrive at their respective destinations. As Providence and Millville grow, more traffic will pass through River Heights, thus requiring a plan for traffic that is not generated in the city or will not finish its trip in the city—just passing through. Current traffic counts along State Road 238 indicate about 3500 trips per day. That number is expected to double in the next 20 years.

The Cache Metropolitan Planning Organization (CMPO) is a consortium of city and county governments in the Loan Urbanized Area that conduct transportation planning to provide a comprehensive, coordinated and continuing approach to planning transportation. The CMPO was formed in 1992 to carry out the federally mandated metropolitan planning process so the Logan Urbanized Area can receive federal funds for improving transportation facilities and services (CMPO Internet web site). River Heights is part of the CMPO. The Mayor of River Heights sits on the executive committee of the CMPO, as do all of the mayors in the Logan urbanized area.

In June, 1997 the CMPO adopted a 20 year transportation plan named “2020 Long-Range Transportation Plan.” They identified two north-south routes through River Heights for consideration: 1000 East and State Road 238. These two projects are on the financially constrained list in the 20 year plan, which means that funding for these two projects is likely within the next 20 years.

The CMPO’s plan also identifies 600 South as a street that could take Logan east bench traffic from 1400 East (proposed) to 400 East. There is also some discussion still about the “Spring Creek Corridor” as a proposed route from the east bench toward main street. Providence City is moving forward with the Spring Creek Corridor. This is, however, contrary to a stated goal in this plan to “Acquire or otherwise reserve the property along Spring Creek for further parkland and open space between Providence and River Heights.”

The CMPO’s recommendations are not final and River Heights City should plan to work closely with the CMPO as funding becomes available for these (and other) projects. River Heights’ neighboring cities will be planning on feeding traffic along projected routes through River Heights. The CMPO will undertake funding for a project only in cooperation with local municipalities.

### **SURVEY RESULTS**

The survey of River Heights residents done in 1996 also listed some transportation related items of interest. They include:

- ◆ The need to establish appropriate north-south routes was recognized. The preferences were 600 East and 1000 East.
- ◆ The east-west streets preferred by citizens were 600 South and 700 South.
- ◆ 88% of the respondents would like to see sidewalks installed while 80% would like curb and gutter.
- ◆ At least 3/4 of the residents do not want to see any change to River Heights Boulevard.

## TRANSPORTATION GOALS AND POLICIES

Goal 1. River Heights should be a community with adequate streets to effectively move traffic through residential neighborhoods and through the city. Plan for pedestrian and bicycle safety and access.

- Policies:
- A. Local neighborhood streets should have at least a 50 feet right of way. See the recommended cross-section in appendix C.
  - B. All identified collector streets should have at least a 66 foot right of way. Existing collector streets that are less than 66 feet wide should be upgraded whenever possible. See the recommended cross-section in appendix C.
  - C. All collector and local neighborhood streets should have sidewalks on both sides of the street, curb and gutter, and a five foot planting strip.
  - D. The widening of roads and rights-of-way should be accomplished sensitively within residential areas. Mitigating measures should be taken to reduce the impact of enlarged roadways.
  - E. Overnight parking on city streets should be prohibited throughout the year.

Goal 2. Build sidewalks in the existing developed areas of the city.

- Policy:
- Develop a systematic plan to install sidewalks and curbs and gutters (where appropriate). This should be on a cost sharing basis with adjacent property owners. In new subdivisions or developments, however, the cost of sidewalks and curb and gutter will be the sole responsibility of developers and sub-dividers.

Goal 3. Local and trans-city traffic should be able to move through out the city safely and effectively. As much as possible, collector streets should be adequate so as not to concentrate traffic on only a few streets.

- Policy:
- A. The following streets, either existing or as they are developed in the future, are to be collector streets:

- 400 East from 600 South to 300 South
- 600 East
- 1000 East
- 600 South between 400 East and 1000 East
- 700 South from Highway 89 to 600 East
- River Heights Blvd. From 600 East to 1000 East

- B. A right-of-way should be preserved for the following new neighborhood streets:

- 500 East between 400 South and 500 South
- 700 East between 400 South and 600 South
- 400 South to 1000 East (this right-of-way is also required to protect access to a 10 inch water line)

C. Collector roads should have controlled access, meaning no houses fronting the street in all new subdivisions.

D. Participate in regional transportation planning by working with the Cache Metropolitan Planning Organization (CMPO).

Goal 4. River Heights residents should have access to mass transit.

Policy: Endorse the possibility that River Heights join the proposed Cache County Transit District. (The creation of this transit district, which could bring bus service to River Heights, will be decided via a general election to be held in 1999.)

Goal 5. Subdivisions should provide adequate lighting for safety.

Policy: Amend the subdivision ordinance to provide for adequate street lighting at intervals of not more than 300 feet and/or all intersections. Street lights will be installed in subdivisions by agreement with Utah Power and the City Council, and should be provided approximately every 300 feet. The location of street lights should be on the subdivision plat.

Goal 6. Study the possibility of making River Heights Boulevard safer by making it a one way street or by closing it.

**Part 3**  
**INFRASTRUCTURE AND CITY UTILITIES**

This section describes the current infrastructure and utility conditions, background information, and has recommendations to guide infrastructure and utility planning, capital improvements budgeting, and infrastructure maintenance.

**WATER**

Historical Information

The drought in 1934 resulted in the Utah Drought Agency drilling two wells in the River Heights area to be used for late-season agricultural irrigation. Each was located adjacent to one of the two canals now traversing the City. A year later the state assigned the upper well to the City at no cost. Years later the City purchased the lower well from the Providence-Pioneer Irrigation Company.

Present Conditions

Information about the River Heights water system is provided. Gratitude is expressed to Wallace Jibson P.E. for his reports and calculations which make up the majority of the following information. It is intended as a brief outline of the current water system that can be used to make some general assumptions and make general projections. Table 4 details the city's water system.

|  |   |
|--|---|
| source of water supply   | 3 wells   |
| number of connections  | 455   |
| reservoir capacity   | 500,000 gallons   |
| average daily use (1994 to 1996)   | 845,000 gallons per day summer use<br>499,000 gallons per day yearly average                    |
| peak daily use (summer)  | 1,200,000 gallons per day   |
| peak operating capacity<br>(with all three wells operating 24 hours/day)   | 2,700,000 gallons per day   |
| number of users at current peak capacity,<br>with the present pumping system (peak daily<br>summer use divided into peak operating capacity) | 1020  |
| estimated number of connections that can be<br>served with water supply  | 1700 (exclusive of water rights pumping<br>capabilities, only the water available in the wells) |
| total number of projected connections as per land<br>use recommendation  | 1650  |
| present water rights   | 5.797 cubic feet per second (2600 gallons per<br>minute, 3,744,000 gallons per day)             |
| estimated number of connections that can be<br>served with present rights  | 1090  |
| projected summer requirements:<br><br>summer peak daily use<br><br>at 600 connections<br>at 800 connections<br>at 1,000 connections          | <br><br>1,582,400 gallons per day<br>2,109,600 gallons per day<br>2,637,000 gallons per day     |

Table 4  
Water Supply and Use

The City has applied for the rights to an additional 3 cubic feet per second from its current wells. The application has not been approved yet. This would allow for 565 more connections for a total of 1655 connections.

The State of Utah Division of Drinking Water establishes standards for storage capacity for public water systems. They recommend storage capacity of about 800 gallons per residential connection. At that rate the River Heights reservoir will accommodate approximately 625 connections.

#### Proposals to Enhance Water Sources

During the past few years considerable attention has been focused on the relationship of ground water to surface water in the Bear River drainage. There is considerable debate going on at this time

concerning how much the drawing or pumping of sub-surface water ultimately affects the flow of springs and other sources that feed the Bear River system. Water rights in Utah are determined by a priority system, basically first come, first served. River Heights' wells have priority rights of 1934, 1964, and 1980. This compares with three large water users in Box Elder County with rights dating from 1889 to 1923. At times during the late part of the summer and on low water years these entities have a hard time filling their rights on the river. Because of this shortfall, River Heights could face the possibility of having to turn its pumps off in a drought situation because of a call for water by senior rights holders. This has never happened to date but neither has it been discussed and debated like it is now.

The State Engineer for the State of Utah is the official charged with over seeing and regulating water appropriations. The State Engineer's Office has not approved any new applications for Cache County for a least 4 years because of the on going debate about how much the ground water and surface water in our area are related. The City has an application pending for an additional 3 CFS but it is being held by the State Engineer without approval at this date (along with applications for about 400 CFS from other cities in the valley).

If it is decided by the State Engineer that the wells do indeed affect surface water flows, then in order to get any new appropriation from the state a city would have to replace the water (or some portion of it) it is expected to draw. The consequences of this policy are: that in order to grow more than its current water rights can provide, the City of River Heights will be obligated to find other sources of water or water rights. Also, holders of more senior rights could force the City and others to provide some replacement water to cover the rights it is already using. Part of the reason the state is considering a dam on the Bear River is to provide other water for replacement purposes for cities and other water users that may need to replace water in the future or to cover currently used rights that are junior to more senior rights holders on the Bear River System.

Another way to protect rights is to acquire other, more senior rights, and transfer them to the City's wells. This is an acceptable and, often times, more economical way to protect and enhance current water rights. One way to accomplish this would be by acquiring all or part of the rights from the Providence-Logan Canal Co. or other canal company and transferring them to the City's well.

The State of Utah has recently required that all public water systems complete a drinking water source protection study and create a plan of action to protect drinking water from contamination at its source. Larwest International Engineering has completed the study and has submitted it to the City along with a plan entitled: Potential Contamination Source Inventory and Management program for River Heights City. There are preventative steps to be taken now and on a regular basis in the future to warn citizens of potential source contamination. It should be a community effort.

## Summary

The City has the water "in the ground" and water rights to serve about 1000 residential connections. By adding additional pumps and receiving approval on the rights that are applied for, the City could serve about 1700 residential connections. This is about equal to the total projected growth for the City. The addition of large irrigation users, or use of the city system to irrigate areas now served by the Providence-Logan canal company system, should it cease to provide water to its users, could certainly alter this figure.

The reservoir capacity presently will accommodate about 600 residential connections. The City owns a site for a new reservoir on a bluff just south of the entrance to Dry Canyon east of Logan. There are at least four problems with the site:

1. Logan has allowed residential encroachment on the planned main line inflow/outflow right of way.

2. Its location is not ideal. It is too far north and the elevation of a reservoir at that site may create high water pressure problems.
3. Pumping costs at that elevation may not be economically feasible.
4. It is too close to the East Cache Fault.

Past and current Logan officials have guaranteed that River Heights will have public access from the reservoir along Logan's existing and proposed streets to the connection into the River Heights system. Logan's public works director has pledged Logan's cooperation in the event River Heights wishes to sell the Dry Canyon reservoir site and purchase appropriate replacement reservoir property further south, at a lower elevation. Logan might be willing to purchase the site and assist in identifying and developing utility easements from the new reservoir site to the River Heights boundary. Time is of the essence, as the number of users approaches 600, the City must address the critical decision regarding water storage capacity by constructing an additional reservoir or limiting growth.

## **SEWER**

River Heights contracted with Logan City for sewage treatment in the mid 1970s. The collection system was installed and is now maintained by River Heights City. A February 1994, study conducted by Wallace Jibson, P.E. concludes that the River Heights system is adequate for the area that it presently serves and for any new development of areas east of 600 East and north of about 700 South that is anticipated by the proposed general plan. However, to maintain a gravity flow system, the natural gradient of the land dictates that as development is contemplated in the areas south of 700 South from 100 East all the way east to approximately 1200 East, an additional collection system and an out flow trunk line will need to be provided along Spring Creek. Said trunk line parallel to Spring Creek will not only benefit River Heights but also Providence and Logan as development in each respective city occurs on the bench east of River Heights.

### Water and Sewer Recommendations

1. The City should continue to pursue the approval of water rights for an additional 3 cubic feet per second from its current wells. It should also support the Cache County Water Policy Advisory Board as it relates to the decisions of the State Engineer on this issue.
2. The City should continue to study the acquisition of the water rights from the Providence-Logan Canal Company. Working with Logan officials and share holders from the three communities, the water rights should be acquired but not the company itself.
3. The City should develop a policy whereby developers are required to transfer their water stock to the City as development is approved.
4. The City should develop a 5 to 8 year capital projects plan for the water and sewer utilities. The plan should prioritize projects and identify methods of paying for them. It should be approved by the Council and updated annually. It is recommended that a more complete water system evaluation be conducted to include an analysis of the desirability, location and size of a new reservoir, proper distribution system enhancements, pumping configurations and mechanical system updates among other issues.
5. The City should establish a limit for building permits well in advance of the time of reaching the approximately 600 residential connections limit that can be serviced by the present storage capacity. This

will allow all prospective developers and home buyers ample notice of the intent of the City to control development until improvements are completed.

6. The City should determine and implement the method of financing additions to the water system. Relying on impact fees, water sales revenues or a combination of the two philosophies should be considered.

7. The City should continue discussions with Providence and Logan concerning the installation of a sewer trunk line along 800 south/Spring Creek. All three entities have a significant interest in it.

8. The City should develop a policy on water and sewer main line extensions-whether they shall be the exclusive responsibility of the City or of the developer, or both, and under which circumstance, the City will participate, etc. An ordinance establishing property frontage assessments for water and sewer extension projects should be considered.

9. The City should consider sewer link up with Providence along 600 East to accommodate those currently not being served in that area at present.

10. Implement the management programs to control potential water sources contamination as indicated in the Potential Contamination Source Inventory and Management Program for River heights City document.

11. The City must not allow the ten inch water line from the City's reservoir, between 1000 East to 600 East, to be covered by any development. Much of this water line is buried in an undeveloped part of River Heights. Any development in that area must leave an unobstructed right-of-way to maintain that water line.

## **STORM WATER**

Pursuant to existing subdivision regulations, developers are required to provide uniform and adequate facilities and improvements within developing subdivisions for storm water drainage. While this subdivision requirement provides for the collection of storm water within the subdivision, the uniform disposal of storm water is an issue that requires a city wide plan. Currently, sub dividers and developers are required to receive approval from the appropriate ditch or canal company before any storm water is channeled through a ditch, canal or waterway under the jurisdiction of the company. While the current storm water disposal method works under the existing network of ditches and waterways, in-fill residential development may eliminate agricultural areas and the need for ditches, etc. The city's liability exposure will require the closing or covering of those canals and waterways thus restricting the capacity of a storm drain system based only upon irrigation ditches and canals. Additionally, as the installation of sanitary sewer system is anticipated which will serve the developing residential areas south of 700 South from 100 East to 1200 East, a city wide storm drain disposal system could be incrementally installed to minimize costs and use the gradient of the Spring Creek drainage. As the new elementary school develops in this area, a city wide storm plan could provide direction regarding the scope, the advisability and general design parameters of a proposed storm retention facility and the area in which said facility would serve.

### **Storm Water Recommendations**

A city wide or specific area storm water plan should be developed and provide the following:

1. Master Storm Water Management Plan;
2. Standards and specifications for drainage facilities and improvements, etc.;

3. Provisions outlining the distinctions between collection and disposal systems and policies outlining the funding requirements for the developer and the city;
4. Formulation of funding alternatives and determination of when and how said funding alternative be adopted and implemented. A considerable number of funding alternatives exist and should be considered as to which can accommodate the varied interests of the existing or developed areas as well as developing areas, including but not limited to, impact fees, special improvement district assessments, temporary sewer surcharge, general budget appropriations, Community Development Block Grant Funds, etc.

## **ELECTRIC UTILITIES**

Utah Power provides electric utility service to River Heights under a recent 30 year franchise agreement. The City and Utah Power have had, and continue to have, a good working relationship. In the future, deregulation of electric utilities should pose few, if any, serious problems or issues for River Heights. Other future issues on the horizon might include direct-line reading of electrical meters and the possibility of the city's direct line reading of electronic water meters. The benefit cost analysis of such a system requiring a new or retrofitted electronic water meter will obviously have to be carefully evaluated.

Opposition to unsightly overhead electrical wires has become a political issue in most Utah communities. State statutes allow electric utilities to install overhead wires as the standard and if the community prefers buried lines then the community must bear the cost difference. Some designated locations within River Heights may warrant underground lines. City officials should visually survey the community and determine if such public policy and accompanying expense is appropriate for any specific location.

The franchise agreement additionally provides for underground services in developing subdivisions and overhead service in existing neighborhoods. Developers and city officials are encouraged to designate streetlight locations early on in the subdivision improvement review process so costs of streetlight installation by UP&L can be economically included when underground residential services are installed. The city and UP&L should agree to a consistent lighting fixture and pole type based on street and intersection standards. Street lighting in developing subdivisions will be served by underground wiring. In existing neighborhoods and subdivisions where the lines are overhead and if there is a desire on the part of the city or a private property owner to bury the wire, then UP&L will bury the lines if the city or owner provides the appropriate trench.

UP&L also provides street and security lighting for River Heights. The installation and maintenance of each pole and lighting fixture is the responsibility of UP&L and the city is charged monthly on a per light basis. In the past, some residents have complained that some streetlights are not operable and remain so for long periods of time. Because UP&L charges the city on a per light basis whether or not the light consistently operates; citizens, city officials and adjacent property owners are encouraged to report the problem to UP&L. UP&L will refund the city any charges for long standing inoperable lights. City officials may consider encouraging its residents to call a designated clearinghouse telephone number so the calls can be monitored and followed up on.

## **CABLE AND TELEPHONE UTILITIES**

Telephone and cable services are convenient partners and can be considered together. Community wide adherence to the following standards will continue to facilitate the services of cable and telephone providers.

## Utility Easements

Utility easements and rights of way are essential to the service of all utilities but especially telephone and cable, which are typically installed after the residence is completed. Additionally, because the cable/telephone trenches are shallower than water or sewer trenches, they are more susceptible to building, fence and landscaping encroachments and barriers, which, at times, make line installation and maintenance difficult, disruptive and expensive. As is the current policy, utility easements are and should consistently be required on all subdivision plats and made part of the official record. During the construction process and thereafter, the easements should be consistently protected by the city's best enforcement method. Whenever possible, city representatives should inform property owners regarding the existence of easements, and protect said easements from encroachments. Officials considering building permits, fence permits and requests for variances etc, should consider utility easements on each and every application.

## Location of Service Lines

Cable and telephone service lines in developing subdivisions should be installed underground to enhance the value appreciation opportunities of land and buildings, reduce visual proliferation of poles, wires and equipment, and in the perfect blue-staked world, reduce maintenance costs. Respective city officials should make valiant attempts to reduce the visual proliferation of overhead lines, poles and equipment in existing neighborhoods, especially along major transportation corridors and within prime and identified vistas/view sheds.

## Electric, Cable, and Telephone Utility Recommendations

1. The City should continue to require underground services in developing subdivisions.
2. The City should designate locations for street lights in developing subdivisions early in the process so UP&L can economically install street lights while residential underground work is commencing.
3. The City should determine if certain designated areas warrant the expense of burying overhead lines. Special attention should be given to major transportation corridors and areas with significant vistas. The goal is to reduce the proliferation of overhead lines, poles, and equipment.
4. The City should determine in what areas, the overhead wiring serving streetlights should be buried. The city's shared role in this process is to provide trenching, UP&L's role is to install underground wiring.
5. The City should continue to require utility easements and protect them from encroachment.
6. The City should formalize the survey process assuring that streetlights are operable and if not, formalize a clearinghouse communication and review process to assure that Utah Power is aware of problems and that timely repairs and replacements are made.
7. As new water meters are purchased, the City should determine the feasibility of direct line meter reading.

**Part 4**  
**AFFORDABLE HOUSING**

Introduction

The Utah State Legislature passed House Bill 295 in February 1996. That Bill mandates that all municipalities in Utah to develop a plan for affordable housing. The U.S. Department of Housing and Urban Development (HUD) has set a baseline for affordable housing. Under this baseline, no more than 30% of gross household income should be spent on housing and utility expenses. Households earning 80% of the median income in their municipality are identified as those that may have to pay more than 30% of the gross income each month for housing and utilities.

Households falling below 80% of the median income are divided into three levels:

- 1) households receiving between 51% and 80% of median income;
- 2) households receiving between 31% and 50% of median income;
- 3) households receiving less than 30% of the median income.

**Income Levels**

The median income for a household in River Heights is \$ 40,603. The average household in River Heights has 3.2 people. These figures are from the 1990 census, the latest year for which this data is available. The median income for Logan City, our neighboring city, is \$26,178, which also has an average household size of 3.2 people.

The community survey of River Heights in 1996 reported the following:

- 27% of the households reported an income over \$60,000
- 30% of the households reported an income between \$40,000 to \$59,999
- 27% of the households reported an income between \$20,000 to \$39,999
- 16% of the households reported an income less than \$20,000

If more than 30% of a household's income is spent on housing, funds for other necessities such as food, transportation, and health care may be insufficient. Table 1 shows the maximum amount that should be spent for housing for the households with less than 80% of the median income.

|   | 80% of<br>median income =<br>\$32,000 | 50% of<br>median income =<br>\$20,000 | 30% of<br>median income =<br>\$12,000 |
|---|---------------------------------------|---------------------------------------|---------------------------------------|
| maximum monthly rent<br>(or mortgage) plus<br>utilities | \$800                                 | \$500                                 | \$300                                 |

Table 1. Monthly Allocation for Housing Costs.

## **Housing in River Heights**

River Heights is a community of mostly single family homes. There are some twin homes in the City and there is a zone (R-2-10,000) which allows twin homes. Most of the R-2-10,000 zone, however, contains single family units. There are a few cases where homeowners rent basement apartments. Under current ordinances, however, this practice is prohibited (unless a specific apartment or basement apartment has been grand-fathered in) because all of the single family zones are for single-family dwellings.

As of 1990 census, River Heights had 328 owner occupied houses in River Heights and 59 rental units. There are now approximately 455 houses in the City. There is one small apartment building in the City.

## **Estimate of Affordable Housing Needs for River Heights**

In response to the passing of House Bill 295, the Utah Department of Community and Economic Development developed a mathematical computer model to estimate the existing and projected affordable housing needs for a municipality. This computer model uses a spreadsheet program to make the calculations and project the estimates. River Heights City used that model and the descriptive statistics, as provided by the State, to estimate the affordable housing needs. The Cache County Planning office helped by entering the data into the spreadsheet, running the model, and printing the results.

Inputs to the model include the number of houses in River Heights, the number of rental units, the monthly housing costs as a percentage of income, the number of new houses built, income distribution, population projections, housing stock assumptions, and mortgage assumptions. This data was available through 1996.

A description of the mathematical computations and assumptions used by the model is beyond the scope of this document. The model was used and its estimate accepted because this model was recommended and provided by the state of Utah for an affordable housing analysis. The assumption is that the model is valid. Appendix A in this report has the data that was entered into the model and the results of the model.

The model shows that River Heights has a shortage of affordable housing for its population. Table 2 shows this. Numbers in ( ) indicate a shortage.

| affordable housing category    | 80% of median income | 50% of median income | 30% of median income |
|--------------------------------|----------------------|----------------------|----------------------|
| household income               | \$32,000             | \$20,000             | \$12,000             |
| supply year end 1990           | (13)                 | (11)                 | (13)                 |
| net change 1990 to 1996        | 18                   | (21)                 | (1)                  |
| supply year end 1996           | 5                    | (32)                 | (13)                 |
| new demand 1997 to 2001        | 2                    | (7)                  | 0                    |
| projected supply year end 2001 | 7                    | (39)                 | (14)                 |

Table 2. Affordable Housing Needs Summary.

Table 2 shows that River Heights has an increasing need for affordable housing for households earning less than 50% of the median income of \$40,603. There is a sufficient supply at present, and projected to the end of 200, for affordable housing for households earning 80% of the median income.

### **Affordable Housing Goals and Policies**

Goal 1. Provide moderate and low income home ownership opportunities.

Policy: Support the Bear River Association of Governments' existing low income home buyer programs.

Goal 2. Assist low income home owners in financing home repairs.

Policy: Help low income home owners secure minor and major home repair loans from the Bear River Association of Governments (BRAG). BRAG can make minor repair loans up to \$1,500; they also have a program for making loans for major home repairs.

Goal 3. Increase the supply of affordable housing units

- Policies:
- A. Retain the R-1-8,000 zone which allows single family homes on lots of 8,000 square feet.
  - B. Continue to allow manufactured homes to be built in the City.
  - C. Purchase one or more lots and invite Habitat-for-Humanity to build homes on those lots. Resell the lots to qualified low income home buyers.

Goal 4. Provide additional rental units.

- Policy:
- Allow home owners to rent basement (or similar) apartments in their homes with a conditional use permit.

Goal 5. Work with the community to break the stereotype that those needing affordable housing are undesirable.

- Policies:
- A. Involve the community in all decisions related to affordable housing.
  - B. Encourage and establish an open dialogue among all groups effected by affordable housing issues.

### **Acknowledgments**

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Appreciation is also expressed to the Cache County Planning office.

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## Appendices

## Appendix D Geology of River Heights

River Heights lies on Quaternary units that were deposited in the deltas, shorelines, and lake bottom of Lake Bonneville (16,000 to 15,000 years ago). The River Heights City center lies on deltaic deposits from the younger, Provo shoreline of Lake Bonneville (14,500 to 13,500) years ago. Quaternary deposits east of River Heights includes alluvial stream and fan deposits near the mountain front.

The mountain front of the Bear River Range, east of River Heights, formed due to slip along the East Cache Fault, an active normal fault which is approximately 48 miles long. This fault forms the boundary between Cache Valley and the Bear River Range. Although this fault runs through parts of Logan City, and is visible on the fairways of the Logan Golf and Country Club, it is east of River Heights near the base of the mountains.

A study by Evans, McCalpin, and Holmes, Department of Geology, Utah State University, published in 1996 states that geologic hazards in this area include flooding, mass wasting, and earthquakes. That same study, however, indicates that River Heights is on ground with few geological hazards, with the exception of earthquakes.

River Heights is on four Quaternary units:

Qal - Clast-supported pebble and cobble gravel in a matrix of sand, silt, and minor clay, with thin sand lenses; located on modern floodplains and low terraces. This area covers the Riverdale section of the City.

Qlf - undivided fine-grained Lake Bonneville deposits. This is a small section in River Heights east of 700 South, below Summerwild Avenue.

Qlpd - Deltaic deposits related to the Provo and younger shorelines - Clast supported pebble and cobble gravel in a matrix of sand and minor silt, with thins, sand beds; mostly deposited at the time of the Bonneville flood. This area covers most of the City's center, surrounding the City office building and the area surrounding the Providence cemetery.

Qlps - Lacustrine sand and silt related to Provo and younger shorelines - Nearshore deposits of coarse to fine sand, silt, and minor clay. This are covers the area surrounding the new elementary school.

### Geologic Hazards

None of these Quaternary units, as discussed in by Evans, McCalpin, and Holmes, are said to be unsuitable to build on. Further, no problem soils (soils with large amounts of clays that have a high shrinking-swelling potential due to hydration and drying) were found during their investigation (Evans, McCalpin, & Holmes, 1996).

Mass Wasting. It is important to note, however, that other Quaternary units near River Heights are unsuitable for building due to a potential for mass wasting. This is a process in which rock, soil, and debris move down slope under the influence of gravity. Mapped complex slope failures are located on both sides of the Logan River where steep slopes of fine-grained Lake Bonneville deposits have failed. This zone exists along the north and south sides of the Logan River for about two miles downstream from the mouth of Logan Canyon. The northern boundary of River Heights is close to this zone.

The Evans and McCaplin study also says that alluvial fans are potential hazard sites. Several

alluvial fans are east of River Heights, closer to the mountains.

Earthquakes. Because River Heights (and all of Cache Valley) is close to the East Cache fault, which is an active fault, all of Cache Valley is at risk for an earthquake. Ground shaking due to earthquakes may pose a significant risk to River Heights.

Flood Hazards. Flood hazards in River Heights could occur along the Logan River, in the Riverdale area of the City or along Spring Creek. Determination of future flood risk is “notoriously poor” for canyon mouths in Utah. Melt-induced floods and peak discharges for the Logan River occurred May 24, 1907 (2,480 cfs) and May 31, 1984 (1,980 cfs) (Evans, McCalpin, & Holmes, 1996).

Appendix E  
Bird Species Found Along the Logan River Corridor in River Heights

| species  | residency                |
|--|--------------------------|
| American Kestrel ( <i>Falco sparverius</i> )               | year round               |
| American Dipper ( <i>Cinclus mexicanus</i> )               | year round               |
| Bald Eagle ( <i>Haliaeetus leucocephalus</i> )*            | winter                   |
| Belted Kingfisher ( <i>Ceryle alcyon</i> )                 | year round               |
| Black-headed Grosbeak ( <i>Pheucticus melanocephalus</i> ) | migrating                |
| Cooper's Hawk ( <i>Accipiter cooperii</i> )                | migrating                |
| Fox Sparrow ( <i>Passerella illaca</i> )                   | migrating                |
| Great Horned Owl ( <i>Bubo virginianus</i> )               | year round               |
| Hermit Thrush ( <i>Catharus guttatus</i> )                 | year round               |
| House Wren ( <i>Troglodytes aedon</i> )                    | migrating                |
| MacGillivray's Warbler ( <i>Oporornis tolmiei</i> )        | migrating                |
| Northern Goshawk ( <i>Accipiter gentilis</i> )             | winter                   |
| Red-tailed Hawk ( <i>Buteo jamaicensis</i> )               | year round               |
| Rough-legged Hawk ( <i>Buteo lagopus</i> )                 | winter                   |
| Rufous-sided Towhee ( <i>Pipilo erythrophthalmus</i> )     | year round               |
| Sharp-shinned Hawk ( <i>Accipiter striatus</i> )           | migrating                |
| Swallow species  | migrating and year round |
| Townsend's Solitaire ( <i>Myadestes townsendi</i> )        | winter                   |
| Western Screech-Owl ( <i>Otus kennicottii</i> )            | year round               |
| Western Tanager ( <i>Piranga ludoviciana</i> )             | migrating                |
| White-breasted Nuthatch ( <i>Sitta carolinensis</i> )      | winter                   |
| White-crowned Sparrow ( <i>Zonotrichia leucophrys</i> )    | migrating                |
| Wilson's Warbler ( <i>Wilsonia pusilla</i> )               | migrating                |
| Yellow Warbler ( <i>Dendroica petechia</i> )               | migrating                |
| Yellow-breasted Chat ( <i>Icteria virens</i> )             | migrating                |
| Yellow-rumped Warbler ( <i>Dendroia coronata</i> )         | migrating                |

\*A pair of bald eagles have had a winter roost along the Logan River, in River Heights, since 1989. Bald eagles are listed as a threatened species, in Utah, on U.S. Fish and Wildlife Service's endangered species list. The eagles arrive in November and leave in March.

Appendix F  
Plant Species Along the Logan River

|                              |   |
|------------------------------|---|
| Fremont Cottonwood Trees     | <i>Populus fremontii</i>                  |
| Narrow-leaf Cottonwood Trees | <i>Populus angustifolia</i>               |
| Water Birch Trees            | <i>Betula occidentalis</i>                |
| Dogwoods                     | <i>Cornus sericea</i>                     |
| Sandbar Willows              | <i>Salix exigua</i>                       |
| Willow species               | <i>Salix spp.</i>                         |
| Wild Rose                    | <i>Rosa woodsii</i>                       |
| Choke Cherry                 | <i>Prunus virginiana var. melanocarpa</i> |