



**2**

**RECOMMENDATIONS**

## CHAPTER 2

# RECOMMENDATIONS

### INTRODUCTION

This chapter articulates the City's watershed management objectives and identifies a range of appropriate implementation strategies for each statement. As described in Chapter 1, these objectives and subsequent recommendations were developed with input from the general public, water providers, resource specialists, and land managers/owners through a series of public open houses/field trips, citizens' advisory committee work sessions, and Department of Public Utilities discussions. All of the stated objectives and recommendations are consistent with the City's overarching goal of maintaining and improving water quality within the identified watershed area.

This chapter is organized by the following topics:

- A. PARTNERSHIPS
- B. WATERSHED EDUCATION
- C. WATER QUALITY MONITORING
- D. WATERSHED LAND USE/DEVELOPMENT
- E. DISPERSED RECREATION
- F. RECREATIONAL TRAILS & FACILITIES
- G. WILDFIRE PREVENTION, MANAGEMENT & MITIGATION
- H. FLOODWATER MANAGEMENT & MITIGATION
- I. CANYON-SPECIFIC GUIDELINES
- J. PROVO RIVER WATERSHED

Each section begins with a City-identified watershed area/resource objective, followed by a brief narrative describing the community's management direction for that particular issue/topic. Specific recommendations supporting each objective are also included.

Recommendations/management directives presented in sections A through H are to be implemented "watershed wide". Section I, Canyon-specific, includes recommendations to be implemented on a canyon-by-canyon basis. Section J, Provo River Watershed, applies to the City's Provo River watershed interests as noted.

## A. PARTNERSHIPS

**OBJECTIVE:** Encourage partnerships between Sandy City and other watershed interests to:

- a. **Educate** the public on acceptable watershed usage;
- b. **Enforce** regulations on usage;
- c. **Coordinate** and manage watershed resources; and
- d. **Fund** watershed management and improvement projects.

In this effort, the Sandy City Public Utilities Department will pursue partnerships with many groups. Potential partners include:

1. Sandy City Corporation
  - Public Utilities Department
  - Community Development Department
  - Parks & Recreation Department
  - Police Department
  - Animal Control Department
  - Fire Department
  - Community Coordinators
2. United States Forest Service
3. Salt Lake County Government
  - Sheriff's Office
  - Planning Department
  - Fire Department
  - Parks & Recreation Department
  - Public Works Department (Flood Control)
4. Salt Lake Valley Health Department
5. Salt Lake City Corporation
  - Public Utilities Department
6. Town of Alta
  - Marshal's Office
  - Planning Department
  - Fire Department
  - Parks Department
  - Public Utilities Department
7. Water Providers
  - The Metropolitan Water District of Salt Lake & Sandy
  - Jordan Valley Water Conservancy District
  - Water Pro (Draper Irrigation Company)
  - Bell Canyon Irrigation Company
  - North Dry Creek Irrigation Company
8. Provo River Water User's Association

9. Private Property Owners/Developers
10. Neighboring Communities
11. Jordan School District
12. Research Centers & Universities
13. Civic Groups & Special Interest Groups
14. Sanitary Sewer Districts
  - Cottonwood Improvement District
  - Sandy Suburban Improvement District
  - Salt Lake County Sewer Improvement District
15. State Department of Environmental Quality
16. Business & Private Sector

Currently, Sandy works closely with many of these entities on other projects. Sandy will seek to further these partnerships in relation to watershed education, enforcement, coordination, and funding issues.

This list of potential partners for Sandy City in watershed management is not exhaustive. Potential partners are likely to make themselves known throughout the implementation process. Sandy City will seek to form partnerships that meet specific watershed objectives outlined above. This may be accomplished by forming a watershed-wide coordination committee.

### **RECOMMENDATIONS AND POTENTIAL PARTNERSHIPS**

1. Form a watershed-wide coordination committee to meet bi-annually to deal with issues affecting watershed resources along the Wasatch Front, coordinate different plans/jurisdictions.
2. The following are potential partnerships for watershed education, police, enforcement, cooperation/management, and funding:

#### **WATERSHED EDUCATION** (Potential Partners)

1. Sandy City
  - Public Utilities Department (e.g. brochures, pamphlets)
  - Parks & Recreation Department (e.g. classes, signage)
  - Police & Fire Departments (e.g. watershed officers in schools)
  - Community Development Department (e.g. code enforcement)
2. United States Forest Service (e.g. interpretive rangers, Silver Lake Education Center in Big Cottonwood Canyon, materials)
3. Salt Lake County
  - Sheriff's Department (e.g. watershed officers; provide "in-the-field" contact education)
  - Parks & Recreation Department (e.g. interpretive trails, signage, naturalist-in-residence for Dimple Dell Regional Park)
4. Salt Lake Valley Health Department (e.g. Salt Lake County Storm Water Coalition, inspectors, enforcement, pamphlets, brochures, etc.)

5. Salt Lake City
  - Public Utilities Department (e.g. materials, mailings, data sharing)
6. Town of Alta
  - Public Utilities Department (e.g. brochures and mailings)
  - Parks Department (e.g. trail and park signs)
  - Marshal and Fire Departments (e.g. watershed officers/enforcement, "in-the-field" contact and education)
  - Planning Department (e.g. development and code enforcement)
7. Water Districts and Water Providers (e.g. materials, mailings, data sharing)
8. Provo River Water Users Association (e.g. signage, outreach, data sharing)
9. Neighboring Communities (e.g. cooperate between schools, use school district etc.)
10. Public School System (e.g. rangers in class, conservation)
11. Research Centers & Universities
12. Civic Groups (e.g. county library events, community outreach, newsletters, Boy Scouts)
13. Special Interest Groups (e.g. equestrian clubs, climbing/hiking clubs, back country education)
14. Watershed-Wide Coordination Committee (e.g. evaluate and determine program effectiveness)
15. Sanitary Sewer Districts

**ENFORCEMENT OF WATERSHED POLICIES** (Potential Partners)

1. Sandy City
  - Public Utilities Department (e.g. watershed officer, administer permits)
  - Parks & Recreation Department (e.g. educate employees on enforcement procedures/methods.)
  - Police & Fire Departments (e.g. patrol, watershed officers)
  - Animal Control Department
  - Community Development (e.g. code enforcement)
2. United States Forest Service (e.g. watershed rangers, SLC)
3. Salt Lake County Government
  - Sheriff's Office (e.g. watershed officers)
  - Planning Department (e.g. enforce, revise development code to fit with recommendations from the watershed plan.)
  - Fire Department
  - Parks and Recreation Department (e.g. teach methods/procedures for enforcement of policies.)
4. Salt Lake Valley Health Department (e.g. enforce current county regulations)
5. Salt Lake City (e.g. coordinate efforts in Little Cottonwood)
6. Town of Alta
  - Marshal and Fire Departments (e.g. patrol and watershed officers)
  - Planning Department (e.g. revise and enforce development code consistent with watershed plan)
7. Water Providers (e.g. ordinance posting, inspections)

## Chapter 2 - Recommendations

---

8. Provo River Water Users Association and interests
9. Private Property Owners/Developers (e.g. access to trailheads, reporting)
10. Neighboring Communities (e.g. encourage the adoption of similar policies and ordinances to foster consistency in watershed management, coordination, cooperation, and inspections)
11. Special Interest Groups (e.g. equestrian clubs, climbing/hiking clubs, back country education)
12. Watershed-Wide Coordination Committee (e.g. coordinate cross-jurisdictional enforcement of watershed policies.)
13. Sanitary Sewer Districts

### GENERAL WATERSHED MANAGEMENT/COORDINATION (Potential Partners)

1. Sandy City
  - Public Utilities Department
  - Community Development Department
  - Parks & Recreation Department
  - Police Department
  - Fire Department
2. United States Forest Service
3. Salt Lake County Government
  - Sheriff's Office
  - Planning Department
  - Fire Department
  - Parks and Recreation Department
  - Public Works Department
4. Salt Lake Valley Health Department
5. Salt Lake City Corporation
6. Town of Alta
  - Public Utilities Department
  - Marshal's Department
  - Planning Department
  - Parks Department
  - Fire Department
7. Water Providers
8. Provo River Water Users Association (e.g. Encourage Upstream Communities to adopt watershed friendly ordinances in accordance with Sandy and Salt Lake City Watershed Management Plans.)
9. Private Property Owners (e.g. Adopt-A-Trail etc)
10. Neighboring Communities (e.g. cooperate through water districts and companies to protect mutual sources)
11. Research Centers & Universities
12. Special Interest Groups (e.g. use back country hikers, climbers, horsemen to clear, establish, and maintain trails, etc.)
13. Watershed-Wide Coordination Committee
14. Sanitary Sewer Districts

**FUNDING FOR WATERSHED ENHANCEMENT** (Potential Partners)

1. Sandy City
  - Public Utilities Department (e.g. water fund)
  - Parks & Recreation Department (e.g. user fees)
2. United States Forest Service (e.g. grant money)
3. Salt Lake County Government
  - Parks & Recreation Department (e.g. user fees)
4. Salt Lake City Corporation (e.g. acquisitions in Little Cottonwood)
5. Town of Alta
  - Public Utilities Department (e.g. water fund)
  - Planning Department (acquisitions in Town of Alta and Little Cottonwood Canyon)
6. Water Providers (e.g. watershed assessment)
7. Provo River Water Users Association
8. Private Property Owners/Developers (e.g. encourage rehabilitation of watershed areas by responsible parties, land-use regulation etc.)
9. Neighboring Communities (e.g. solicit financial support of neighboring communities for watershed improvement and future municipal acquisition)
10. Research Centers & Universities
11. Special Interest Groups & Civic Groups (e.g. work with civic groups on a user based fee system)
12. Watershed-Wide Coordination Committee (e.g. work with government and private entities to fund watershed improvement etc.)
13. Sanitary Sewer Districts

## **B. WATERSHED EDUCATION**

**OBJECTIVE: Educate Sandy City residents, community leaders, partnering agencies, property owners, developers, and watershed users concerning watershed issues, management objectives, and policy implementation partnerships and programs.**

In this effort, Sandy City will support proactive, educational programs that promote watershed resource protection and awareness. This education effort will address issues "watershed-wide" and include partnerships with other communities and federal, state, and local watershed and water resource interests. Programs and activities will provide information and materials to schools, community leaders, and the public and encourage interaction/dialogue between the public and resource specialists. Watershed issues presented and discussed may include:

- Sandy City watershed management objectives
- Sandy City watershed management policies and procedures
- Watershed "use" guidelines and regulations
- Watershed uses and associated environmental and water quality impacts
- Sandy City water resources and associated uses (allocations)
- Water conservation programs (including types and levels of use, xeriscaping, etc.)
- Watershed resource management partners
- Sandy City-specific watershed boundaries

It is anticipated that community education programs and activities will also serve as a catalyst for on-going communication with elected officials, keeping them informed about emerging watershed issues and the changing environment affecting watershed management.

As appropriate, Sandy City will solicit federal and state involvement and assistance in watershed education programs and funding strategies.

### **RECOMMENDATIONS**

1. Support local, state, and federal watershed/water resource education programs and community outreach efforts. As applicable, these activities will incorporate Sandy City's watershed management policies and objectives.
2. Support Wasatch Front watershed/water resource education and information sites (e.g., the Silver Lake Interpretive/Education Center and trail head kiosks). Sandy City will expand their efforts to include signs and information kiosks at high use sites within the community's watershed (e.g., community recreation facilities, parks, picnic areas, and trail heads).

## Chapter 2 - Recommendations

---

3. Coordinate with other watershed/water resource interests and organizations to develop and distribute watershed education materials (e.g., articles, newsletters, brochures, etc.).
4. Develop and distribute a Sandy City watershed fact sheet/newsletter to educate residents about watershed issues and associated watershed management objectives. Distribution points may include City Hall, local libraries, public schools, community recreation facilities, parks, trail heads, and picnic areas. Distribution/education opportunities also include City-sponsored activities and events such as Sandy Pride Day.
5. Support a K-12 watershed education curriculum including materials.
6. Coordinate with other Wasatch Front watershed/water resource management agencies and interests to develop and adopt a comprehensive Wasatch Front watershed management program and accompanying logo.
7. Solicit media coverage of watershed and water resource management issues.
8. Implement a simplified watershed-wide educational sign program. Signs will be designed to identify watershed boundaries, convey watershed management objectives, and identify relevant use restrictions in a concise and informative manner. Construct interpretive displays/signs at trail heads and in high use areas throughout the watershed (at a minimum). Sign location is critical.
9. Encourage community leader education and outreach activities. These efforts will be designed to educate community decision makers concerning watershed issues and alternative management approaches. Activities may include reviewing water quality monitoring data on a regular basis, participating in watershed tours, and sponsoring public work sessions discussing watershed management issues.
10. Solicit federal and state assistance in watershed education programs and funding.
11. Increase educational "contact" opportunities within the watershed between resource specialists and watershed users.
12. Implement an "adopt-a-watershed" program.
13. Promote watershed-oriented service projects for civic, youth, and special interest groups within the community.

## C. WATER QUALITY MONITORING

**OBJECTIVE:** Establish a water quality monitoring program for the Sandy City Watershed. This effort includes completing a comprehensive baseline report reflecting current conditions and developing/implementing an ongoing monitoring program.

As noted, Sandy City and partner agencies will pursue a comprehensive and consistent approach to water quality monitoring. Based on the information and insights gained in the initial baseline study, an ongoing monitoring program will be developed. This program will identify the tests to be conducted, location of testing, and an appropriate testing schedule to ensure current water quality is maintained, and that adverse impacts to watershed resources, and water quality can be identified, and addressed in a timely manner.

This plan to monitor water quality in Sandy's watershed will be accomplished in cooperation with Salt Lake City Public Utilities, the Metropolitan Water District of Salt Lake & Sandy, Salt Lake Valley Health Department, Jordan Valley Water Conservancy District, Water Pro and other water providers within the watershed area, and the Town of Alta.

As an example, Salt Lake City's current program for water quality monitoring includes:

- Microbiological tests in the water sources at the intake (bi-weekly)
- Tests for nitrates/phosphates (monthly in the summer season)
- Inorganics (fuels/fertilizers) (bi-monthly)
- Organics (as deemed necessary)

### RECOMMENDATIONS

1. Cooperate with Salt Lake City Public Utilities, Metropolitan Water District of Salt Lake & Sandy, Jordan Valley Water Conservancy District, Salt Lake Valley Health Department, Water Pro and other water providers and the Town of Alta to plan, fund and perform monitoring activities.
2. Complete a "baseline" study consisting of the following:
  - a *microbiological test*, including total coliform, fecal coliform/e. coli, and microbial contaminants
  - an *inorganics test*, focusing on lead, copper, arsenic, and other metals potentially high in the area, and
  - an *organics test*, [TOC] which will determine among other things phosphate and nitrate levels - both of which are indicators of organic content.

## Chapter 2 - Recommendations

---

3. Complete a comparison analysis of similar canyons/streams along the Wasatch Front. This may also be helpful in determining possible management solutions and policies.
4. Generate and maintain a water quality database for the waters in the plan area.
5. Complete a comparison analysis of Sandy City's water quality standards and state/federal water quality standards and regulations. This analysis should include pending state and federal standards and regulations including the EPA's *Enhanced Surface Water Treatment Rule*, *Proposed Groundwater Rule [GWR]*, and *Source Water Protection Rule*.
6. Conduct seasonal analyses to determine potentially fluctuating contaminants.
7. Develop an ongoing monitoring program including an analysis of the following:
  - irregularities found in the initial baseline study
  - elements that have the potential to change over time, e.g., microbiological factors (including e. coli), coliform levels, phosphate, and nitrate levels (shows septic pollution), and TOC's (Total Organic Carbons), and
  - testing strategically above and below developed areas within the watershed boundaries to determine specific source contaminants.
8. Conduct a quarterly review of monitoring results to determine if any watershed management objectives, policies, or procedures need to be modified. As deemed necessary and appropriate, changes to the City's water quality monitoring program and Watershed Plan will be made in a timely manner.

## **D. WATERSHED LAND USE & DEVELOPMENT**

**OBJECTIVE:** Ensure that development occurring within the watershed does not adversely impact watershed resources or water quality.

In this effort, Sandy City will continue to adopt and enforce land use and development regulations/guidelines applicable to sensitive lands including watersheds, water bodies, stream corridors, and groundwater recharge areas.

Specifically related to watershed areas, the City may permit development as long as appropriate measures are taken to ensure that watershed resources and water quality are not adversely impacted.

Sandy City will work with neighboring communities, Salt Lake County, United States Forest Service (USFS), and private property owners to cooperatively address watershed development issues. Relating to government agencies, this cooperation will include reciprocal notification of watershed development proposals and projects, mutual participation in relevant planning activities, and shared enforcement of watershed development/land use regulations and ordinances.

In addition, the City will work with private property owners within the watershed to identify areas suitable for development (based on the City's development code and sensitive lands ordinance) and determine how these areas may be appropriately utilized.

Existing development and land uses that are inconsistent with the City's watershed management policies and ordinances will be reconciled through the City's policies and procedures addressing nonconforming land uses. "Resident" domestic animals (animals residing at permanent residences within the identified watershed area) are allowed only on private property subject to current Sandy City animal control regulations.

### **EXISTING SANDY CITY LAND DEVELOPMENT CODE**

Existing Sandy City land use development policies and practices are reflected through the City's Land Development Code. These ordinances apply to all properties within the jurisdictional boundaries of Sandy City. A summary of applicable Sandy City ordinances can be found in Appendix D.

Due to the City's extraterritorial jurisdiction rights to protect its watershed resources, watershed management ordinances adopted by the City apply to all areas within the City's identified watershed boundaries.

## RECOMMENDATIONS

1. Adopt watershed land-use regulations that complement other city sensitive land-use regulations and guidelines. Development guidelines/regulations reflected in other plans relevant to Sandy City's watershed include:
  - "Development setback" for water feature and wetlands (DEQ - Source Water Protection Plan)
  - 100 foot "no development" setback for water feature and wetlands (Wasatch Canyons Plan)
  - >30% slope development restriction (Wasatch Canyons Plan)
  - All cities and towns have the right to protect a stream or source from which their water is taken "for 15 miles above the point from which it is taken and for a distance of 300 feet on each side of the stream." Cities of the 1<sup>st</sup> Class (including Sandy) have authority to protect the entire watershed (Utah Code Annotated Section 10-8-15).
2. Specifically identify the City's watershed areas as a "sensitive area" subject to development regulations and guidelines as stated in the City's current development code and sensitive lands ordinances.
3. Support enforcement of the City's current development code and sensitive lands ordinances.
4. Coordinate with public entities and departments (including the Forest Service, Salt Lake County, Salt Lake Valley Health Department, Town of Alta, and Salt Lake City) having jurisdiction over the canyons to ensure enforcement of all applicable land use and public health regulations.
5. Sandy City will encourage these entities to critically evaluate all proposals that may attract new user groups or large numbers of individuals.
6. Review all land use/development variance and building permit requests for sites within the watershed (Sandy and Salt Lake County).
7. Actively participate in Salt Lake County's pre-application meeting for all developers proposing watershed development. Request to be placed on notification/ mailing list.
8. Review the Wasatch Canyons Master Plan as it relates to watershed development policies and guidelines. Adopt measures, that meet or exceed, Sandy City's watershed protection standards/efforts.
9. Work with Salt Lake County, the Town of Alta, and neighboring watershed communities to update the Wasatch Canyons Master Plan to reflect current canyon uses, issues, and objectives. Plan "area" should be expanded to include Bell, Middle Fork of Dry Creek, South Fork of Dry Creek, Rocky Mouth, and Big and Little Willow canyons.

10. Encourage appropriate and consistent water quality monitoring above and below developed watershed areas to assess effects on watershed resources, particularly water quality.
11. Assist neighboring communities, water providers, the Town of Alta, and Salt Lake County in developing a watershed-wide ordinance regulating the use of herbicides, pesticides, and fertilizers.
12. Encourage Salt Lake County and the Salt Lake Valley Health Department to draft and adopt a "mandatory connection" ordinance consistent with Sandy City's Sewage Disposal Ordinance (Sandy City Code - Title 18.).

## **E. DISPERSED RECREATION**

**OBJECTIVE:** Provide a framework that allows recreational usage in the watershed area without adversely impacting water quality.

Sandy City's watershed management decisions will reflect a priority to maintain existing high water quality standards in the Sandy Watershed, while accommodating recreational opportunities that do not compromise water quality.

Current uses within the watershed area include, but are not limited to:

- Camping/Backpacking
- Hiking & rock climbing
- Mountain biking
- Horseback Riding
- Fishing
- Swimming/Wading
- Skiing & Winter Recreation
- Picnicking
- Domestic Pets
- Off-Highway-Vehicle (OHV) Use (Alta Town)

This section presents Sandy City's watershed-wide policy toward recreation uses and associated watershed resources. Canyon-specific recreation objectives and policies begin on page 2-25.

### **RECOMMENDATIONS**

1. Cooperate with the Forest Service and Town of Alta to educate recreationists in watershed areas about appropriate uses of the areas.
2. Cooperate & coordinate with the Forest Service, Town of Alta, appropriate city and county agencies, civic groups, and special interest groups to enforce recreation policies in the watershed.
3. Draft a Memorandum of Understanding (MOU) between Sandy City and the Forest Service and Town of Alta outlining a management policy geared toward managing unanticipated changes in recreational use.
4. Work with private property owners and law enforcement to ensure that private property rights are ensured.
5. Inform/educate the Sandy City Parks & Recreation Department, Bonneville Resource Conservation & Development [RC&D], and Draper City concerning Sandy's watershed policies.
6. Provide sanitary facilities at high use areas and trailheads.
7. Provide sign-in sheets at all trailheads.

## **ACTIVITY-SPECIFIC RECOMMENDATIONS**

**CAMPING/BACKPACKING** - Consistent with current Forest Service regulations, the following guidelines will be implemented:

1. Camp, cook, wash dishes, bathe, and bury human waste at least 200 feet from water sources and established trails.
2. Do not introduce detergents or other chemicals into water sources.
3. Allow camping only in developed camping areas or by permit.
4. Limit groups in the back country to ten or fewer persons.
5. Practice "Leave No Trace" camping (pack out trash, stay no longer than 3 days in one spot, camp 100 ft from other campers, seek to reduce damages to vegetation and erosion).
6. Limit firewood collection to dead wood from the forest floor. No live trees will be taken. Do not build fires in high elevations that have short growing seasons. Drench all fires completely before leaving the area. Some areas are closed to fires.
7. Prohibit fires in the Lone Peak Wilderness Area.

**HIKING** - (Refer to *Sandy Parks & Recreation "Hiking Guide"*)

1. Remain on established trails to reduce trail impacts and erosion. No "shortcuts" on switchbacks.
2. Respect private property.
3. Pack out all trash.
4. Observe proper trail etiquette.
5. Sandy City will work with property owners to ensure trailhead and canyon access.

**ROCK-CLIMBING** - (Overnight expeditions can refer to camping for policies)

1. Pack out all trash.
2. Remain on established trails and routes.

**DOMESTIC PETS**

1. No unauthorized domestic pets above culinary water diversion points.
2. Observe Sandy City animal control policies in residential areas within the watershed plan area.

**EQUESTRIAN USE\***

1. Allow horse riding within the watershed on a permit basis.
2. Observe trail etiquette and respect private property. Take necessary steps to reduce trail erosion by staying on established trails and not "shortcutting" switchbacks.
3. Remove manure from the trail and ensure that it is not disposed within 200 feet of any water resource.
4. Access the canyons through identified access points.
5. Require horsemen using the back country to feed their animals Forest Service-approved "weed-free" hay.

6. Allow equestrian use of city parks/trails in the watershed area subject to the following conditions:
  - a. Horsemen must obtain a permit from the Public Utilities Department. The permit will specify number of horses and duration of permit.
  - b. Horsemen must complete a special watershed education course.
  - c. Equestrian use will be limited to facilities/trails specifically designed and identified for that purpose.
  - d. All equestrian staging sites (associated with watershed use) must be maintained to a standard established by the Public Utilities Department.
  - e. Equestrian interest-sponsored/performed watershed trail maintenance activities will be coordinated with the Forest Service, Sandy City Public Utilities, Sandy City Parks Department, and permit holders.
  - f. Permit holders must obtain permission from property owners to cross private property (as necessary).
  - g. Permit holders will assume responsibility for enforcing these regulations.

\*It should be noted that Sandy City reserves the right to prohibit this recreational use at any time or upon finding conclusive scientific evidence concerning the effects of horse use in watershed areas.

***MOUNTAIN BIKING***

1. Allow mountain biking only on trails designed and identified for that use.
2. Observe proper trail etiquette and give pedestrians the right of way.
3. Pack out all trash.

***SWIMMING***

1. Prohibit swimming in rivers, reservoirs, and lakes above culinary water diversion points.

***WINTER RECREATION/SKIING***

1. Observe current Forest Service policies governing these activities.
2. Prohibit unauthorized motor vehicles (snowmobiles; Off-Highway-Vehicles (OHVs), etc.) within the identified watershed area.

***PICNICKING***

1. Pack out all trash.
2. Allow fires only in developed campgrounds and fire rings.
3. Close day use areas at dusk.
4. Improve facilities in high-use areas as feasible.

***OFF-HIGHWAY-VEHICLE (OHV) USE***

1. Prohibit unauthorized OHV use within the identified watershed area.

## **F. RECREATION TRAILS & FACILITIES**

**OBJECTIVE:** Accommodate public recreational trails and facilities within the watershed as long as doing so does not compromise the City's primary watershed management priorities, i.e., protecting water resources and maintaining water quality. All trails and recreational facilities within the watershed will be sited, constructed, and maintained in a manner consistent with these objectives.

In general, trails traversing the lower watershed, including the Bonneville Shoreline Trail, will be "multi-purpose" trails designed to accommodate walking, jogging, and cycling. Trail corridors located below culinary water diversion points may also accommodate equestrian and domestic pet use. Upper watershed and "back country" trails will remain open to hiking and will be improved and maintained according to USFS "best management practices". A map of existing and proposed watershed-related trails can be found on page 2-35.

### **RECOMMENDATIONS**

1. Add "protect watershed resources" and "maintain water quality" to the criteria used in identifying trail corridors and the location of trail-side facilities.
2. Implement and enforce existing Sandy City Development Code "trail location and construction" regulations including the following:
  - trail alignments should follow natural topography
  - vegetation disturbance should be minimized
  - erosion must be controlled during construction
  - cuts and fills may not exceed two feet in height
3. Require setback (distance) requirements from streams and water bodies for all existing and proposed picnicking, camping, and restroom facilities. All trails will be located outside of the stream channel and recognized riparian zone unless adverse impacts can be mitigated.
4. Establish setback (distance) requirements between trails/facilities and water management buildings/structures (diversion points, etc.).
5. Locate trails and associated facilities below diversion points where possible.
6. Unless otherwise provided, require that trails and facilities accommodating horses and domestic pets be located below diversion points and regulated according to Sandy City's animal control ordinance including:

**Chapter 2 - Recommendations**

---

- All animals must be secured within an enclosure or adequately tethered
  - All animals using public rights-of-ways (including trails) and facilities must be on a leash or tether, and
  - Owners are responsible to clean up after their animals and dispose of waste in an approved receptacle.
7. Encourage USFS “best management practices” for trail construction and maintenance activities on all watershed trails.
  8. Promote and encourage appropriate trail use (and users). This may be accomplished through education (signage, etc.) and consistent enforcement.
  9. Require appropriate trail design and construction to minimize erosion and accommodate anticipated uses and levels of use.
  10. Mountain biking will be allowed only on trails designated and designed for that purpose.

## **G. WILDFIRE PREVENTION, MANAGEMENT & MITIGATION**

**OBJECTIVES: Coordinate with resource management entities and private property owners to protect watershed resources and decrease wildfire potential within the project area.**

**Develop a wildfire prevention, management and mitigation plan to proactively address watershed wildfire issues and protect water quality.**

Canyons within the Sandy watershed are characterized by dense, mature vegetation and steep slopes. Combine these factors with Utah's predominately dry climate and there is a high potential for large, catastrophic fires.

Direct fire damage to resources and property is only the initial consequence. Following a fire, burned areas are susceptible to additional problems (such as landslides, erosions, etc.) during and following subsequent storms. In extreme cases, excessive sediment and debris yield can adversely impact water quality. For these reasons, it is important that Sandy City consider developing and adopting fire prevention and post-fire mitigation strategies as part of their ongoing watershed resource protection efforts.

### **RECOMMENDATIONS**

1. Adopt and enforce, as necessary and appropriate, wildfire prevention measures within the watershed area. These may include, but are not limited to, seasonal restrictions on open fires and fireworks.
2. Research and review federal and state agency-adopted wildfire prevention and mitigation plans for approaches, guidelines and strategies applicable to the Sandy watershed area and the City's primary objective to protect water quality.

The City's wildfire prevention/mitigation plan may include the following:

- Preventative guidelines and enforcement strategies,
  - Post-burn runoff and debris control measures,
  - Revegetation guidelines, and
  - Situation management policies and procedures.
3. Partner with Salt Lake City Public Utilities and the Natural Resource Conservation Service (NRCS) to expand their ongoing wildfire/watershed planning efforts to include Sandy City's watershed.

## **H. FLOODWATER MANAGEMENT & MITIGATION**

**OBJECTIVE:** Coordinate with resource management agencies and watershed property owners to protect water quality through appropriate floodwater management and impact mitigation planning.

As described in Chapter 3, the City's watershed is characterized by high snow pack and steep, narrow canyons. Elevations within the watershed range from 11,489' (Twin Peaks, Little Cottonwood Canyon) to 5,043' (lower diversion, Little Cottonwood Canyon). All of the canyons in the identified watershed include elevations over 10,000' and vertical drops over 5,000' to their respective culinary water diversion structures (distance as measured from upper ridge lines to diversion structures). In most of the canyons, this drop in elevation occurs in less than 5 "stream miles" and creates a significant potential for uncontrolled flooding.

In recent history, gradual increases in springtime temperatures and the canyons' dense, mature vegetation have limited damage to property and resources during spring runoff and periods of storm-induced flooding. As anticipated, overall water quality is somewhat reduced during peak flows and immediately following storm events due to increased solids content and turbidity. Under most circumstances, existing debris collection/separation facilities are adequate. In extreme situations, corrective treatment/bypass procedures are implemented and water quality impacts kept to a minimum.

In order to maintain overall water quality and protect City facilities located within the project area, it is critical that the Public Utilities Department coordinate and cooperate with watershed resource managers and property owners to identify and address potential flood hazard issues. It is anticipated that these planning processes and activities will incorporate and complement the City's efforts to implement the Sandy City Storm Water Management Plan and address other watershed management issues identified in this plan including fire prevention and mitigation (Section G), and appropriate land use and development standards/guidelines for vegetation removal, grading, cuts and fills, and slopes (Section D).

### **RECOMMENDATIONS**

1. Partner with Salt Lake City, the United States Forest Service and other watershed property owners and interests to identify and address flood hazard related issues through a coordinated effort.

**Chapter 2 - Recommendations**

---

2. Research and review federal and state agency-adopted resource protection and flood prevention/mitigation plans for approaches, guidelines and strategies applicable to the Sandy watershed area and the City's primary objective to protect water quality through floodwater control and mitigation measures.

The City's floodwater prevention/mitigation plan for the watershed may include the following:

- Watershed-specific land use and development standards/guidelines for vegetation removal and restoration, grading, cuts and fills, and unstable slopes;
- Appropriate watershed uses and use levels/locations;
- Floodwater preventative/mitigation measures and guidelines addressing facility design, stream stabilization and riparian corridor restoration;
- Location of flood prevention and debris control facilities; and
- Situation management policies and procedures.



# I. CANYON-SPECIFIC GUIDELINES

**OBJECTIVE:** Implement canyon-specific watershed management objectives tailored to address the unique characteristics and uses of each canyon.

Sandy City's approach to watershed management includes watershed-wide policies covering such issues as education, partnerships, recreation, and land use/development. As applicable, canyon-specific recommendations address these issues based on each canyon's physical environment, use as a watershed resource, existing and anticipated uses, and ownership.

As part of their watershed plan, Sandy City has developed specific management recommendations for Little Cottonwood, Bell, Middle Fork of Dry Creek, South Fork of Dry Creek, Rocky Mouth, Big Willow, and Little Willow canyons as follows:

## RECOMMENDATIONS

**Little Cottowood Canyon** (The following recommendations were also adopted by Salt Lake City in their 1999 watershed plan.)

### RECOMMENDED MANAGEMENT APPROACH

1. Continue support of Alta Town's dog permit ordinance. Specific conditions include:
  - a. limited number and type of permits are available (number of permits based on resident population according to the most recent National Census....~1 permit/10 residents, currently 41 permits);
  - b. annual renewal process, both Alta Town and watershed tags are required;
  - c. three distinct license classes and accompanying use restrictions (full-time, part-time, and temporary);
  - d. mandatory leash law;
  - e. mandatory "bag" and "clean up" (includes dog runs and cages);
  - f. annual inter-department program assessment;
  - g. same household permit "transfers" only;
  - h. maximum one dog/household restriction;
  - i. ticket and "three strike rule" enforcement approach; and
  - j. time and location use restrictions (dog parks).
2. Work with Salt Lake City to revise and adopt an ordinance covering resident domestic pets outside of Alta Town limits (unincorporated areas).
3. Join Salt Lake City in developing a Memorandum of Understanding (MOU) with the Utah Department of Transportation (UDOT) to manage and

maintain canyon road surfaces with special attention to water quality (surface runoff, salt, and deicing, snow removal, etc.)

4. Work with Salt Lake City, the USFS, and the Town of Alta to develop an overnight, back country use permit system for the lake basins. Associated guidelines would be consistent with USFS "best-management-practices" covering group size, appropriate use areas, and "no trace" camping practices.
5. Monitor proposals to expand ski area interconnects and respond to potential impacts on watershed resources.
6. Participate in Salt Lake City's "land acquisition" program for Little Cottonwood properties. Sandy City funding commitments would be based on "amount not to exceed" and "percent of total funds" agreements.
7. Coordinate with the Town of Alta to monitor their review and approval of development proposals and building permits.

## **Bell Canyon**

### **RECOMMENDED MANAGEMENT APPROACH**

1. Manage Bell Canyon through a two-tier approach:
  - a. *Lower Bell Canyon* (Granite Divide Diversion to lower falls including Lower Bell Canyon Reservoir and surrounding trails) - permitted uses/activities include camping, hiking, fishing, and picnicking on approved trails and sites. Watershed resource management objectives may include improving sites and trails, mitigate impacts, and preserve water quality. Watershed resource protection activities may also include rehabilitation/revegetation of compacted soils and heavy use areas.
  - b. *Upper Bell Canyon* (lower falls to watershed boundary including upper falls, Upper Bell Canyon Reservoir and Lone Peak Wilderness Area) - permitted uses include hiking; climbing; and short-term, permit-based, back country camping. All "back country" activities would be regulated by USFS "best management" and "Leave No Trace" practices.
2. Extend the reservoir's existing "no domestic pet", "no horse" policy to include all areas/trails above any drinking water source diversion point.
3. Support the Utah Division of Oil, Gas, and Mining (DOG M) in their abandoned mine discharge monitoring. Solicit DOGM monitoring of existing sites.
4. Coordinate with Salt Lake County to review development proposals and building permits in adjacent unincorporated areas.

## **Middle Fork and South Fork of Dry Creek Canyon**

### **RECOMMENDED MANAGEMENT APPROACH**

1. Manage lands within Middle Fork of Dry Creek and South Fork of Dry Creek as "day use" only areas (park hours, dusk-to-dawn closure, etc.). Hiking and picnicking would be allowed on approved trails. Consistent with existing Water Pro policies; no camping, campfires, horses, or domestic pets will be allowed on Water Pro-owned properties within these canyons.
2. Allow hiking and rock climbing on USFS properties.
3. Improve trails/facilities as necessary and feasible to accommodate anticipated uses and use levels.
4. Secure and maintain adequate and convenient public access through private holdings and development. Include public access as a consideration of development approval.
5. Work with private property owners, including Water Pro, to implement appropriate sensitive lands and watershed development regulations if these areas are proposed for development.
6. Work with private property owners to address and mitigate water quality/resource impacts related to existing development and land uses.
7. Coordinate with Salt Lake County to review development proposals and building permits in adjacent unincorporated areas.

## **Rocky Mouth Canyon**

### **RECOMMENDED MANAGEMENT APPROACH**

1. Manage lower Rocky Mouth as a "day use" only area (park hours, dusk-to-dawn closure, etc.). Hiking and picnicking would be allowed on approved trails and sites. Horses and domestic pets are not permitted in this area.
2. Improve existing trail and facilities to/at the falls to accommodate use levels and decrease turbidity (improve water quality).
3. Allow hiking; rock climbing; and short-term, permit-based camping (as regulated by USFS "best management" and "Leave No Trace" practices) on USFS properties.
4. Work with private property owners to implement Sandy City sensitive lands and watershed development regulations as areas are development.

5. Work with private property owners to address and mitigate water quality/resource impacts related to existing development and land uses (waste water, drainage, waste disposal, etc.).
6. Coordinate with Salt Lake County to review development proposals and building permits in adjacent unincorporated areas.
7. Continue monitoring of naturally occurring contaminants (bat caves).

### **Big Willow Canyon**

#### **RECOMMENDED MANAGEMENT APPROACH**

1. Manage lower (Water Pro entrance gate to diversion) Big Willow as a “day use” only area (park hours, dusk-to-dawn closure, etc.). Hiking and picnicking would be allowed on approved trails and sites. Consistent with existing Water Pro policies; no camping, campfires, horses, or domestic pets will be permitted on Water Pro-owned properties within in the canyon.
2. Allow hiking; rock climbing; and short-term, permit-based camping (as regulated by USFS “best management” and “Leave No Trace” practices) on USFS properties.
3. Improve trails and facilities as necessary to accommodate anticipated uses and use levels.
4. Work with private property owners, including Water Pro, to implement appropriate sensitive lands and watershed development regulations as these areas are proposed for development.
5. Coordinate with Salt Lake County to review development proposals and building permits in adjacent unincorporated areas.

### **Little Willow Canyon**

#### **RECOMMENDED MANAGEMENT APPROACH**

1. Maintain quality of Little Willow water resources for potential culinary use.
2. Manage lower Little Willow (Bonneville Shoreline Trail to Water Pro diversion point) as a “day use” only area (park hours, dusk-to-dawn closure, etc.). Hiking and picnicking would be allowed only on approved trails. Consistent with existing Water Pro policies; no camping, campfires, horses, or domestic pets will be permitted on Water Pro-owned properties within the canyon.

3. Allow hiking; rock climbing; and short-term, permit-based camping (as regulated by USFS "best management" and "Leave No Trace" practices) on USFS properties.
4. Coordinate with Salt Lake County to review development proposals and building permits in adjacent unincorporated areas.

## J. PROVO RIVER WATERSHED

**OBJECTIVE:** Take an active role in Provo River watershed management issues. Maintain a cooperative partnership among Provo River watershed interests (State Division of Water Resources, Provo River Water Users Association, Jordanelle/Deer Creek Technical Advisory Committee, etc.) to improve Provo River watershed conditions and protect water quality. (For purposes of this study, the identified Provo River watershed includes trans-basin diversions from the Duchesne and Weber Rivers.)

### RECOMMENDATIONS

Currently, Sandy City's interests in Provo River watershed management issues are represented and addressed through the Metropolitan Water District of Salt Lake City & Sandy (Metro) and their involvement with the Jordanelle/Deer Creek Technical Advisory Committee. As a contributing Metro member, the City will utilize District resources and expertise to pursue the following objectives:

1. Educate community leaders and citizens to recognize the Provo River drainage as a legitimate Sandy City watershed interest.
2. Identify and foster Provo River watershed interests, management agencies, and potential collaborative partnerships.
3. Actively participate in Provo River watershed planning and decision-making processes. This effort includes ensuring adequate representation and participation on applicable boards and committees.
4. Assist Mountainlands Association of Governments (MAG) in their implementation of the Provo River Scenic Byway and Watershed Management Plan. This effort includes, but is not limited to, partnering with other Provo River watershed interests to accomplish the following:
  - a. establishing a comprehensive data base (including resource maps and water quality data) for the Provo River and its tributaries;
  - b. assisting in data analysis to identify trends and water quality issues;
  - c. establishing water quality standards and associated monitoring schedules;
  - d. identifying "best management practices" (BMPs) for Provo River watershed activities and land uses;
  - e. developing appropriate mitigation measures for existing/potential water quality impacts;

## **Chapter 2 - Recommendations**

---

- f. developing ordinances to ensure compliance with water quality protection measures and objectives; and
- g. encouraging periodic reviews of the plan and associated objectives to evaluate progress and revise as appropriate.

# Sandy City Watershed Trails Map



## Legend

- |                  |                              |
|------------------|------------------------------|
| <b>Watershed</b> |                              |
|                  | Upper Little Cottonwood      |
|                  | Lower Little Cottonwood      |
|                  | Upper Bell Canyon            |
|                  | Lower Bell Canyon            |
|                  | Dry Creek / Middle/So Fork   |
|                  | Rocky Mouth                  |
|                  | Big Willow                   |
|                  | Little Willow                |
|                  | Waterways                    |
|                  | Treatment Plants             |
|                  | Diversions                   |
| <b>Trails</b>    |                              |
|                  | Existing 8 ft Multi-Use Path |
|                  | Existing Bike Path           |
|                  | Existing Equestrian Path     |
|                  | Existing Pedestrian Path     |
|                  | Future Bike Path             |
|                  | Future Equestrian Path       |
|                  | Future Multi-Use Path        |
|                  | Future Pedestrian Path       |



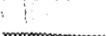
Date: 4/02/2001

# Sandy City Watershed Trails Map



## Legend

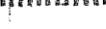
### Watershed

-  Upper Little Cottonwood
-  Lower Little Cottonwood
-  Upper Bell Canyon
-  Lower Bell Canyon
-  Dry Creek / Middle/So Fork
-  Rocky Mouth
-  Big Willow
-  Little Willow

### Waterways

-  Treatment Plants
-  Diversions

### Trails

-  Existing 8 ft Multi-Use Path
-  Existing Bike Path
-  Existing Equestrian Path
-  Existing Pedestrian Path
-  Future Bike Path
-  Future Equestrian Path
-  Future Multi-Use Path
-  Future Pedestrian Path



Date: 4/02/2001