

**Network Design -
Recreational Assets**

Datasets include parks, trails, golf courses, marinas, open spaces, ski areas, water bodies and waterways, public lands, habitat for popular game species, cooperative wildlife management units, major roads, transit lines & canals.



Project Goals for the Wasatch Front Regional Recreational Infrastructure:

A. Protect and enhance the parkland, open space, connecting land and water corridors of the Wasatch Front, to provide outdoor recreation opportunities such as fishing, hunting, wildlife viewing, paddling, camping, and all trail-based activities.

B. Provide and improve/strengthen the vibrant network of parks, trails, scenic qualities, recreation amenities, and natural lands in the Wasatch Front.

RECREATIONAL NETWORK CRITERIA		
CORES	SIGNIFICANCE/EXPLANATION	FURTHER RESEARCH
1. Regional trail Assets and Priorities	Regionally significant trails provide the backbone for the region's recreational GI network. ¹ Includes national historic trails, national recreation trails, and regionally significant trails identified by each county. Data from AGRC, WFRC and USFS.	
2. Regional Park Assets and Priorities	Regionally significant parks provide the backbone for the region's recreational GI network ² ; If regionally significant parks were not available, minimum park sizes were incorporated. Community parks classification (over 20 acres) were employed within this study. Also includes all state parks. Data from AGRC.	<i>Further refinement of community priorities and levels of service should be incorporated into individual city or county planning efforts. Parks can be prioritized by proximity to number of people in the prioritization stage.</i>
3. Regional Natural Lands Assets and Priorities	Regionally significant open spaces provide the backbone for the region's recreational GI network ³ Also includes the Great Salt Lake, Jordan River, Ogden River, Antelope Island as per discussions with county planners and others for open space priorities. Data from AGRC.	
4. Golf courses, marinas, and ski hills.	Other regional amenities that provide significant value. Data from AGRC.	
5. Major waterways, permanent streams, and lakes	Serve as wildlife viewing areas, fishing, boating, etc. opportunities. Data from AGRC.	
6. Scenically-rich areas of the Wasatch Front.	The Wasatch Front represents one of the most scenically-rich areas in the country.	<i>Not currently mapped. Establish criteria for how to determine these scenic areas in future mapping efforts.</i>

Exclusion Factors:		
1. T&E Species areas	Remove areas with T&E species within them to protect their habitat.	<i>Not currently mapped. We do not have access to these data at this time – update this section as data become available.</i>
HUBS	SIGNIFICANCE/EXPLANATION	FURTHER RESEARCH
1. Protected lands or public lands with recreational assets within them (includes the public lands that allow recreation, e.g., hunting, skiing, hiking etc. within them).	Protected lands have a higher likelihood of providing permanent GI recreational services. Inclusion of protected lands is well-documented ⁴ . Includes public lands that allow recreational-related access, including US Forest Service, BLM, NPS and State-owned lands that allow recreation (DNR).	<i>Update this list as necessary.</i>
2. Other open space, not identified as core areas, that connect into the core areas	Connectivity into the core system strengthens the overall recreational opportunities for the region. Data derived from the National Land Cover Dataset (developed – open space category).	<i>Incorporate site specific data as it becomes available.</i>
3. Intermittent streams, washes, canyons, etc.	Washes and intermittent streams are used for recreational access. Data from AGRC.	
4. Crucial or substantial habitat areas for popular game species (more than 1 species).	Includes all habitat data for areas within the Wasatch Front that is available ⁵ , based on UDWR publications.	<i>Many species data do not exist. See note below.</i>
5. Cooperative wildlife management units within the Wasatch Front	UDWR works with private landowners to maintain private lands for wildlife habitat. While these areas are not permanently protected, they do offer significant indirect value to the area’s recreational opportunities. Data from UDWR.	
Exclusion Factors:		
1. T&E Species areas	Remove areas with T&E species within them to protect their habitat.	<i>Not currently mapped. We do not have access to these data at this time – update this section as data become available.</i>
CORRIDORS	SIGNIFICANCE/EXPLANATION	FURTHER RESEARCH
1. Trails, both regional and local	Trails facilitate recreational access and provide recreational opportunities. Data from AGRC and counties.	

2. Major rivers	Rivers are used for water-based recreational activities and facilitate recreational mobility. Data from AGRC.	
3. Scenic Byways	Scenic driving is an important recreational activity, and these routes provide access to recreational sites. Data from AGRC.	
4. Transit Lines	Transit lines are used for access to and from recreational sites. Data from AGRC.	
5. Transit Stops	Transit stops facilitate mobility to and from recreational destinations. Data from AGRC.	
Suitability Factors		
1. Habitat corridors – rank these less than other potential corridors	Many species are sensitive to recreation and thus, habitat corridors should be designed around when possible.	<i>Not currently mapped. Species corridor modeling was beyond the scope of this project. It should be considered in future planning efforts.</i>

¹ Regionally significant trails are as follows: Salt Lake (From Salt Lake County Parks and Recreation Master Plan 2005): Jordan River Trail, Bonneville Shoreline Trail, Great Western Trail, Mormon Pioneer Trail, Pony Express Trail, Donner-Reed Trail, Parley's Creek, Dimple Dell Trail, Utah & Salt Lake Canal Trail, and the Decker Trail; Morgan County: trail corridor along the Weber River (Envision Morgan 2008); Davis County: Bonneville Shoreline Trail, Legacy Trail, Denver and Rio Grande Rail Trail, east-west connections.

² Regionally significant parks are as follows: Salt Lake (From Salt Lake County Parks and Recreation Master Plan 2005): Equestrian Park, West Jordan Soccer Complex, Big Cottonwood Regional Park, South Cottonwood Regional Park, Welby Regional Park, Valley Regional Park, Redwood Regional Park, and Sugarhouse Park. Weber County: use min. size thresholds; Morgan County: use min. size thresholds; Davis County: using min. size thresholds; Tooele County: using min. size thresholds.

³ Regionally significant open spaces are as follows: Salt Lake County (From Salt Lake County Parks and Recreation Master Plan 2005): Dimple Dell Regional Park, Millcreek Canyon Regional Park, Yellow Fork Canyon Regional Park, Jordan River Parkway; Davis County: Antelope Island; Other regionally significant open spaces are the Great Salt Lake, Jordan River & Ogden River.

⁴ See Utah DFFSL 2010. The DFFSL Statewide Assessment document is available at <http://www.ffsl.utah.gov/stateassessment.php>.

⁵For the following game species, GIS data were available for download from AGRC: band-tailed pigeon, blue grouse, California Quail, Gambel’s Quail., Hungarian Partridge, ring-necked pheasant, ruffed grouse, sage grouse, sharp-tailed grouse, white-tailed ptarmigan, wild turkey, black bear, bison, desert bighorn sheep, elk, moose, mountain goat, mule deer, pronghorn, Rocky Mountain Bighorn Sheep, and snowshoe hare. Note that the following species do not have crucial or substantial habitat within the Wasatch Front (as per GIS data downloaded from UDWR): Gambel’s Quail, white-tailed ptarmigan, and the desert bighorn sheep. Species GIS data was not available for the following species: bobcat, beaver, marten, mink, badger, gray fox, kit fox, red fox, cougar, ring tail, spotted skunk, striped skunk, weasel, sandhill crane, prairie dog, cottontail rabbit, or the Eurasian collared dove.

Recreational Asset Network Criteria – Design Process**Recreational Cores**

1. Create a new toolbox in ArcCatalog for Recreational modeling - ~RecreationalAssets
 - A. #1 Core Criteria – regional trails
 - i. Merge together the historic trails, urban trails, cross country ski trails and priority trails (in footnote 2) → all_trails
 - ii. Buffer by 50 feet → all_trails_50ftbuff
 - iii. Convert to raster → trails_50ft
 - iv. Reclassify to 0 and 1 for analysis → *rc_trails50ft*
 - B. #2 Core Criteria – regional parks
 - i. Select parks that meet the core criteria described above and in footnote 3 → all_parks_over20ac1
 - ii. Convert to raster → reg_parks2
 - iii. Reclassify to 0 and 1 for analysis → *rc_regparks3*
 - C. #3 Core Criteria – regional open spaces
 - i. Merge together open space areas listed in footnote 3 → regionalopenspace4
 - ii. Convert to raster → reg_open1
 - iii. Reclassify to 0 and 1 for analysis → *rc_regopen1*
 - D. #4 Core Criteria – other regional amenities
 - i. Merge together golf courses, marinas, ski lifts and ski hills → important_recareas
 - ii. Convert to raster → recareas1
 - iii. Reclassify to 0 and 1 for analysis → *rc_recareas1*
 - E. #5 Core Criteria – major waterways, permanent streams, and lakes
 - i. Merge together major waterways, permanent streams, and lakes → rec_waterways
 - ii. Convert to raster → rec_waterway
 - iii. Reclassify to 0 and 1 for analysis → *rc_recwater*
2. Merge together the core criteria 1-5
 - A. Use single output map algebra to add the above final, reclassified rasters together → rec_cores3
 - B. Use the reclassify tool to change any value above 1 to a 1 and 0 values to NoData → *rc_reccores3*

Recreational Hubs

1. Develop hub criteria
 - A. #1 Core Criteria – protected and public lands with recreational assets
 - i. Select all public lands that allow recreation – BLM, US Forest Service, DNR, NPS. Merge into one layer → recreationallandowners_all
 - ii. Convert to raster → prot_reclands
 - iii. Reclassify to 0 and 1 for analysis → *rc_protreclan*
 - B. #2 Hub Criteria – open spaces that provide recreational connectivity
 - i. Convert rc_protreclan to vector → rc_protectland
 - ii. Merge rc_protectland with the trails_6ft, regionalopenspace3, Parks_OpenSpace and NLCD_openspace layers → prot_rechub1
 - iii. Convert to raster → rec_prothub1
 - iv. Reclassify to 0 and 1 for analysis → *rcprotrechub1*

- C. #3 Hub Criteria – intermittent washes, streams, etc.
 - i. Convert intermittent streams, washes, etc. (all_hydrology_hubs) to raster→recwater_int
 - ii. Reclassify to 0 and 1 for analysis→rc_rech20int
 - iii. Use single output map algebra to add the rc_rech20int to the rc_recwater layer →allhydro_hubs
 - iv. Reclassify to 0 and 1 for analysis→rc_allhydro
- D. #4 Hub Criteria – wildlife habitat
 - i. Game birds – use single map algebra to add each of the game birds species together, includes California Quail, Blue Grouse, Chukar, Hungarian Partridge, Ruffed Grouse, Sage Grouse, Sharp-tailed grouse, ring-necked pheasant and wild turkey→uplandgame1
 - 1. Reclassify the uplandgame1 to only include areas with 2 or more values as 1 →rc_uplndgme
 - ii. Big game – use single output map algebra to add each of the big game species together, including bison, black bear, elk, bighorn sheep, pronghorn, moose, mountain goat, mule deer and snowshoe hare→biggame
 - 1. Reclassify the biggame to only include areas with 2 or more values as 1 →rc_biggame
 - iii. Merge rc_uplndgme with rc_biggame→wildlifehab2;
 - iv. Reclassify to only include values of 0 and 1→rc_wildlife
- E. #5 Hub Criteria – Cooperative Wildlife Mgmt Units
 - i. Convert the CoopWMUs shapefile to raster→CWMUs
 - ii. Reclassify to 0 and 1 for analysis→rc_CWMUs
- 2. Merge together hub criteria
 - A. Use single output map algebra to add the above final, reclassified rasters together→rec_hubs1
 - B. Use the reclassify tool to change any value above 1 to a 1, and then all nodata values to 0→rc_rechubs1

Recreational Corridors

- 1. Develop corridor criteria
 - A. #1 Corridor Criteria – Trails
 - i. Buffer all trails by 50m → trails_50mbuff
 - B. #2 Corridor Criteria – Major Rivers
 - i. Buffer major_rivers by 150ft → majorrivers_buffer150ft
 - C. #3 Corridor Criteria – Scenic Byways
 - i. Buffer scenic_byways by 50m → Scenic_Byways_50mbuffer
 - D. #4 Corridor Criteria – Transit Lines
 - i. Buffer light rail and commuter rail lines by 50m → transit_lines_50mbuffer
 - E. #5 Corridor Criteria – Transit Stops
 - i. Buffer light rail and commuter rail stops by 50ft → Transit_Stops_50ftbuffer
- 2. Merge together corridor criteria.

Final Shapefiles for Agencies & Organizations

Merged Cores	Recreational_Cores
Merged Hubs	Recreational_Hubs
Existing Corridors	Recreational_Corridors

ASSET NETWORK CRITERIA AND MAPPING PROCESS

September 9, 2012

Note – merged files have been dissolved by layer – data is extremely simplified.

Core #1 – Recreational trail assets	Trails_50ftbuffer
Core #2 – Regional park assets	Parks_Over_20Ac
Core #3 – Regional natural lands assets	Regional_Open_Space
Core #4 – Golf courses, marinas, ski hills	Golf_Ski_Marina
Core #5 – Major waterways, permanent streams, lakes	Recreational_Waterways_Lakes
Core #6 – Scenically-rich areas	Not mapped
Hub #1 – Protected lands with recreational assets	Protected_Recreational_Lands
Hub #2 – Other open space not included in core designations	Other_Parks_OpenSpace
Hub #3 – Intermittent streams & washes	Intermittent_Streams_Washes
Hub #4 – Game species habitat	Wildlife_Habitat
Hub #5 – Cooperative wildlife management units	Coop_Wildlife_Mgmt_Units