

Identifying optimal locations for turf removal in Utah's State Lands

Starting with Utah State

INSPIRATION

Geospatial Environmental Planning
Water Conservation for the Great Salt Lake
Utah Pollinator Habitats Program

PROBLEM

Water wise landscaping conversions often does not include solar radiation as factor in where to remove grass.

PURPOSE

Visualize our impact to water consumption, solidify bill goals, generate further policies regarding water use, pollinator habitats, and turf area.

METHODS

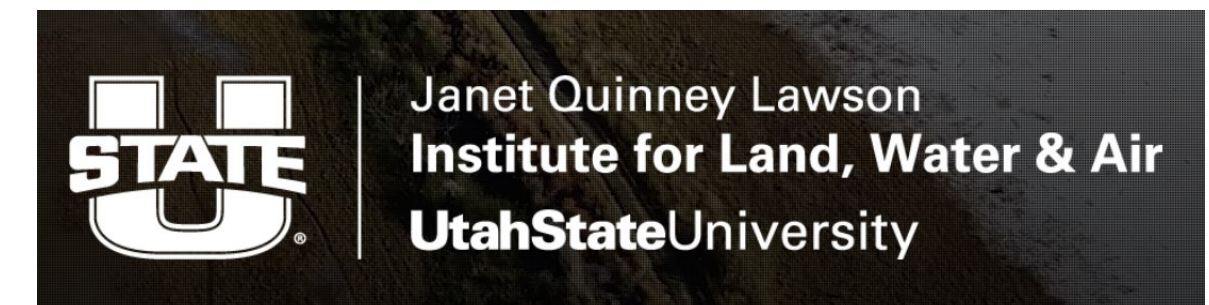
- **Data Collection**
Selection Criteria:
 1. LiDAR
 2. Building Footprints
 3. Topography
 4. Green Space
- **Solar Analysis**
- **Identify Conversion Areas**
Selection Criteria:
 1. Underused Spaces
 2. South Side of Buildings
 3. Areas Close to the Road
 4. High Levels of Solar Radiation
- **Visualize Potential**
- **Calculate Water Saved**



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Masters of Science Environmental Planning

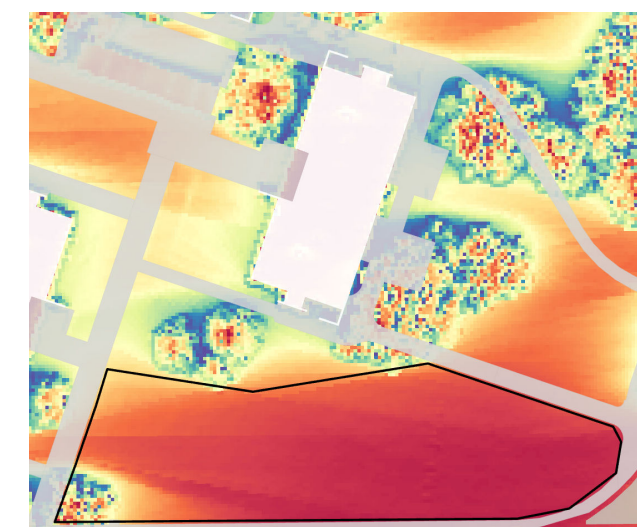
BRENT CHAMBERLAIN
Faculty Mentor

Water Efficient Landscaping at Utah State University

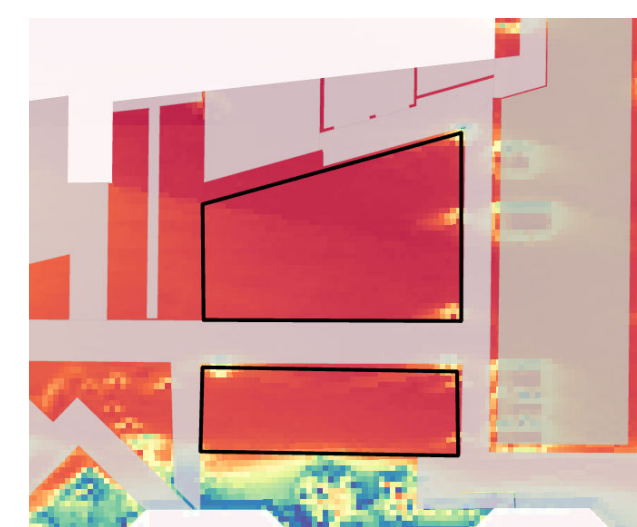


UtahStateUniversity
LANDSCAPE ARCHITECTURE &
ENVIRONMENTAL PLANNING

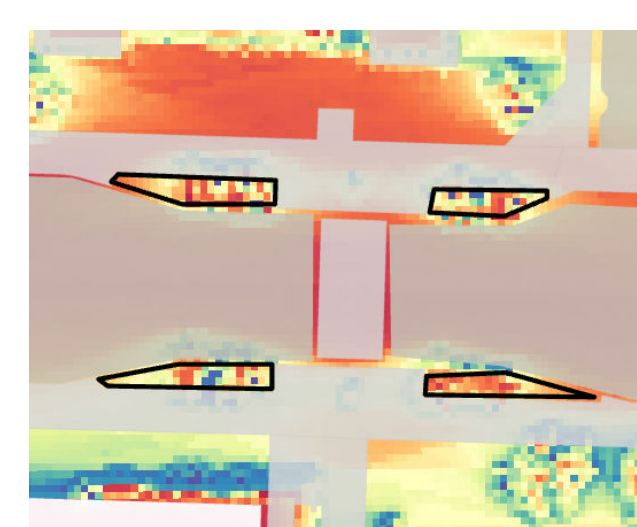
Rich Hall
10,871 sq ft



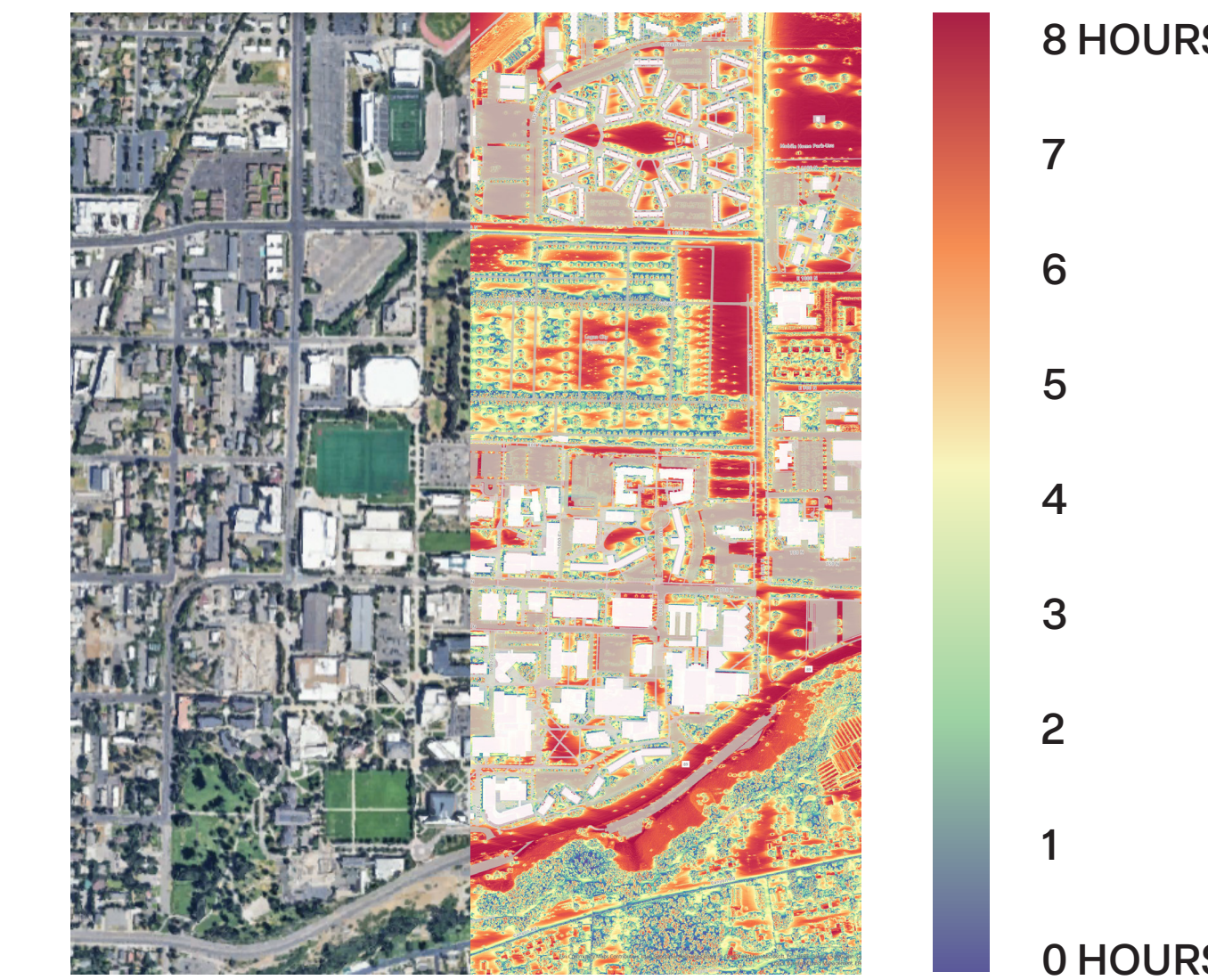
Life Science
3,500 sq ft



Aggie Blvd
180 sq ft each

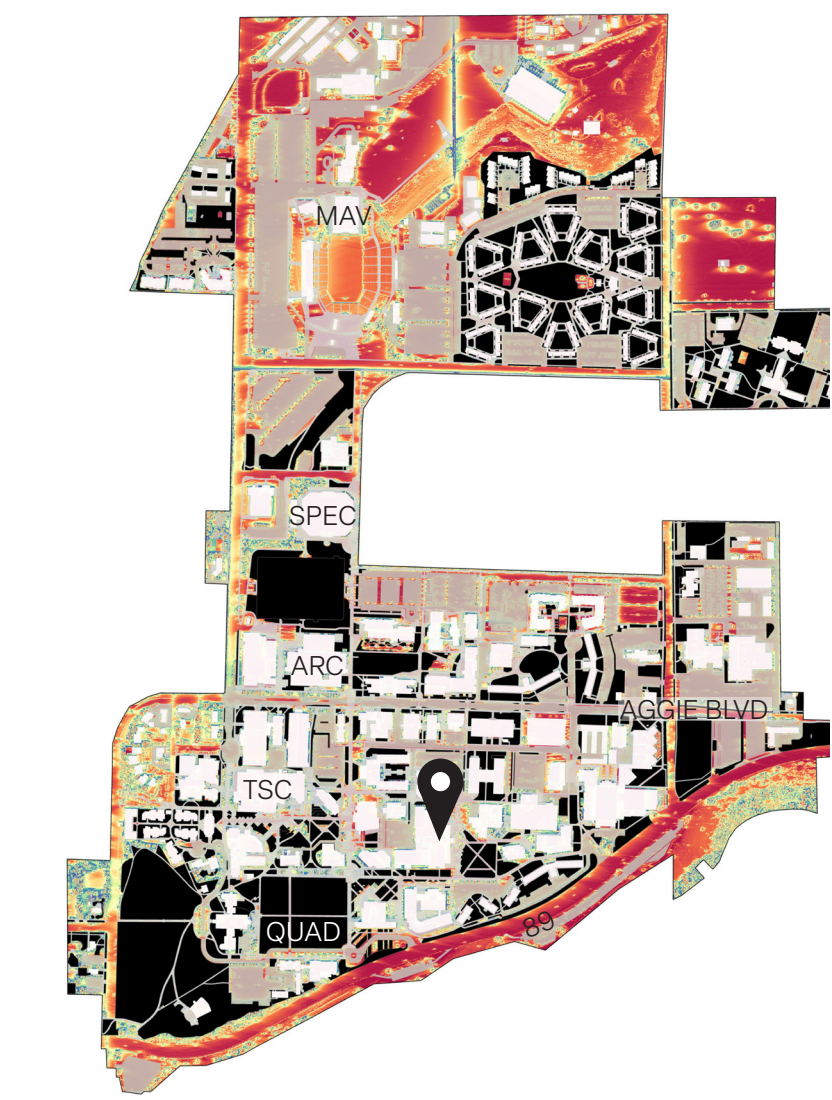


WHAT IS SOLAR RADIATION?



The hours of sunlight a given area receives per day on average per year.

- Factors:
- Geographic
 - Location
 - Growing Season
 - Local Weather
 - Local Landscapes



Existing Grass
1,139,000 sq ft
20 football fields
105 residential lawns
\$485,000
Watering Grass
\$51,000
Watering Plants
26,830,000
Gallons of Water

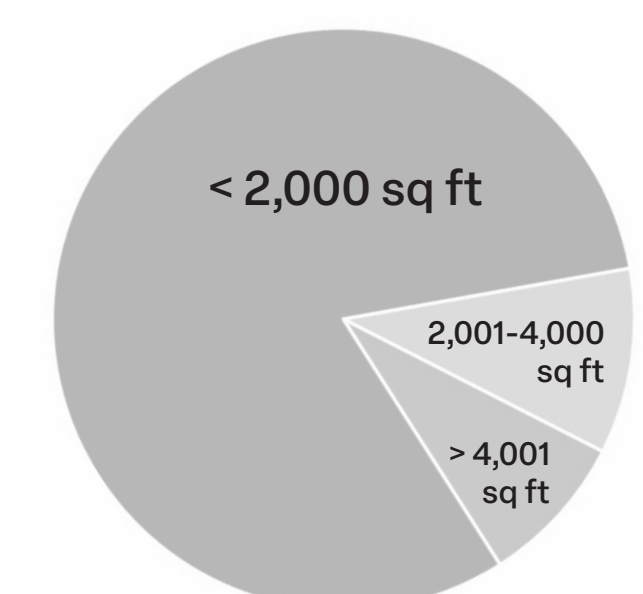
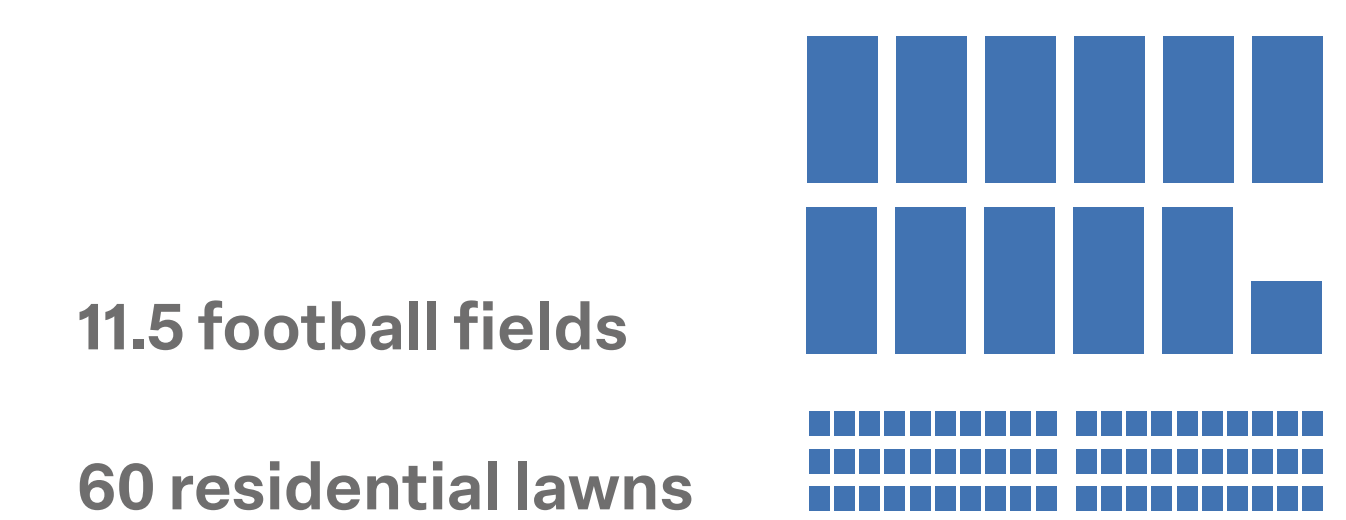
PROPOSED CONVERSION AREAS



Removed Grass
494,000 sq ft
8.5 football fields
45 residential lawns

\$209,000
Watering Grass
\$156,000
Watering Plants
18,245,000
Gallons of Water

8 MILLION
GALLONS OF WATER PER YEAR
SAVED.



Conversion Space Areas

That's nearly 500,000 sq ft converted! It's hard to see many of the sections at this scale because the average area of proposed spaces are only 1,500 sq ft.