

Mapping Curbside Delivery of Secondary Water in Urban Areas of Cache Valley, Utah

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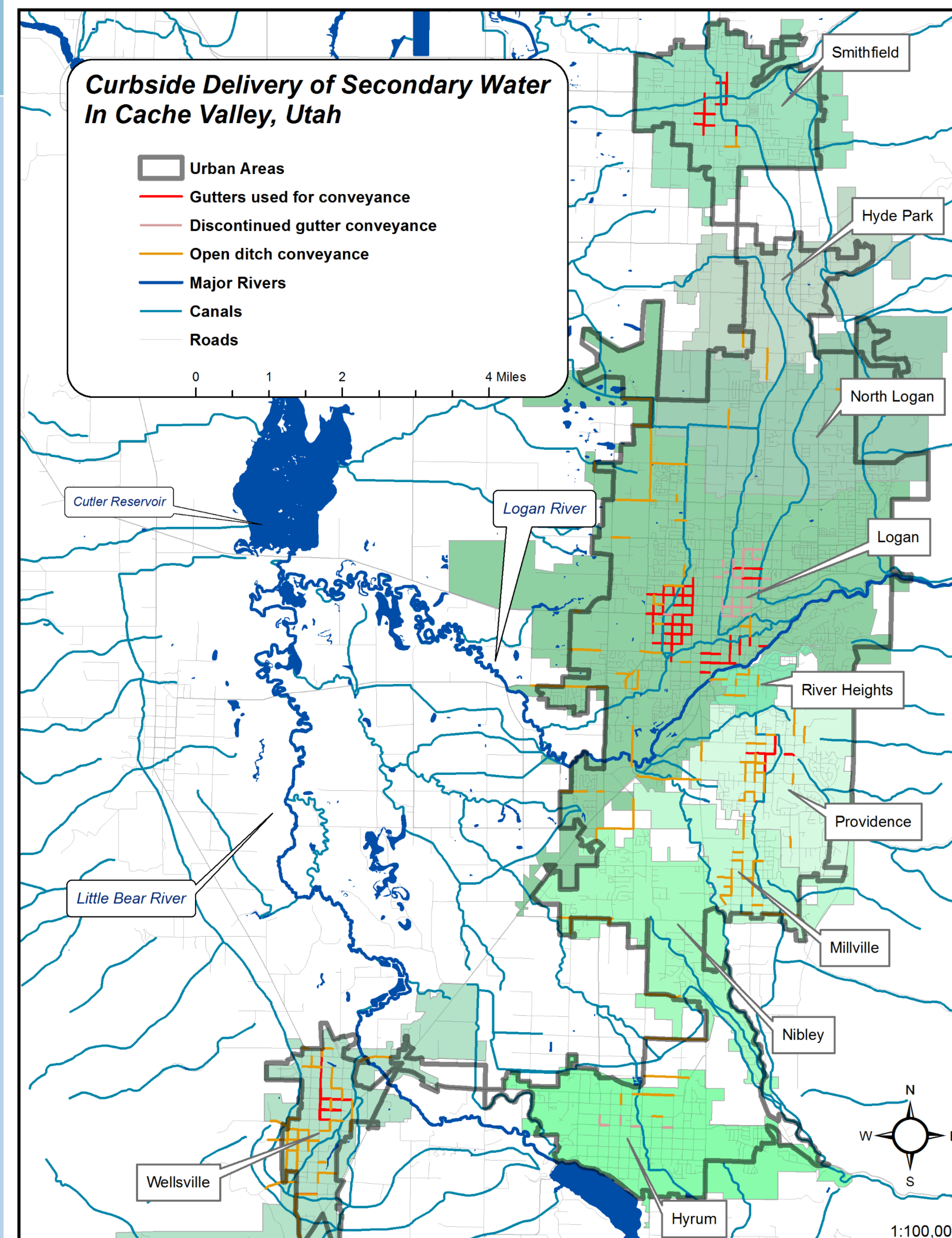
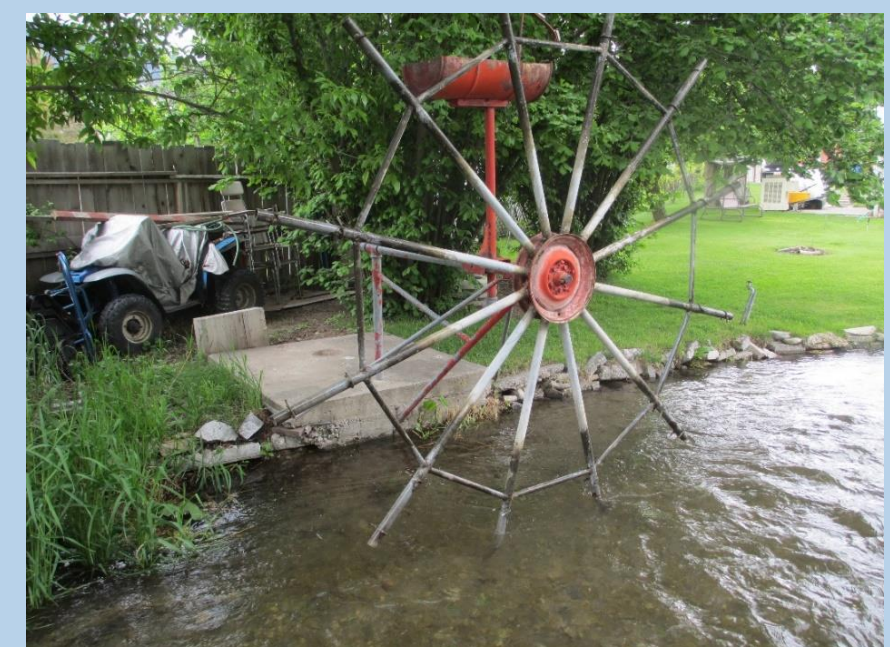
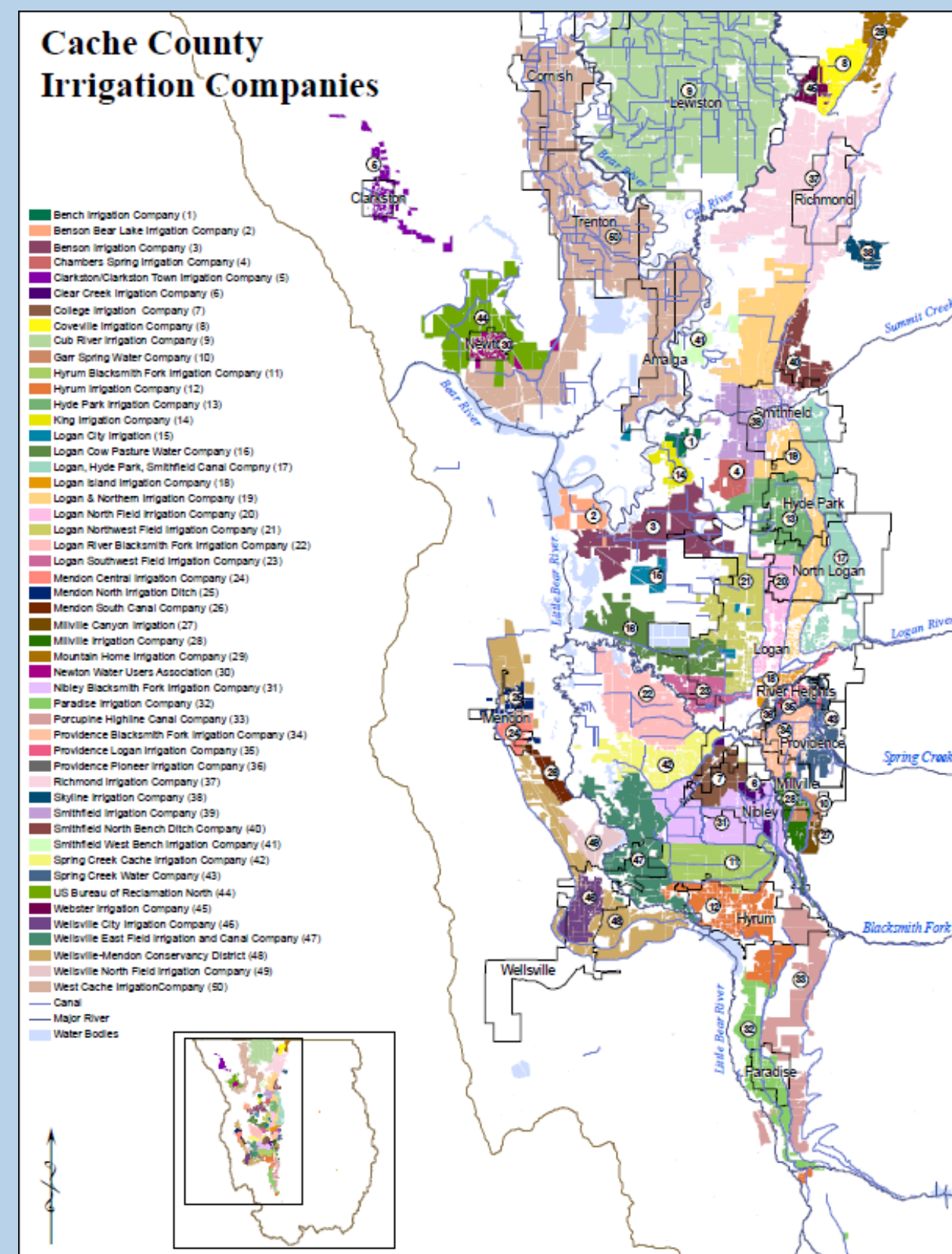


Background

- When Cache Valley, Utah was initially settled, canals were constructed to convey irrigation water from local rivers to developing communities for irrigation. As urban neighborhoods grew, water was conveyed through the city from canals to individual properties using city street gutters.
- These are secondary water rights and are organized through a complex system of water rights and 48 management districts.
- Today, many neighborhoods in the historic sections of these early settlements continue to flood their property and retain their secondary water rights.
- The purpose of this study is to map Cache Valley urban areas where city streets convey secondary water used for flood irrigation.

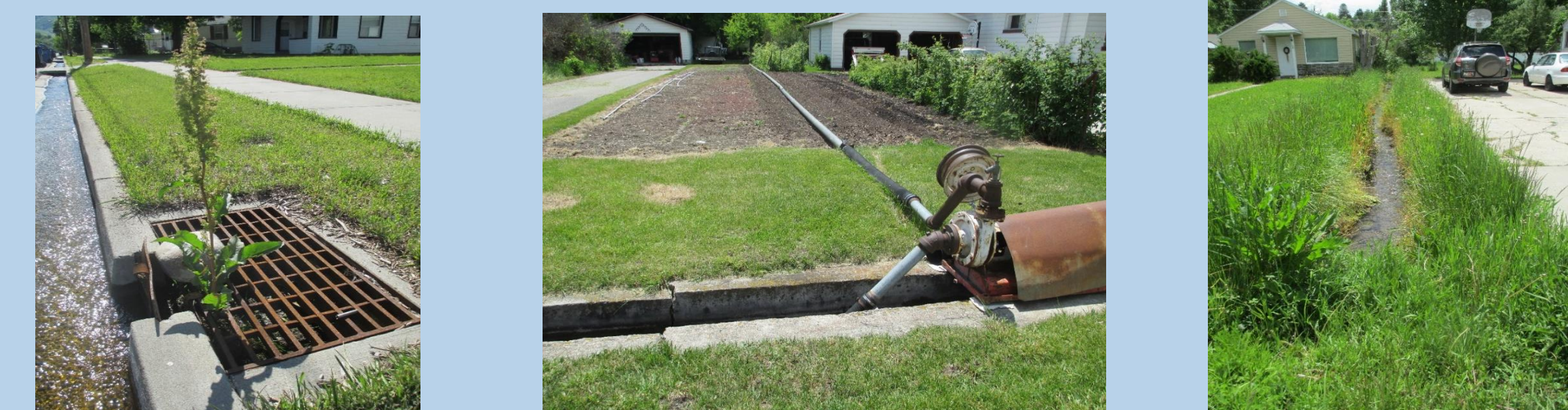


Top: A small bridge crosses over an open ditch that crosses through someone's lawn. Side: A map of Cache County Irrigation Companies created by Cache County's GIS office. Bottom: A simple watermill alongside a canal.



Gathering Data

- Reference maps of urban areas were created to be used in the field to map at a city block scale
- Walking, biking, driving, and *Google Earth* were used to identify and clarify Curb types
- A feature class for curbs was drawn manually in ArcGIS to delineate conveyance gutters



Top Left: A gate alongside a gutter that allows water to be diverted. Top Middle: A pump fitted over a diversion canal. Top Right: A small diversion canal sending water between property. Bottom Left: Secondary water being conveyed through gutters. Bottom Right: An ornamental watermill fitted over a diversion gate. Top of Poster: Secondary water being conveyed through gutters.



Why Does This Matter?

- This is a unique method closely tied to the cultural roots of the area
- Future studies can focus on these areas for effectiveness, benefits, and risks. Secondary water use accounts for more than 20% of Cache County's municipal water use
- Understanding street gutter conveyance will aid in future work to determine how changes in water delivery may impact the integrated water systems of Cache Valley