Extending the Reach of MPO GIS and Modeling Work

AMPO GIS Webinar
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Greetings from Salt Lake City!
Utah is a State of contrasts…

...with some of the most remote lands in the lower 48.
But, from a resident’s perspective, it is among the most urban states in the U.S.
But, from a resident’s perspective, it is among the more urban states in the U.S.
Wasatch Front Urban Area
(pop 2.4M)

WFRC MPO Area
Pop. 1,770,000
(2019 est.)

Mountainland MPO Area
Pop. 645,000
(2019 est.)

~55% of Utahns

~20% of Utahns

5 yr. annualized GDP growth rate through Q1 2020:
+3.4% (#2)

Source: 247wallst.com
Wasatch Front Residential Density

2015 Residential Density (By TAZ)
Making the Most of Mapping “Platforms”

WFRC’s Primary Responsibilities

• Transportation Planning
• Investment & Coordination
• Regional Visioning
• Economic Development
• Quality of Life
Making the Most of Mapping “Platforms”

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• Regional Visioning
• Economic Development
• Quality of Life
Finding the Right Balance….

- **Audiences: Decision Makers vs. Technical Staff**
  - User Friendly vs. Powerful
  - Overview vs. Focused Detail

- **Transportation vs. Related (Land Use, ED, etc)**

- **Current vs. Forecasted/Planned Future**

- **“Blurring the Lines”**
  - *The map _is_ the plan???
  - “For us” → “For our region”
Our GIS Evolution

1. Enhancing the basics

2. Extending the reach
   - Exposure to more audiences
   - User friendliness
   - Leverage GIS’s power of integration

3. Taking on more detailed topics and technical tools
Modest Upgrades

- Upgrade existing WFRC maps
- Esri Apps
  - Story Maps
  - Web AppBuilder apps
- Tools
  - Explanatory text
  - Public commenting
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Expanding the Reach & Effectiveness

- Vision vs. RTP & TIP Transportation Planning Work
  - *The Future is an Integrated System*, not just a Set of Projects

- How to Increase the *Presence* of the Wasatch Choice?
  - Heightened Awareness → Strive to Increase “Impressions”
  - *Emulate the Integration* of Transportation, Land Use, Econ Dev, Quality of Life
  - Vast Set of Information Always “At Your Fingertips”
  - “Eating our own dogfood”
    - For reference
    - For stories
    - If it doesn’t work for us, it won’t work for others
Wasatch Choice Vision Poster & Map

A time machine to...

2050

- Multimodal
- Urban & Local Centers
- Quality of Life
- Greenspace

- “Big Fish” Why’s & How’s
- Unique Regional Map invites exploration

Captain Marvel 5’7”
Wasatch Choice Vision Poster & Map

- Objectives:
  - Turn the poster into a web app
  - Add supporting data & information

- Components
  - Vision (poster)
  - Transportation
  - Land Use
  - Economic Development
  - Recreation / Open Space
Wasatch Choice Map

https://wfrc.org/wasatch-choice-map
Wasatch Choice Map v1

- Possible solution: Web AppBuilder + Story Map Series?
A key strategy of the Wasatch Choice 2050 Vision is to provide transportation choices.

Major transportation projects, like freeways, rail & bus transit, interchange upgrades, widenings, and even regional trails or bikeways get their start through inclusion in the Regional Transportation Plan (RTP). RTPs are updated every four years and typically plan 25 or more years into the future.

This map shows projects in the most recent 2019-50 RTPs that were adopted by the respective boards of elected officials for the Wasatch Front Regional Council (WFRC) and Mountain Association of Governments (MAG) metropolitan areas.

Prior to adoption, the projects were prioritized after considering technical analysis of impacts and benefits and public input.
Wasatch Choice Map 2050

**VISION FOR OUR FUTURE**
Utah is growing... and we have a plan. Our future quality of life depends on the choices we make today. Wasatch Choice 2050 is our communities’ shared vision for transportation investments, development patterns, and economic opportunities. The Vision map and key strategies show how advancing the Vision can enhance quality of life even as we grow.

**Key Strategies**
The Wasatch Choice 2050 Vision is built on four key strategies:

1. **Provide transportation choices**
2. **Support housing options**
3. **Preserve open space**
4. **Link economic development with transportation and housing decisions**

**Benefits of the Vision**
Implementing the Wasatch Choice 2050 Vision promotes high quality of life now and for generations to come.

- Livable and healthy communities
- Access to economic and educational opportunities
- Manageable and reliable traffic conditions
- Safe, user-friendly streets

**Filter**
- Transportation
- Roads
- Transit
- Bike/Ped
- Land Use
- Centers
- General Land Use

**Project Information**
Click on a feature for more information.
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Project Information:

**Transit: University of Utah Transit Hub**

- **Project ID**: T-S-58
- **Project**: University of Utah Transit Hub - North
- **Location**: South Campus Drive, 1800 East
- **Project Type**: Transit Hub
- **Needs Phase**: Phase 1
- **Financially Constrained Phase**: Phase 1
- **2019 Cost**: $14,000,000
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Wasatch Choice Map v1

- Roadway Projects, By Phase
- Transit Projects, By Phase
- Active Transportation Projects, By Phase
- Centers (center report links, TLC projects, TOD, center-level project lists)
- Regional Recreation Amenities
- Economic Incentive Zones
- TLC Projects
- TIP Program Funded Projects
- Tagged Projects (Bike/Ped, Capacity, Operational, Interchange, etc. - across programs)
- Demographic Projections (TAZ & City)
- Employment Projections (TAZ & City - by sector category)
- Existing Conditions (TAZ SE, City SE, Density, Volumes, V/C, Bike Network, Transit System, Parks etc)
- ATO Current (TAZ, Grid-based, Destinations)
- TAZ-based ATO Projections, ATO Change
- Network Analysis (travelshed size)
- O/D Commute Flow Interactive Map
- Equity Focus Areas
- AT Gap Analysis (sidewalks, key bike facility gaps/barriers)

- Walkability Index
- Progress Monitoring Measures
- Traffic Volumes History, Projections, Changes
- Projects by Phase: 1, 2, 3, unfunded
- Jurisdictional Boundaries (Cities, Counties, MPOs,RPOs)
- Transportation Sales Taxes Enacted (Quarters, Transit Districts, Municipal-specific)
- Greenfield development potential (remaining)
- Property Valuation (Generalized)
- Property Tax Revenue / Acre
- Sales Tax + Property Tax / Acre and / Person By Municipality
- Transportation Project Study Boundaries (and links to reports/websites)
- Area Land Use Studies, Masterplans, etc. (and links to reports/websites)
- Microzones
- Average Commute Times (TAZ-level)
- Parking (structures, lots, space count, ownership, park & ride, etc)
- Bike Model/Analysis output (Demand Measures, Equity, etc)
- Housing + Transportation costs
Wasatch Choice Map v2

- Objective:
  Provide framework for additional data

Vision: Transportation, Land Use, Economic Development, Recreation

+ Access to Opportunities, TIP Projects, TLC Projects, Growth Projections, Active Transportation, Future Land Use, Others
Configure Map Tabs

Other Available Maps:
- Access to Opportunities
- TIP Projects
- TLC Projects
- Growth Projections
- Active Transportation
- Future Land Use

Maps Displayed (max=10):
- Vision
- Transportation
- Land Use
- Economic Development
- Recreation

Finish
Population and Employment Projections
Utah’s population continues to grow. Internal growth, from our own kids and grandkids, continues to be the largest source of growth. To successfully plan for our region’s future, we all must have a good idea of where people will live and work in the future.

The Wasatch Front Real Estate Market Model (REMM), developed by WFRC and MAG using UrbanSim software, helps to better understand current and future locations of households and jobs. REMM forecasts the population and employment distribution within each county to small area traffic analysis zone (TAZ) geography. The overall county totals are developed by the University of Utah’s Gardner Policy Institute.

You can use the map’s filter controls to view the projected distribution of population and jobs in 2050, or download this data from data.wfrc.org.
Mapa de elección de Wasatch

VISIÓN PARA NUESTRO FUTURO

Utah está creciendo... y tenemos un plan. Nuestra calidad de vida futura depende de las decisiones que tomemos hoy, Wasatch Choice 2050 es la visión compartida de nuestras comunidades para inversiones en transporte, patrones de desarrollo y oportunidades económicas. El mapa de la Visión y las estrategias clave muestran cómo el avance de la Visión puede mejorar la calidad de vida incluso a medida que crecemos.

Estrategias clave

La visión Wasatch Choice 2050 se basa en cuatro estrategias clave:

1. Proporcionar opciones de transporte
2. Opciones de vivienda de apoyo
3. Preservar el esparcimiento abierto
4. Vincular el desarrollo económico con las decisiones de transporte y vivienda.

Beneficios de la visión

La implementación de la visión Wasatch Choice 2050...
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<th>Description</th>
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<tbody>
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<tr>
<td>src</td>
<td>docs: add comment to work-around</td>
</tr>
<tr>
<td>.env</td>
<td>fix: hide app version in production only</td>
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<td>.envstager</td>
<td>fix: hide app version in production only</td>
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<tr>
<td>.gitignore</td>
<td>Initial commit</td>
</tr>
</tbody>
</table>
Intermission

(a quick pause for questions or comments on the Wasatch Choice map)
One-stop shopping isn’t for everyone... Specialization is often a better answer, and a great complement to integration.
Active Transportation GIS Data Resources
Active Transportation

GIS data resources for Active Transportation Infrastructure:

- Existing
- Planned

Integrated into established, statewide system:

- Road Centerlines
- Trails & Pathways

wfrc.org/at-map
Active Transportation Data

Existing Infrastructure

whatrc.org/at-map
Active Transportation Data

Planned Infrastructure

What new additions and upgrades are planned for our bike & pedestrian network?

As active transportation plans are adopted across the region, bike facilities and shared use pathways are planned to bridge gaps and increase connectivity in our network as well as to provide more options for high comfort, safe walking and bicycling. Local and regional active transportation plans have been integrated into the statewide roads and trails dataset.

Planned on-street and street-adjacent bike facilities are stored in Utah's statewide road centerline GIS dataset.

Planned off-street pathways are stored in Utah's statewide trails and pathways GIS dataset.

Click on a feature to view the planned bike facility type.

Bike Feature Type
- PP - Project Path
  - 1A - Cycle Track, at-grade, protected with parking
  - 1B - Cycle Track, protected with barrier
  - 1C - Cycle Track, raised and curb separated
  - 2A - Buffered Bike Lane
  - 2B - Bike Lane
  - 3A - Shoulder Bikeway
  - 3B - Marked Shared Roadway
  - 3C - Signed Shared Roadway

wfrc.org/at-map
Active Transportation Data

Envisioned Network

What will our local and regional Active Transportation network look like in the future?

This map depicts our region's envisioned bike & pedestrian network. Existing facilities are shown along with planned facilities drawn from adopted regional and local long range plans.

Click on a feature to view the existing (if applicable) or planned (if applicable) facility types. In some cases, a road segment will have an existing facility type and a planned facility type (upgrade).

Bike Feature Type
- PP - Paved Path
- 1A - Cycle Track: at-grade, protected with parking
- 1B - Cycle Track, protected with barrier
- 1C - Cycle Track: raised and curb separated
- 2A - Buffered Bike Lane
- 2B - Bike Lane
- 3A - Shoulder Bikeway
- 3B - Marked Shared Roadway
- 3C - Signed Shared Roadway

wfrc.org/at-map
Active Transportation Data

Additional AT-related planning data

Bicycle and Pedestrian Demand

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Active Transportation Data

Bike Demand Score
Pedestrian Demand Score
Demand Model
Factors Breakdown

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Active Transportation Data

Network Quality

Level of Traffic Stress
Factors Breakdown

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Active Transportation Data

Wasatch Bike Plan

Info about local Active Transportation Plans

- Status
- Plan Links
- Funding

wfrc.org/at-map
Park and Trail Accessibility
Park Accessibility Map

Total park space & park space per person

2020 and 2050 population comparisons

Recommendations

Park Map
10-minute walk access to parks

Households within 10-minute walk of a park

Park Map
10-minute walk access to trailheads

Households within 10-minute walk of a

Park Map
Park Accessibility Map

Combined Park and Trail/Pathway Access

1. Park Space
2. Park Access
3. Miles of Paved Pathway
4. Access to Paths and Trails
5. Park and Trail System

Combined Walk Access
Parks and trails form an interconnected network of recreation and active transportation around our region. Think about the key connections between neighborhoods, parks, and trails. Then, look at the 10-minute walk areas:
- What areas in your city do not have 10-minute walk access to parks and trails?
- What projects could improve access for these areas?

Abundant and easily accessible open space is a key component of the Wasatch Choice Regional Vision. Let's work together to ensure the success of this vision and the preservation of our quality of life along the Wasatch Front.
Housing and Transportation Coordination Resources
SB34 - Coordinating Housing and Transportation

Senate Bill 34
Affordable Housing Modifications
Regional Transportation Plan

Consider the Regional Transportation Plan

1. New General Plan Requirements for 2019
2. 2019 - 2050 Regional Transportation Plan (RTP) Projects
3. Major Transit Investment Corridors and Stations
4. How Accessible are Places of Work?
5. Population Projections
6. Employment Projections
Major Transit Investment Corridors

Plan for development:

- Residential
- Commercial
Access to Opportunities

Workplace Accessibility:

- Auto
- Transit
Access to Opportunities

Household Access to Jobs: Auto
For each traffic analysis zone (TAZ), values indicate household accessibility to auto, within a typical travel commute relative to the average score for the highlighted North Salt Lake County area. The bars indicate the number of jobs accessible to each TAZ’s households within a typical auto commute.

Household Access to Jobs: Transit
For each traffic analysis zone (TAZ), values indicate household accessibility to jobs, within a typical travel commute relative to the average score for the highlighted North Salt Lake County area. The bars indicate the number of jobs accessible to each TAZ’s households within a typical transit commute.
Population Projections

Correlate:

- Population Projections
- Transportation Plan
- Land Use
Employment Projections

Correlate:

- Employment Projections
- Transportation Plan
- Land Use
Wrapping Up...

- Wasatch Choice Map - ‘Integrated Systems’ View & User Experience
- Specialty Tools
- Looking for Value Adds
  - Filling data gaps
  - Commiting to an information product approach
  - Accessibility
    - User-friendliness for multi audiences
    - Web presence, SEO
    - Promote to exterior GIS, planning & engineering colleagues
    - Dog Fooding

- Information that gets used gets better
Thank you!

We’re hoping for...

- Questions
- Feedback
- New Ideas
- Future Collaboration

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