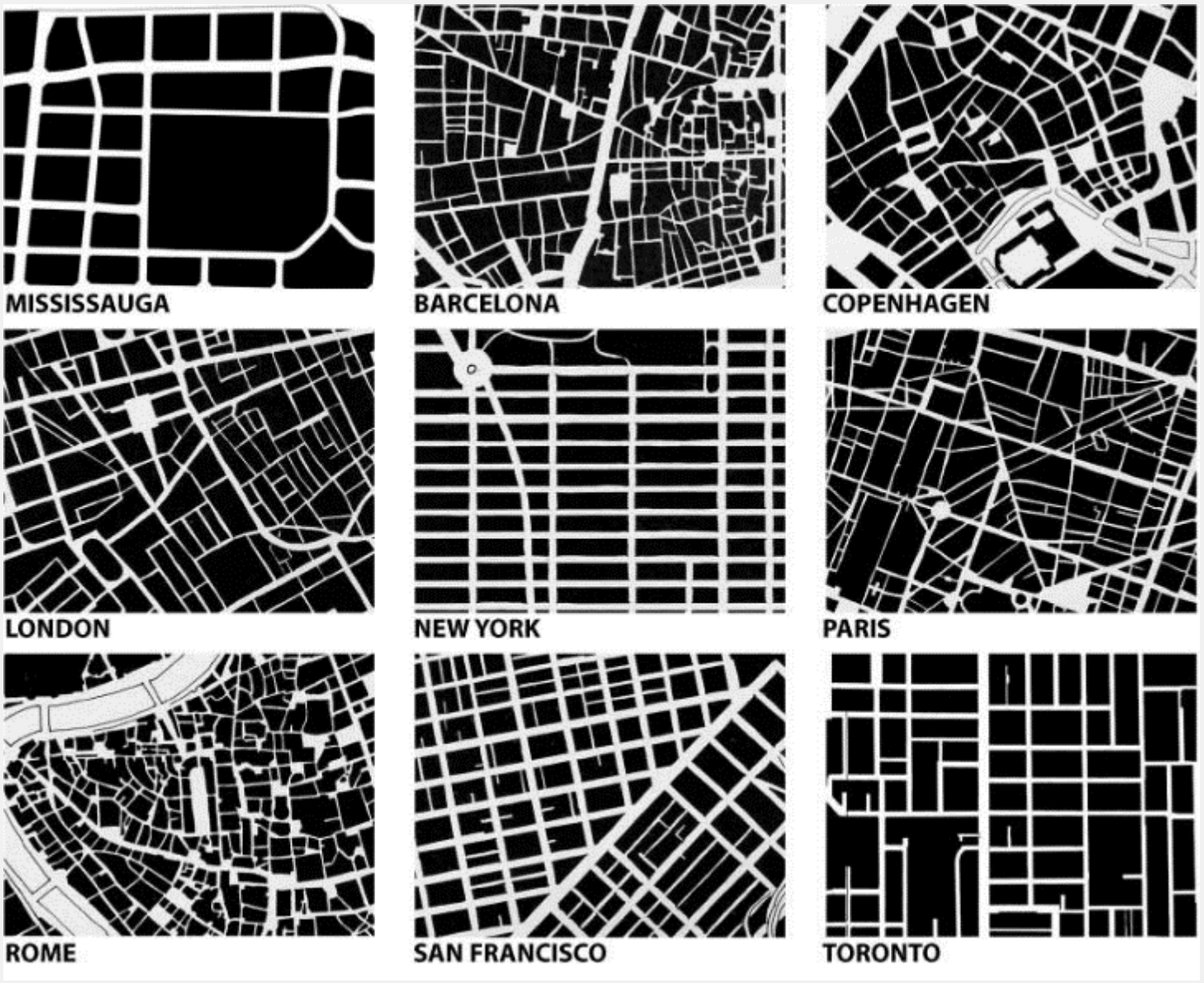
WASATCH CHOICE
2050

GETTING CONNECTED

Improving Access to Opportunity in your Community

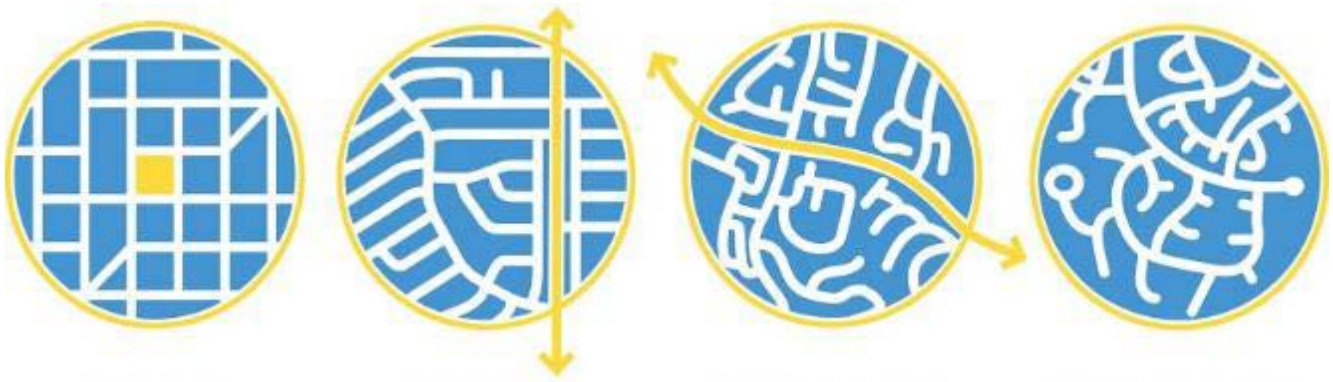
STREET NETWORKS ENDURE!



GET THE MOST PERMANENT FEATURES RIGHT!

OVERVIEW

- What is street connectivity
- Why it matters
- Utah Street Connectivity Study

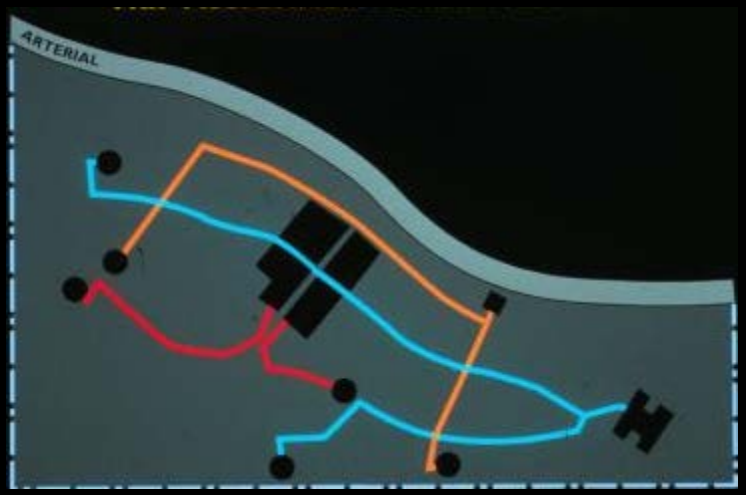


Source: CNU

WHAT IS STREET CONNECTIVITY?

What is Street Connectivity

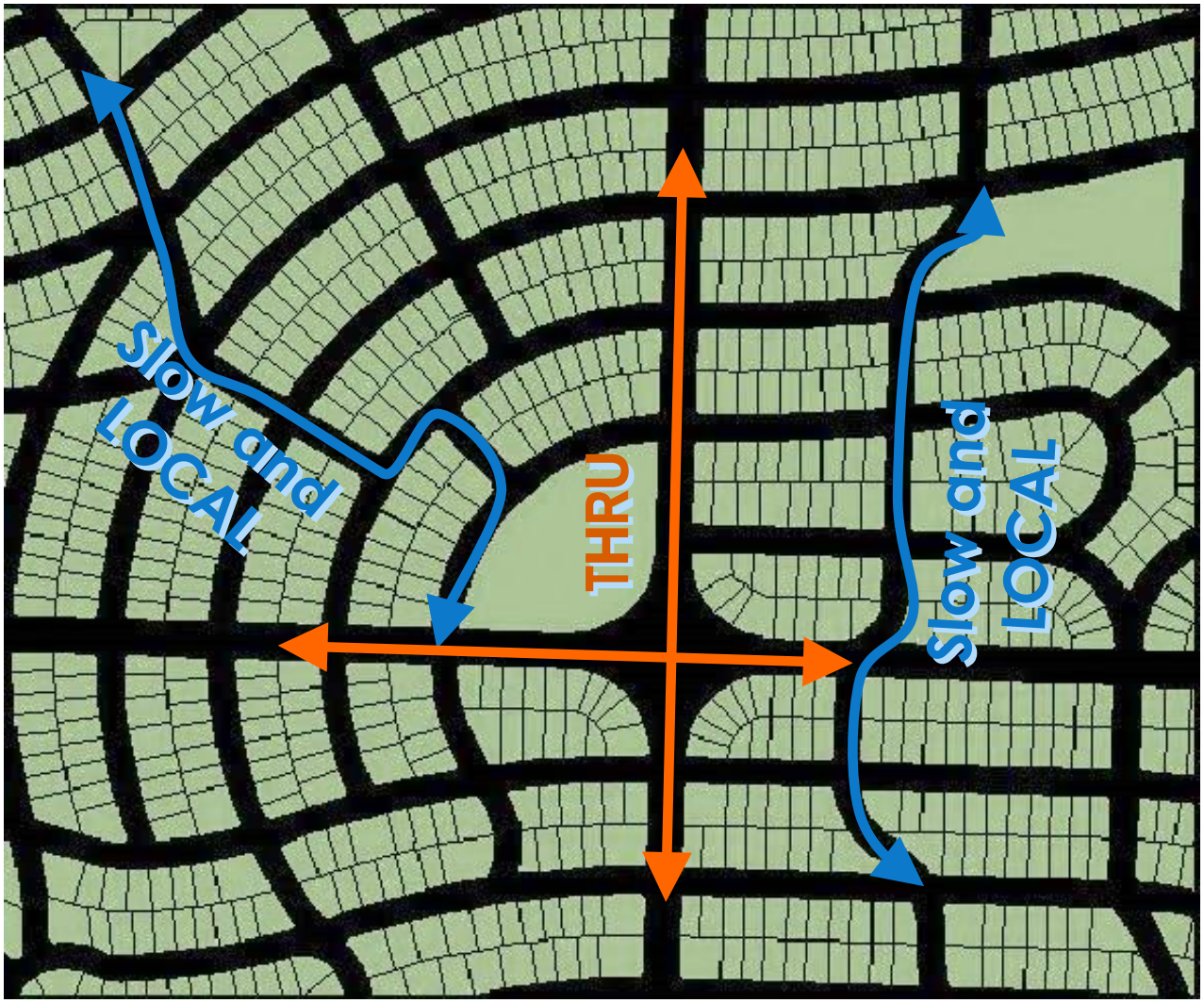
VS.



Hierarchical

Connected

THRU VERSUS SLOW AND LOCAL STREETS

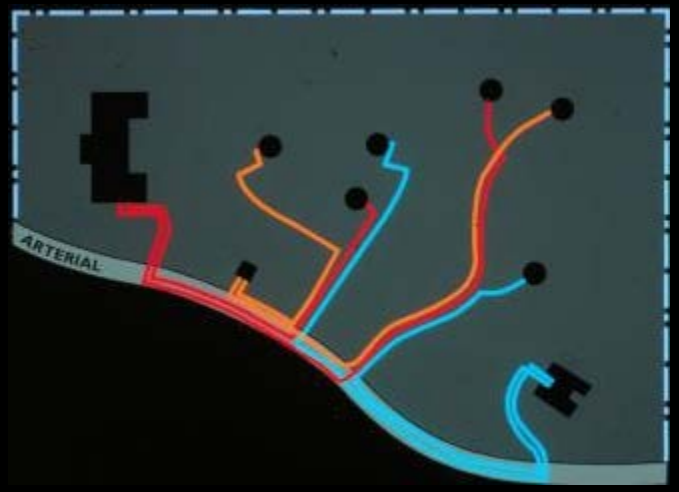


WHY IMPROVE CONNECTIVITY?

STREET CONNECTIVITY IMPROVES ACCESS TO OPPORTUNITY

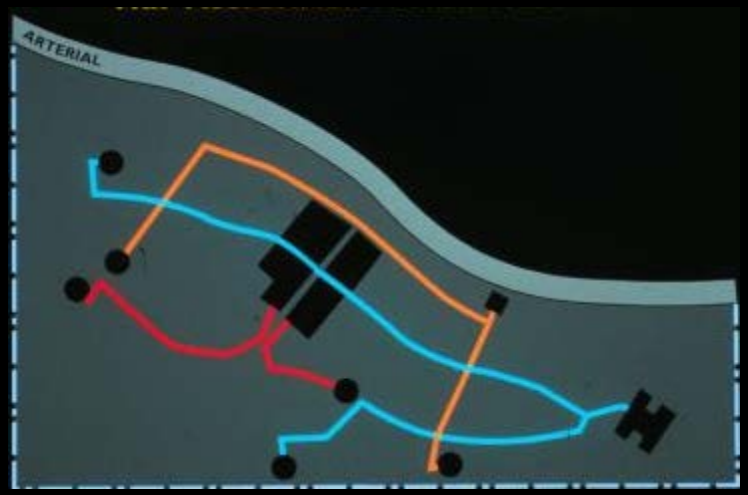
» Access more within a travel distance

The street network matters

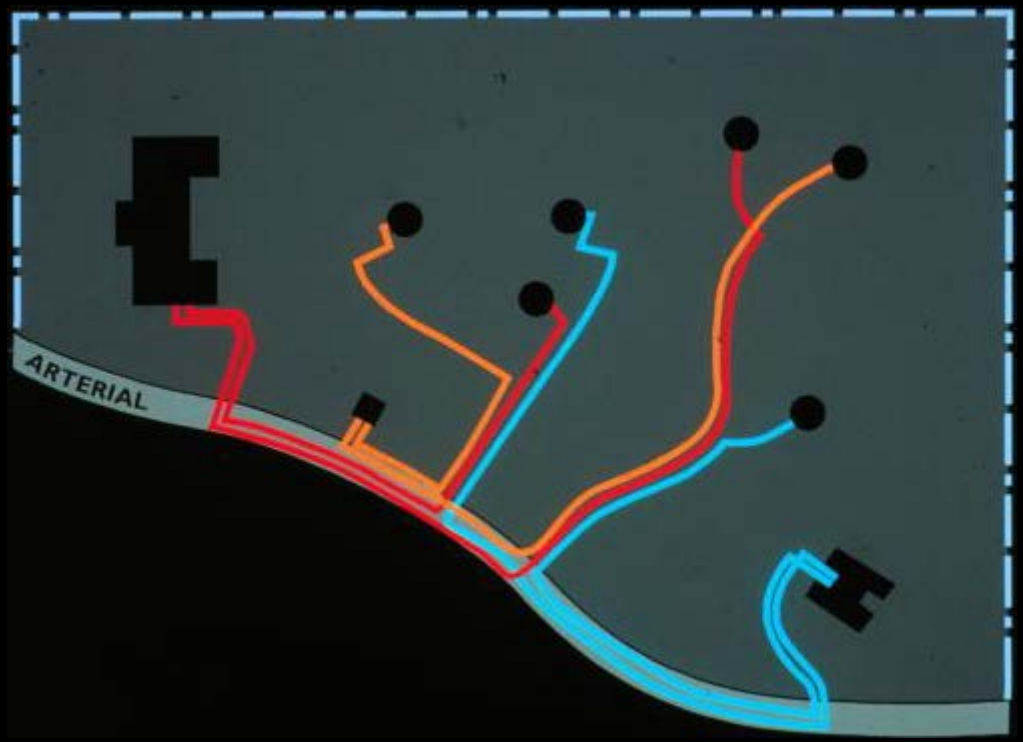


Hierarchical

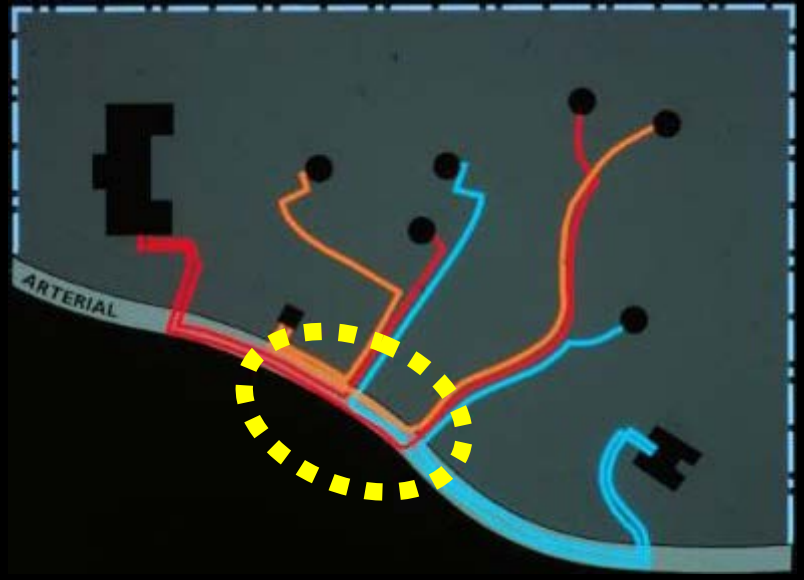
VS.

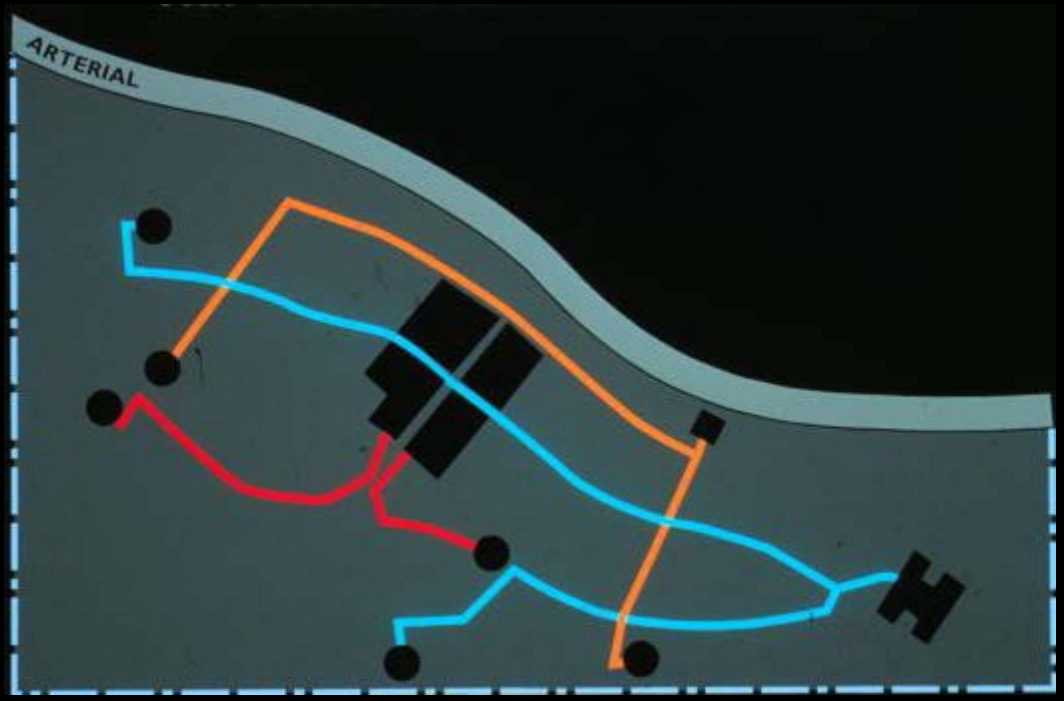


Connected

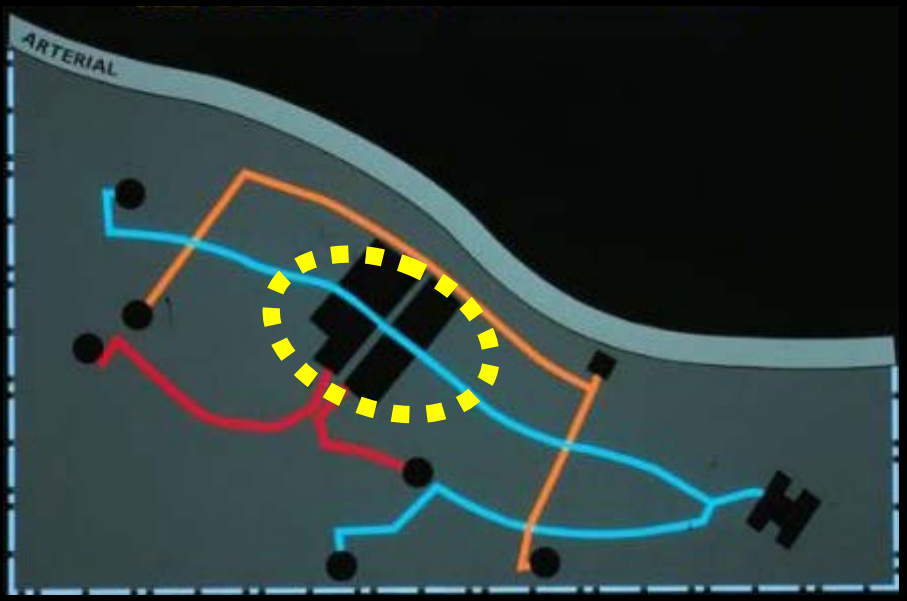


- Walk/bike distances longer
- Traffic congestion rougher
- Arterial character meaner
- Access to opportunity worse…r

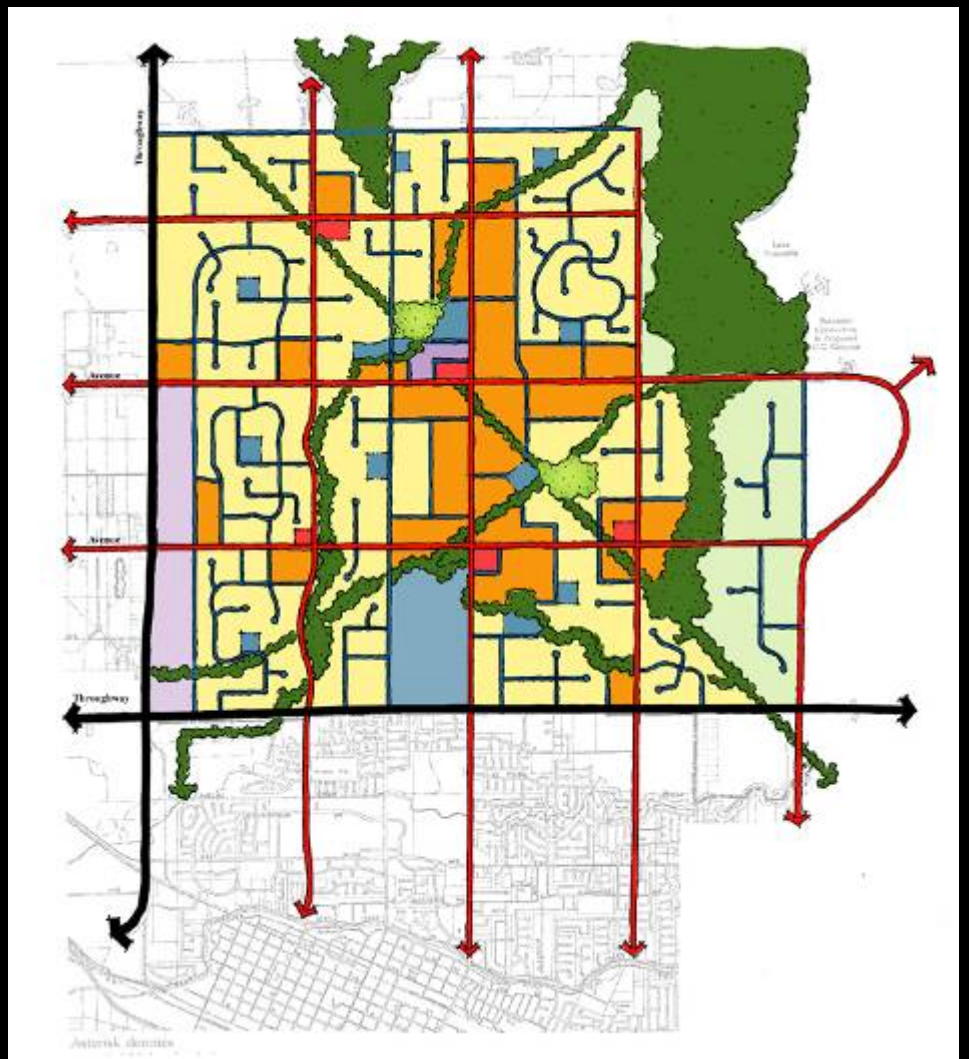

ARTERIAL

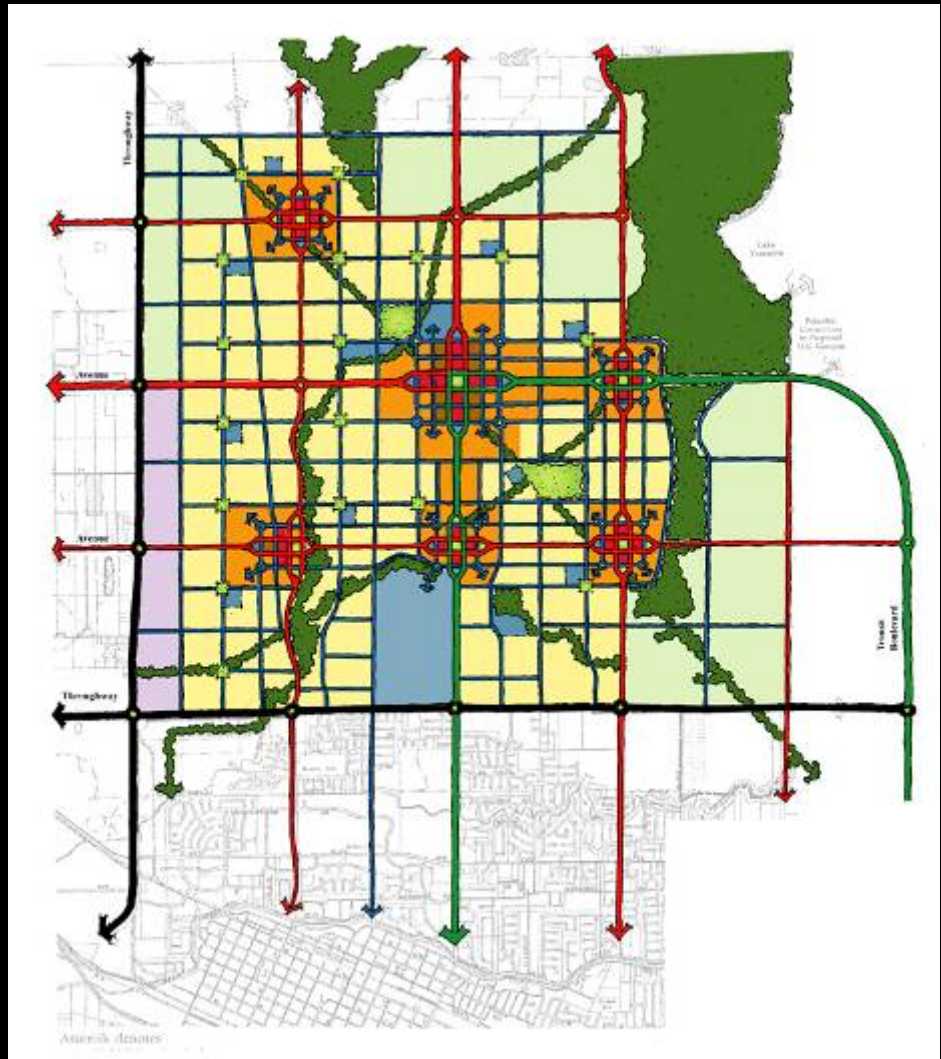


- Walk/bike distances shorter
- Traffic congestion smoother
- Arterial character friendlier
- Access to opportunity better


ARTERIAL

Case Study: Merced, CA





Merced Alternative's advantages:

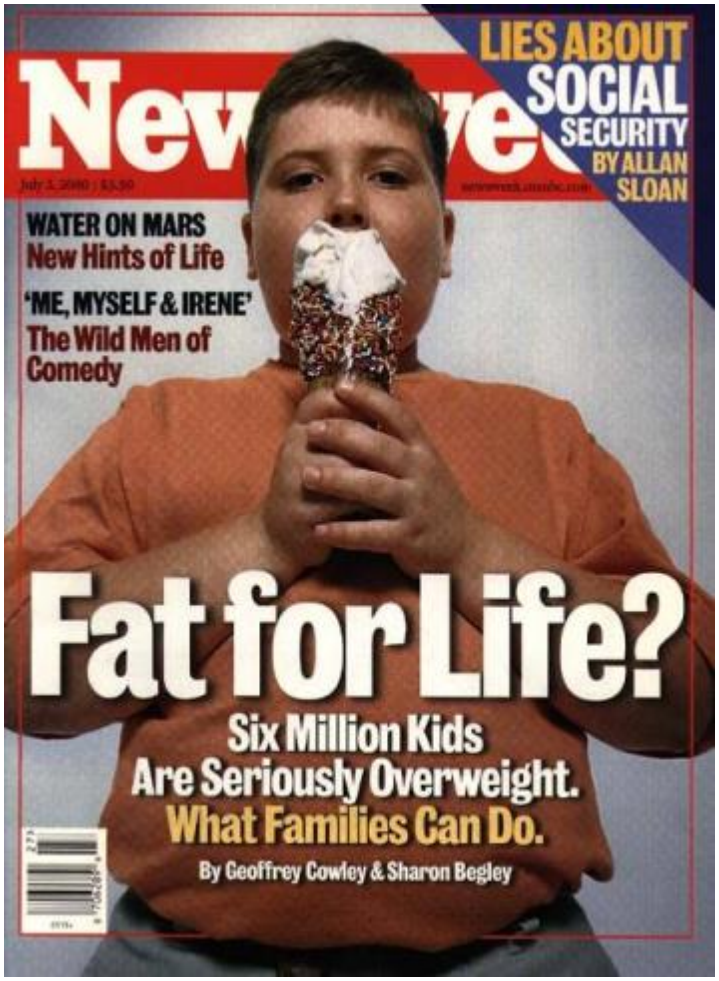
- Fewer Vehicle Trips:
  20% lower

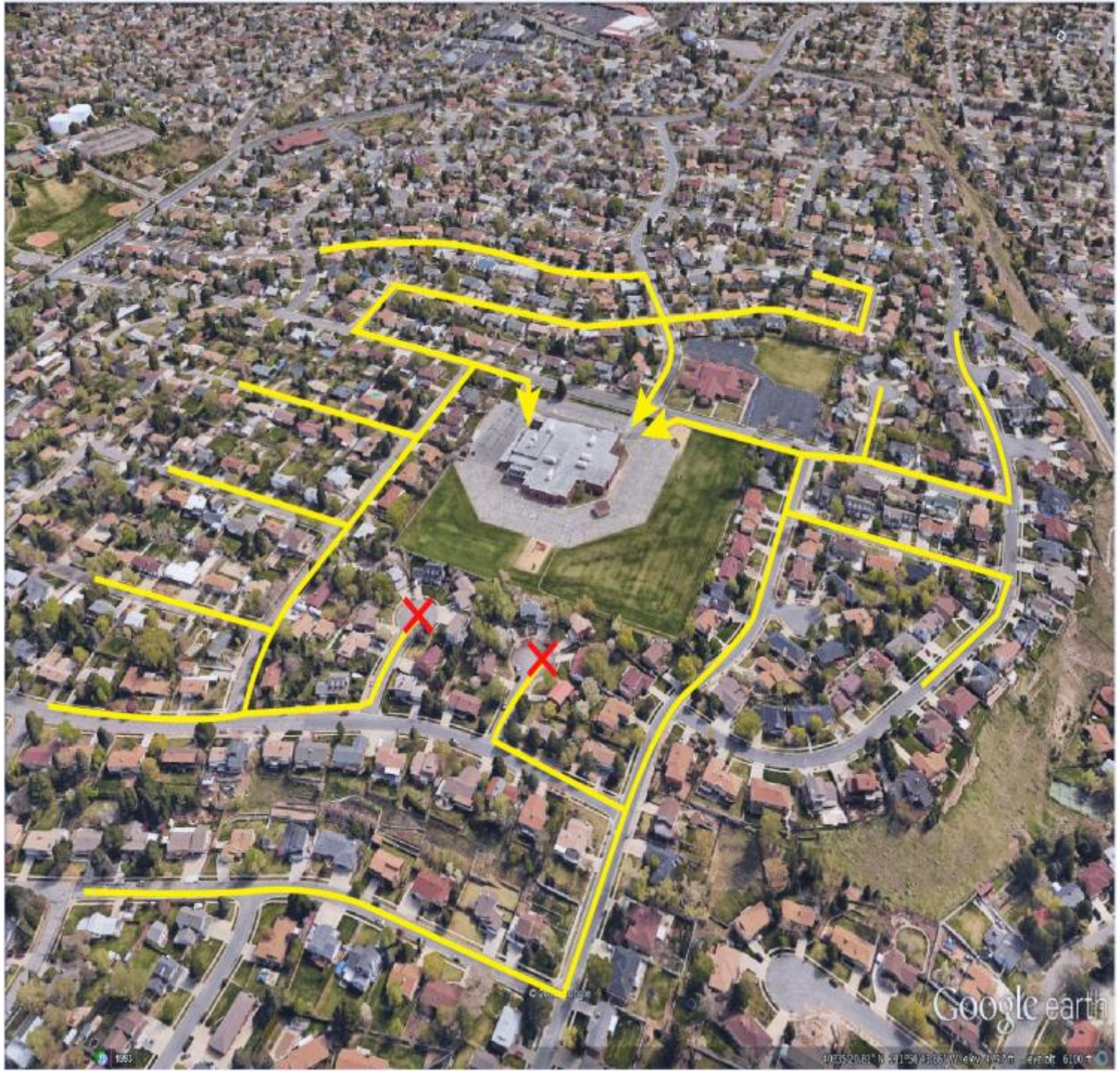
- Shorter Driving Distances:
  30% lower

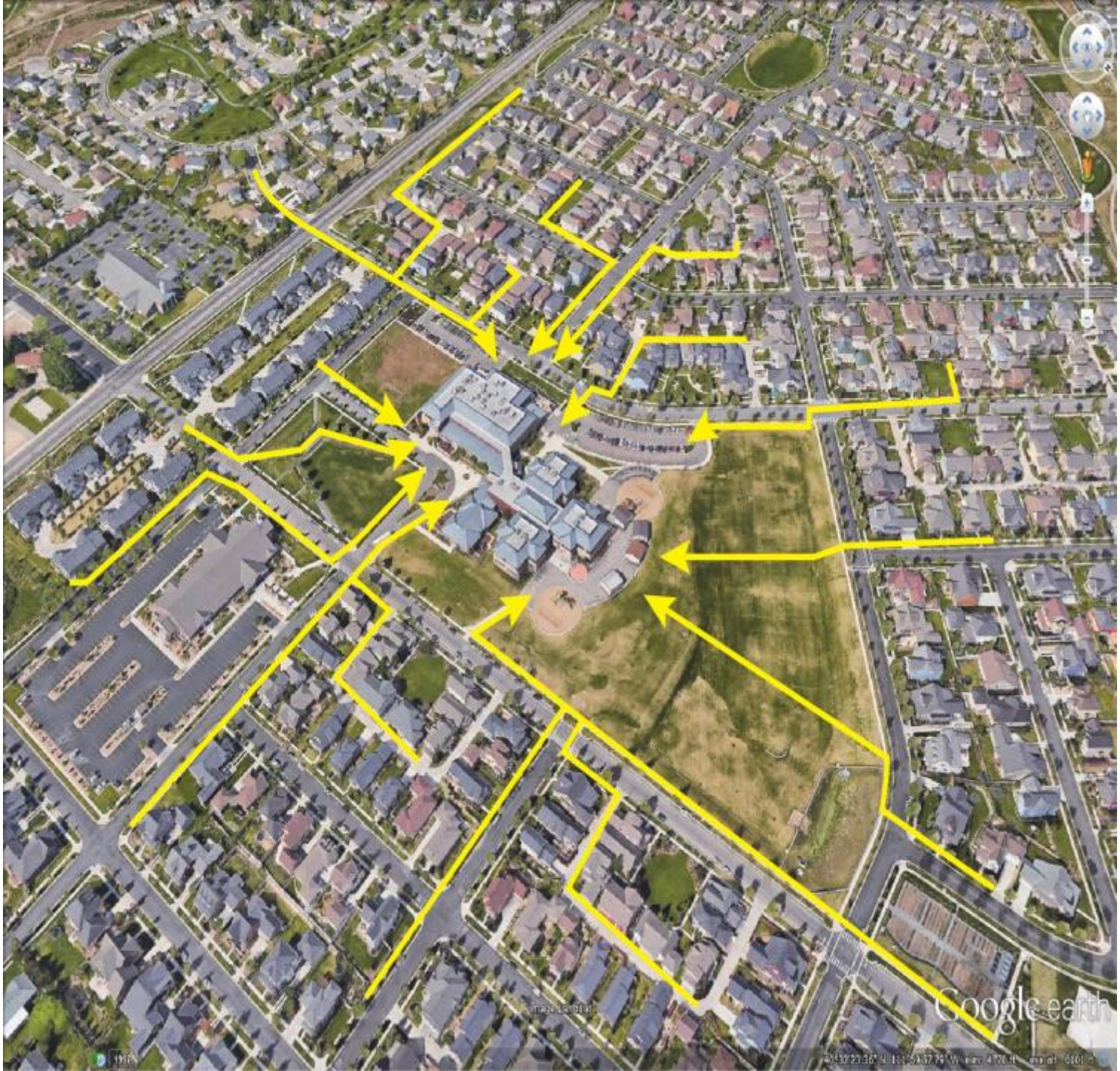
- Fewer busy streets :
  30% fewer streets above 30,000 average daily trips

WHAT ABOUT THE CHILDREN?!

- 18% of children are obese




Google earth


Google earth

WHY IMPROVE CONNECTIVITY?

Connected streets led to more walking / bicycling

88%

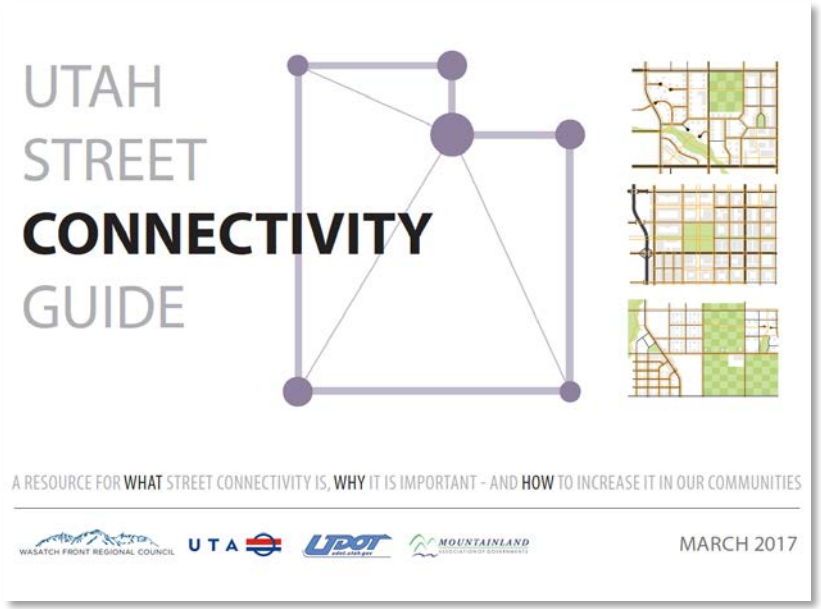
of students in Daybreak walk to school

17%

Of students in similar, less walkable neighborhoods walk to school

Source: Napier, Melissa, et al. “Walking to School: Community design and child and parent barriers.” Journal of Environmental Psychology, March 2011.

Utah Street Connectivity Guide



- The Case for Connectivity
- Tools for Connectivity
- Design Guide and Case Studies

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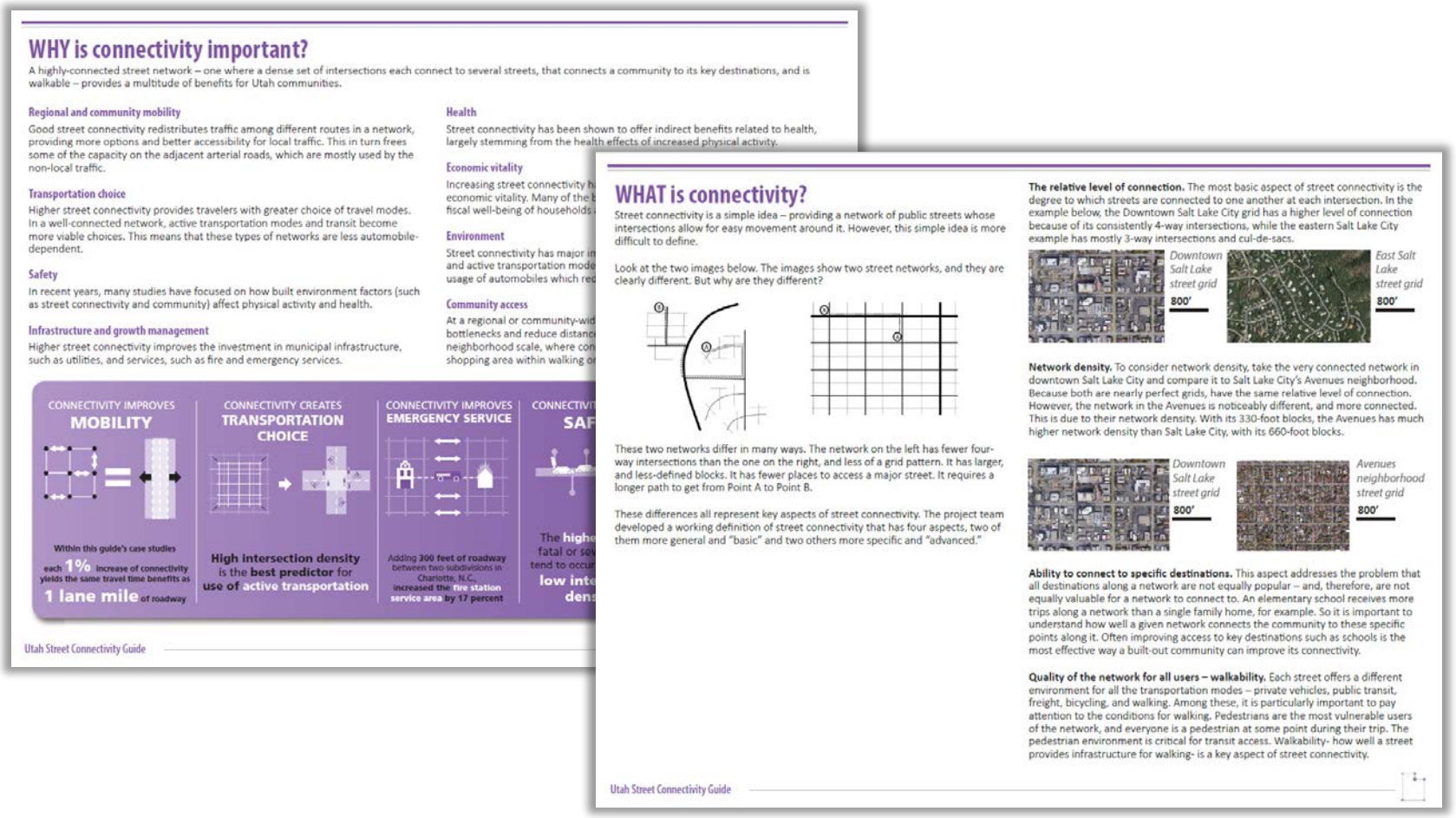
Utah Street Connectivity Guide



WHY is connectivity important?

A highly-connected street network – one where a dense set of intersections each connect to several streets, that connects a community to its key destinations, and is walkable – provides a multitude of benefits for Utah communities.

Regional and community mobility

Good street connectivity redistributes traffic among different routes in a network, providing more options and better accessibility for local traffic. This in turn frees some of the capacity on the adjacent arterial roads, which are mostly used by the non-local traffic.

Transportation choice

Higher street connectivity provides travelers with greater choice of travel modes. In a well-connected network, active transportation modes and transit become more viable choices. This means that these types of networks are less automobile-dependent.

Safety

In recent years, many studies have focused on how built environment factors (such as street connectivity and community) affect physical activity and health.

Infrastructure and growth management

Higher street connectivity improves the investment in municipal infrastructure, such as utilities, and services, such as fire and emergency services.

Health

Street connectivity has been shown to offer indirect benefits related to health, largely stemming from the health effects of increased physical activity.

Economic vitality

Increasing street connectivity h
economic vitality. Many of the b
fiscal well-being of households

Environment

Street connectivity has major i
and active transportation mode
usage of automobiles which re

Community access

At a regional or community-wid
bottlenecks and reduce distanc
neighborhood scale, where con
shopping area within walking o

CONNECTIVITY IMPROVES **MOBILITY**

Within this guide's case studies each **1%** increase of connectivity yields the same travel time benefits as **1 lane mile** of roadway

CONNECTIVITY CREATES **TRANSPORTATION CHOICE**

High intersection density is the **best predictor** for **use of active transportation**

CONNECTIVITY IMPROVES **EMERGENCY SERVICE**

Adding **300 feet of roadway** between two subdivisions in Charlotte, N.C., increased the **fire station service area by 17 percent**

CONNECTIVI **SAF**

The **high** fatal or se tend to occu **low inte den**

Utah Street Connectivity Guide

WHAT is connectivity?

Street connectivity is a simple idea – providing a network of public streets whose intersections allow for easy movement around it. However, this simple idea is more difficult to define.

Look at the two images below. The images show two street networks, and they are clearly different. But why are they different?

These two networks differ in many ways. The network on the left has fewer four-way intersections than the one on the right, and less of a grid pattern. It has larger, and less-defined blocks. It has fewer places to access a major street. It requires a longer path to get from Point A to Point B.

These differences all represent key aspects of street connectivity. The project team developed a working definition of street connectivity that has four aspects, two of them more general and "basic" and two others more specific and "advanced."

The relative level of connection. The most basic aspect of street connectivity is the degree to which streets are connected to one another at each intersection. In the example below, the Downtown Salt Lake City grid has a higher level of connection because of its consistently 4-way intersections, while the eastern Salt Lake City example has mostly 3-way intersections and cul-de-sacs.

Downtown Salt Lake street grid

800'

East Salt Lake street grid

800'

Network density. To consider network density, take the very connected network in downtown Salt Lake City and compare it to Salt Lake City's Avenues neighborhood. Because both are nearly perfect grids, have the same relative level of connection. However, the network in the Avenues is noticeably different, and more connected. This is due to their network density. With its 330-foot blocks, the Avenues has much higher network density than Salt Lake City, with its 660-foot blocks.

Downtown Salt Lake street grid

800'

Avenues neighborhood street grid

800'

Ability to connect to specific destinations. This aspect addresses the problem that all destinations along a network are not equally popular – and, therefore, are not equally valuable for a network to connect to. An elementary school receives more trips along a network than a single family home, for example. So it is important to understand how well a given network connects the community to these specific points along it. Often improving access to key destinations such as schools is the most effective way a built-out community can improve its connectivity.

Quality of the network for all users – walkability. Each street offers a different environment for all the transportation modes – private vehicles, public transit, freight, bicycling, and walking. Among these, it is particularly important to pay attention to the conditions for walking. Pedestrians are the most vulnerable users of the network, and everyone is a pedestrian at some point during their trip. The pedestrian environment is critical for transit access. Walkability- how well a street provides infrastructure for walking- is a key aspect of street connectivity.

Utah Street Connectivity Guide

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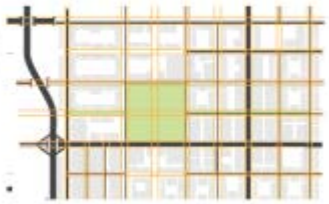
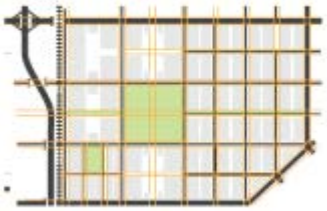
One size does NOT fit all

This guide defines six types of neighborhoods/districts:

Urban residential neighborhood: An urban residential neighborhood is a higher-density residential area with a mix of civic, commercial, and office uses.

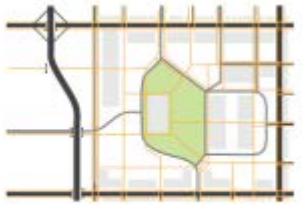


Downtown district: A mixed-use center of activity that attracts people from throughout the community and sometimes the region.



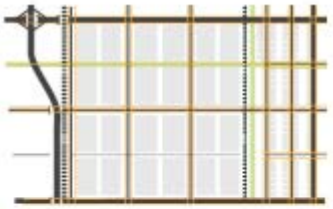
Suburban residential neighborhood: A lower-density residential area with other types of uses typically found on nearby arterial or collector corridors.

Campus district: A large land use such as an educational campus, shopping center, business park, or entertainment/lifestyle center.



Rural residential neighborhood: A very low density residential area with agricultural or natural space and few other uses present.

Industrial district: An area focused on production or distribution activities.



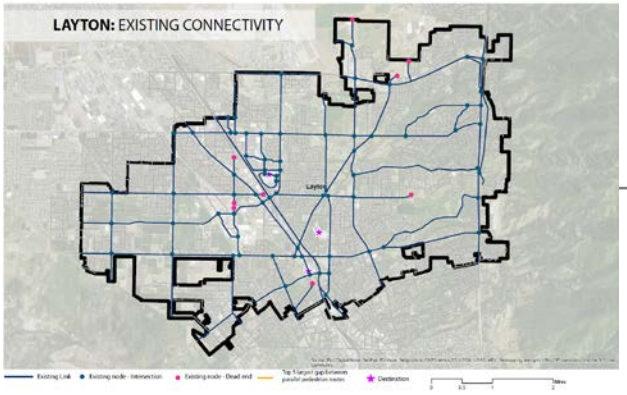
Neighborhood and district-scale connectivity considers all streets.

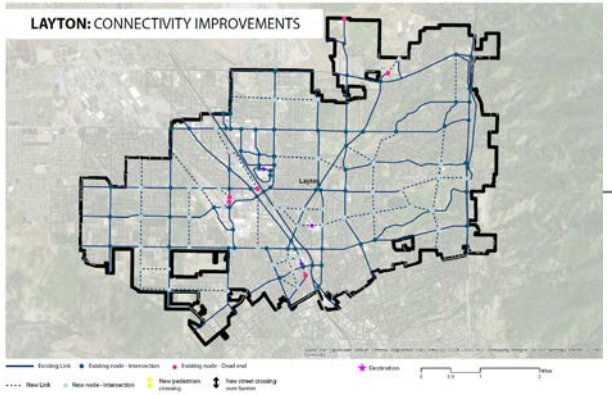
Case Studies

LEHI CITY
PIONEERING UTAH'S FUTURE

Layton
Community • Prosperity • Choice

TOOELE COUNTY





BENEFITS

MOUNTAINLAND ASSOCIATION OF GOVERNMENTS

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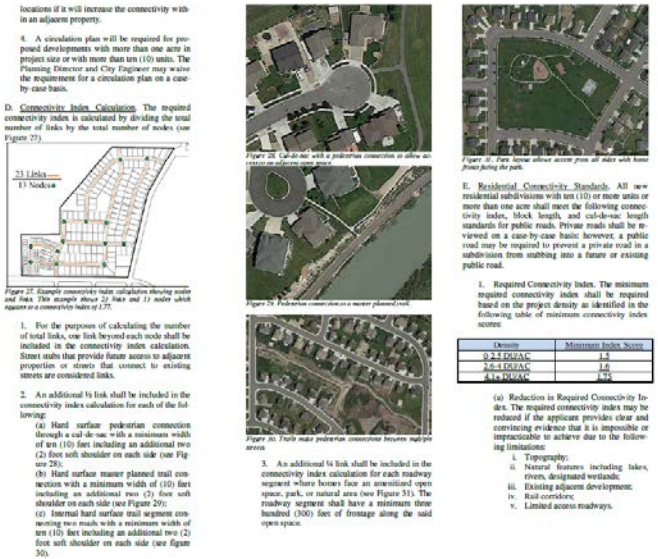
WASATCH FRONT REGIONAL COUNCIL

HOW TO IMPROVE CONNECTIVITY?

- Assess your city
- Planning and ordinances
- Street & development standards
- Retrofit tools



locations if it will increase the connectivity within an adjacent property.

4. A circulation plan will be required for proposed developments with more than one acre in project size or with more than ten (10) units. The Planning Director and City Engineer may waive the requirement for a circulation plan on a case-by-case basis.

D. Connectivity Index Calculation. The required connectivity index is calculated by dividing the total number of links by the total number of nodes (see Figure 27).

23 Links
13 Nodes

Figure 27. Example connectivity index calculation showing nodes and links. This example shows 23 links and 13 nodes which equates to a connectivity index of 1.77.

1. For the purposes of calculating the number of total links, one link beyond each node shall be included in the connectivity index calculation. Street stubs that provide future access to adjacent properties or streets that connect to existing streets are considered links.

2. An additional ½ link shall be included in the connectivity index calculation for each of the following:
   (a) Hard surface pedestrian connection through a cul-de-sac with a minimum width of ten (10) feet including an additional two (2) foot soft shoulder on each side (see Figure 28);
   (b) Hard surface master planned trail connection with a minimum width of (10) feet including an additional two (2) foot soft shoulder on each side (see Figure 29);
   (c) Internal hard surface trail segment connecting two roads with a minimum width of ten (10) feet including an additional two (2) foot soft shoulder on each side (see figure 30).

Figure 28. Cul-de-sac with a pedestrian connection to allow access to adjacent open space.

Figure 29. Pedestrian connection to a master planned trail.

Figure 30. Trails make pedestrian connections between multiple streets.

3. An additional ½ link shall be included in the connectivity index calculation for each roadway segment where homes face an amenitized open space, park, or natural area (see Figure 31). The roadway segment shall have a minimum three hundred (300) feet of frontage along the said open space.

Figure 31. Park layout allows access from all sides with home fronts facing the park.

E. Residential Connectivity Standards. All new residential subdivisions with ten (10) or more units or more than one acre shall meet the following connectivity index, block length, and cul-de-sac length standards for public roads. Private roads shall be reviewed on a case-by-case basis; however, a public road may be required to prevent a private road in a subdivision from stubbing into a future or existing public road.

1. Required Connectivity Index. The minimum required connectivity index shall be required based on the project density as identified in the following table of minimum connectivity index scores:

Density	Minimum Index Score
0-2.5 DUAC	1.3
2.6-4 DUAC	1.4
4.1+ DUAC	1.75

(a) Reduction in Required Connectivity Index. The required connectivity index may be reduced if the applicant provides clear and convincing evidence that it is impossible or impracticable to achieve due to the following limitations:
   i. Topography;
   ii. Natural features including lakes, rivers, designated wetlands;
   iii. Existing adjacent development;
   iv. Rail corridors;
   v. Limited access roadways.

GET CONNECTED!

- Connectivity provides multiple benefits
  - Access to opportunities
  - Walkability
  - Reduce traffic congestion
  - Reduces the burden on municipal services
  - Neighborhood long-term value and stability
- One size doesn't fit all: explore what works in your community
- The Utah Street Connectivity Guide can help

wfrc.org/tlc

For more information, contact:
Julie Bjornstad
julieb@wfrc.org

WASATCH CHOICE
2050

GETTING CONNECTED

Improving Access to Opportunity in your Community

ACROSS THE STATE, PEOPLE WANT TO….

70%

walk more

58%

bike more

46%

take transit more

Source: Utah Statewide Household Travel Survey

TRANSPORTATION AND LAND USE CONNECTION

2018 Awards

March 14th, 2018 | Megan Townsend

UDOT udot.utah.gov

UTA

SALT LAKE COUNTY REGIONAL DEVELOPMENT

WASATCH FRONT REGIONAL COUNCIL

PROGRAM GOALS

TRANSPORTATION AND LAND USE CONNECTION

Mission: TLC supports local governments in their planning efforts, implementing the Wasatch Choice Vision.

Goals:

-Maximize the value of **investment** in public **infrastructure**.

-Enhance **access to opportunity**.

-Increase **travel options** to **optimize mobility**.

-Create **communities with opportunities** to live, work, and play.

UDOT udot.utah.gov UTA SALT LAKE COUNTY REGIONAL DEVELOPMENT WASATCH FRONT REGIONAL COUNCIL

2018 AWARDS

TRANSPORTATION AND LAND USE CONNECTION

- $904,922 TLC Funds
- $281,525 Local Match
- **Nearly $1.3 Million in Total Project Funding**

- **13 awards**
  - 7 Salt Lake Urbanized Area
  - 5 Ogden/Layton Urbanized Area
  - 1 Tooele County
- 3 multi-jurisdictional

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2018 AWARDS

TRANSPORTATION AND LAND USE CONNECTION

Ogden/Layton Urbanized Area

- Ogden Railyard Master Plan Study
- Plain City Transportation and Trails Master Plan
- Roy General Plan and Ordinance Update
- South Davis (North Salt Lake, Centerville, Bountiful) Active Transportation Plan
- Woods Cross Station Area Plan

Tooele County

- Grantsville City General Plan Update

Salt Lake Urbanized Area

- Holladay Canal Trails Study
- Salt Lake County + Jordan River Commission Blueprint Jordan Plan Update
- Millcreek Town Center Plan
- Salt Lake City Street Typology Plan
- South Jordan + West Jordan Active Transportation Plan (Phase 2)
- West Jordan Center Station Area Plan
- West Valley Active Transportation Plan

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CITY WIDE PROJECTS

TRANSPORTATION AND LAND USE CONNECTION

- Salt Lake City Street Typologies Plan
  - $120,000 Budget
- Roy City General Plan and Ordinance Update
  - $130,000 Budget
- Grantsville City General Plan Update
  - $72,000 Budget

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SALT LAKE COUNTY REGIONAL DEVELOPMENT

WASATCH FRONT REGIONAL COUNCIL

CENTER PLANS

- Millcreek Town Center Plan
  - $70,000 Budget
- West Jordan Center Station Area Plan
  - $100,000 Budget
- Woods Cross Station Area Plan
  - $85,000 Budget
- Ogden Railyard Master Plan Study
  - $30,000 Budget

ACTIVE TRANSPORTATION & TRAILS PLANS

TRANSPORTATION AND LAND USE CONNECTION

- South Jordan + West Jordan Active Transportation Plan
  - $97,447 Budget
- Holladay Canal Trails Study
  - $75,000 Budget
- West Valley Active Transportation Plan
  - $100,000 Budget
- Plain City Transportation and Trails Master Plan
  - $15,000 + TLC Technical Assistance
- South Davis (North Salt Lake, Centerville, Bountiful) Active Transportation Plan
  - $112,000 Budget

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REGION-WIDE PLAN

TRANSPORTATION AND LAND USE CONNECTION

- Salt Lake County + Jordan River Commission Blueprint Jordan River Plan Update
  - $180,000 Budget

BLUEPRINT JORDAN RIVER

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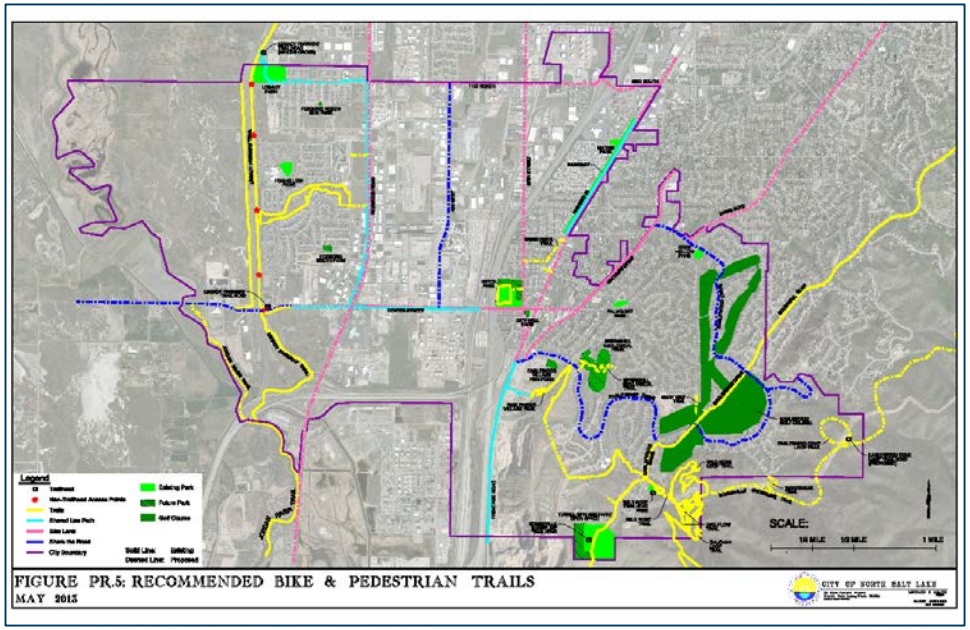
SALT LAKE COUNTY REGIONAL DEVELOPMENT

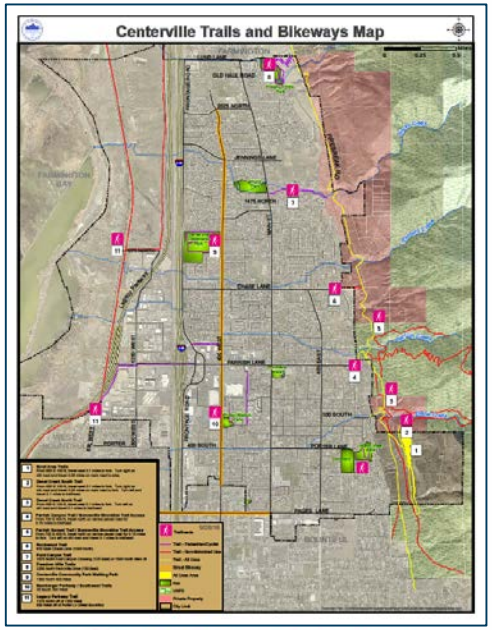
WASATCH FRONT REGIONAL COUNCIL

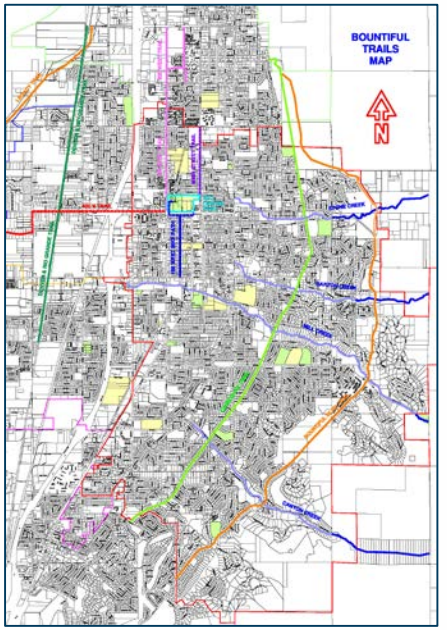
SOUTH DAVIS ACTIVE TRANSPORTATION PLAN

TRANSPORTATION AND LAND USE CONNECTION

- Working together to further “establish Davis County as a recreation destination and promote economic development and tourism”
- Implementation focused: maintenance schedule, facility design, funding sources, working with UDOT and other stakeholders







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SALT LAKE COUNTY REGIONAL DEVELOPMENT

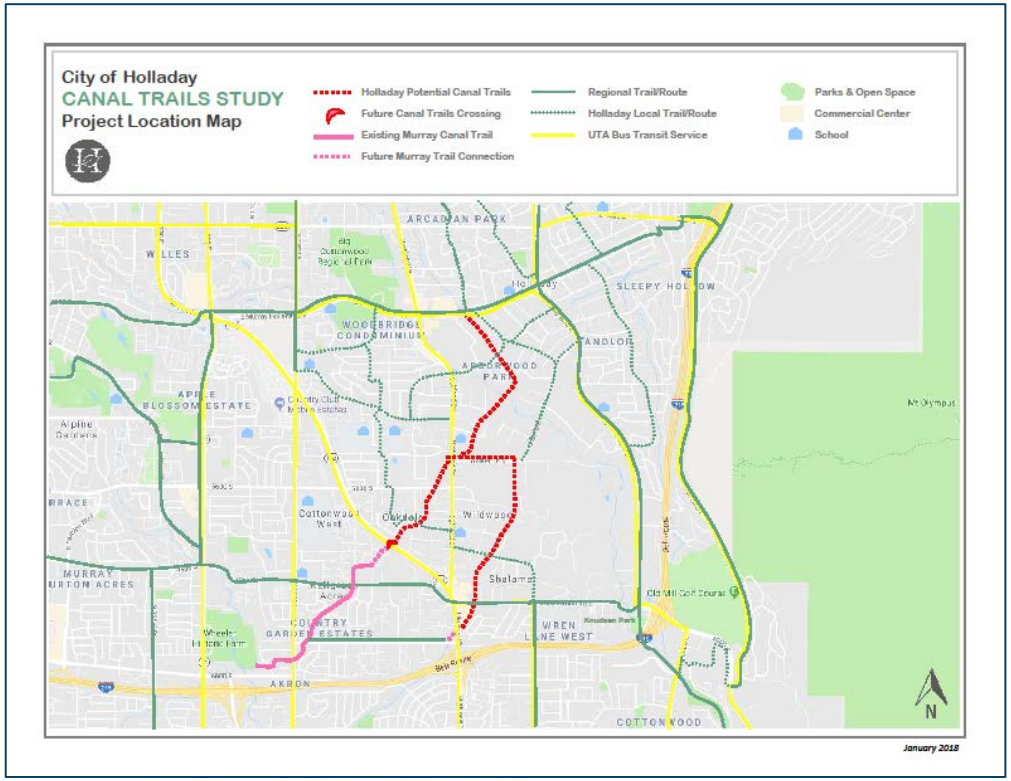
WASATCH FRONT REGIONAL COUNCIL

HOLLADAY TRANSPORTATION AND TRAILS PLAN

TRANSPORTATION AND LAND USE CONNECTION

- Objectives include:
  - Increase Connectivity & Mobility
  - Provide Alternative Transportation
  - Reduce Emissions
  - Promote Health
  - Enhance Personal and Public Safety
  - Support Smart Growth

- Working closely with stakeholders



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SALT LAKE COUNTY REGIONAL DEVELOPMENT

WASATCH FRONT REGIONAL COUNCIL

TLC Program

TRANSPORTATION AND LAND USE CONNECTION

Megan Townsend, Program Lead

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(801)363-4250 x. 1101

http://www.wfrc.org/tlc

SALT LAKE COUNTY REGIONAL DEVELOPMENT

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Source: Paramedix

Core Routes Study – ATC March 14, 2017

WASATCH FRONT REGIONAL COUNCIL

Core Routes Study

- Purpose
  - Evaluate, analyze, and provide more definition to the service and capital investment characteristics of “Enhanced Bus” transit service
    - Connectivity (n-s, e-w direct service)
    - Frequency
    - Span of service
    - Traffic signal coordination
    - Capital improvements (i.e. station enhancements, sidewalk connectivity, etc.)

Core Routes Study

- Purpose
  - Evaluate, analyze, and provide more definition to the service and capital investment characteristics of “Enhanced Bus” transit service
  - Define a robust, efficient, high quality bus network that compliments existing rail service
    - Pivot off and build upon Regional Transportation Plans

Core Routes Study

- Goals
  - Identify an efficient, reliable, and easily understandable bus system
  - Build consensus around this concept
  - Create a clear plan of action to implement Core Route system as funds become available

Core Routes Study

- Purpose
  - Evaluate, analyze, and provide more definition to the service and capital investment characteristics of “Enhanced Bus” transit service
  - Define a robust, efficient, high quality bus network that compliments existing rail service
- Goals
  - Identify an efficient, reliable, and easily understandable bus system
  - Build consensus around this concept
  - Create a clear plan of action to implement Core Route system as funds become available

THANK YOU

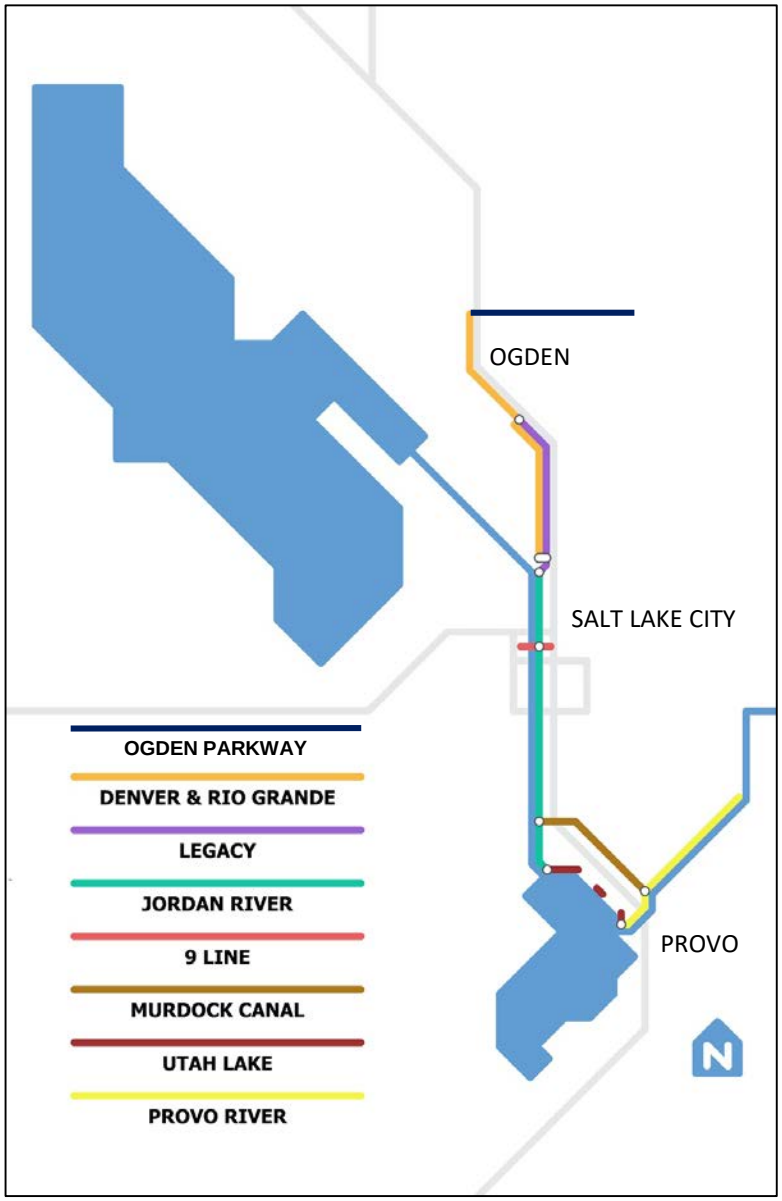

UDOT
udot.utah.gov


UTA


MOUNTAINLAND
ASSOCIATION OF GOVERNMENTS


WASATCH FRONT REGIONAL COUNCIL

Golden Spoke Rides and Event



- June 2, 2018 Event to Celebrate
- Ogden to Provo
- 100+ Miles
- Separated, Safe, Multi-use Trail network
- Final Bridge at North Temple

WASATCH FRONT REGIONAL COUNCIL

Golden Spoke Logo

OPTION A

OPTION B

OPTION C

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