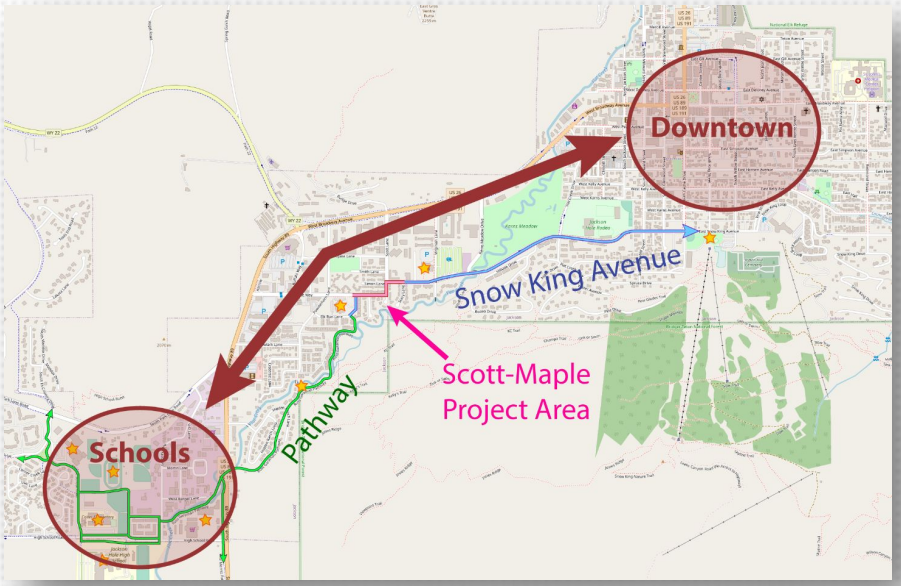
Dutch-Inspired Transportation Solutions in Mountain Towns: Network Planning



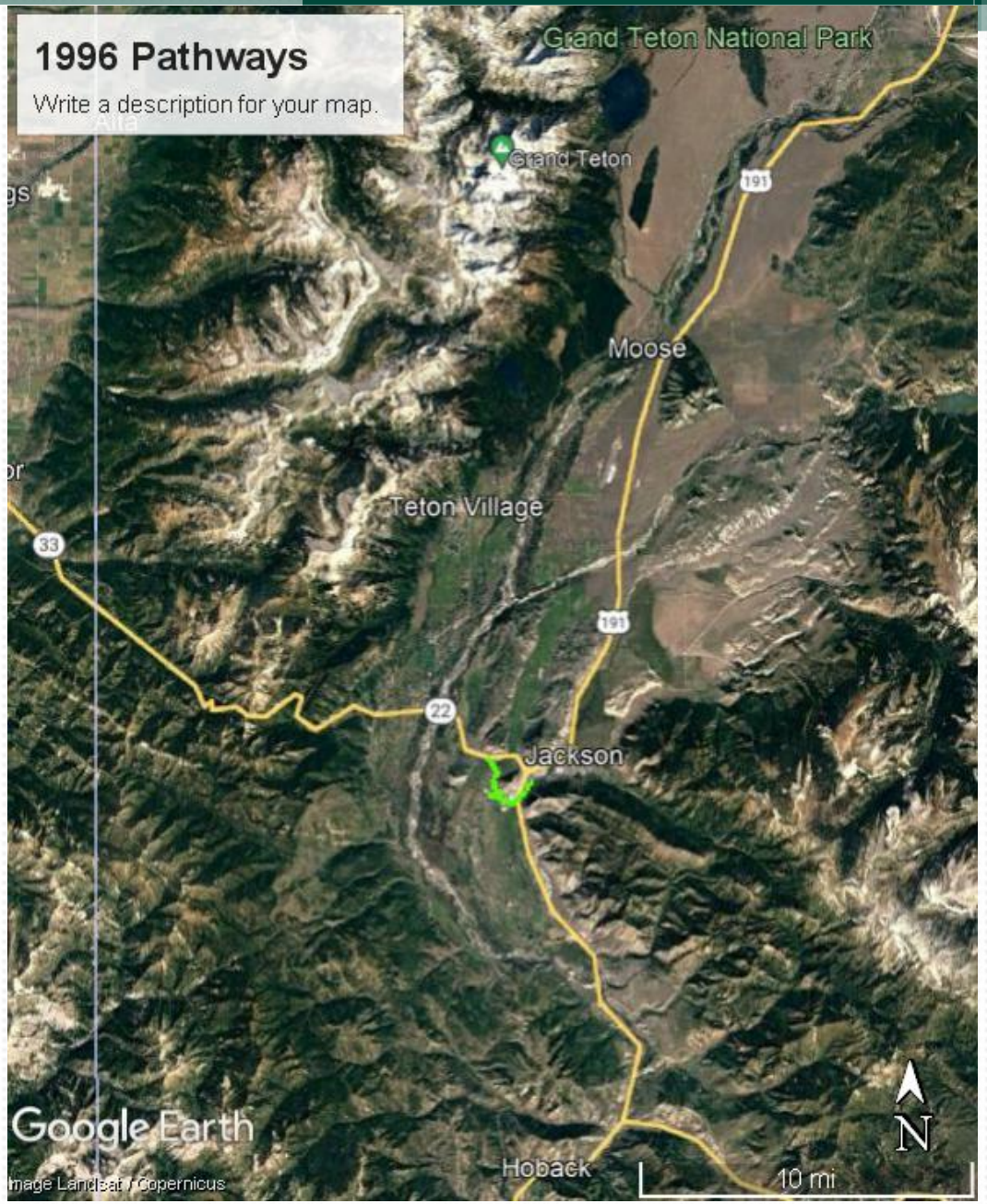
Town of Jackson/Teton County Pathways

Connecting People and Places

Connecting People and Places

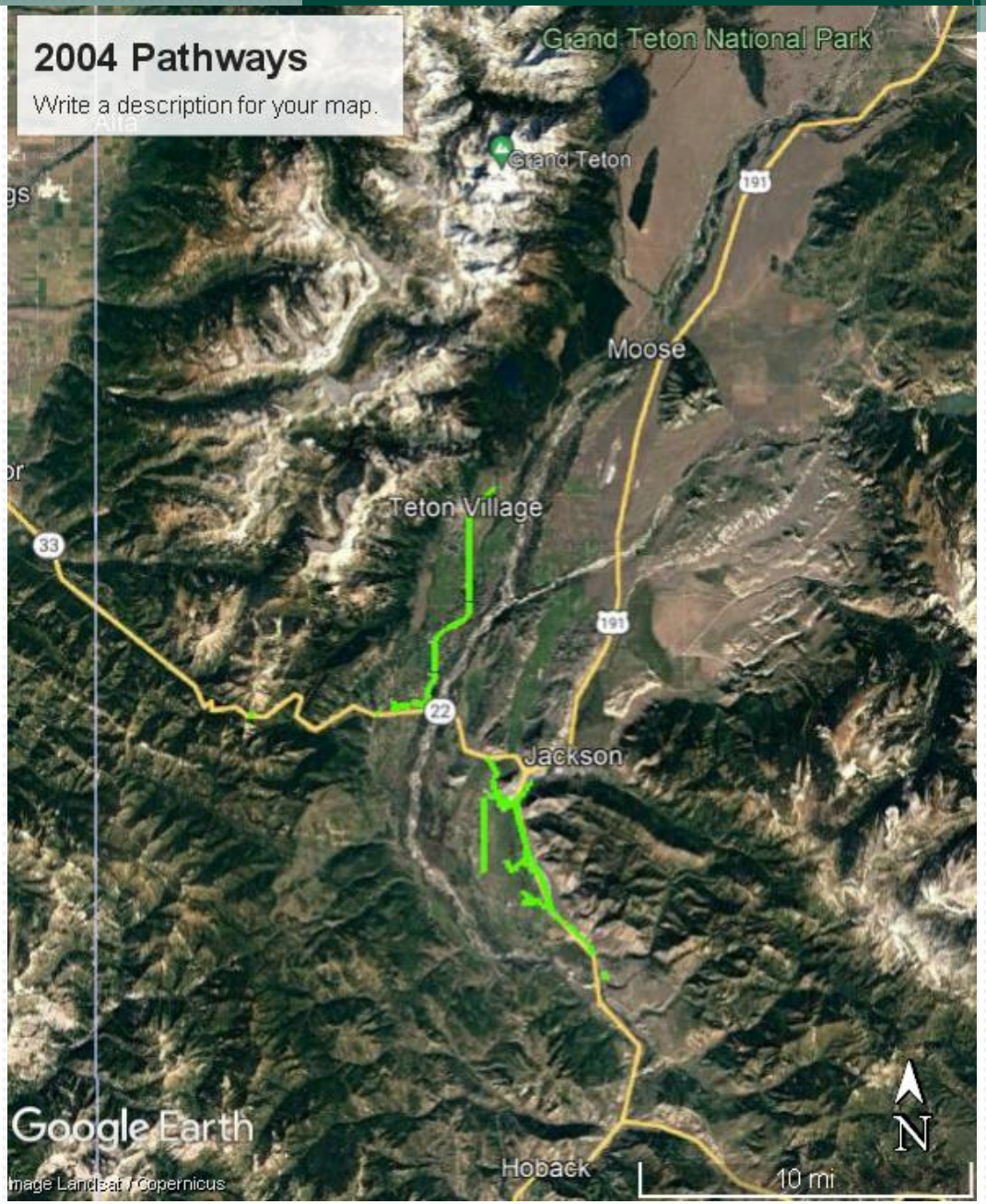
Pathways 1996

- 3.6 miles
- First connections to schools and in new housing development



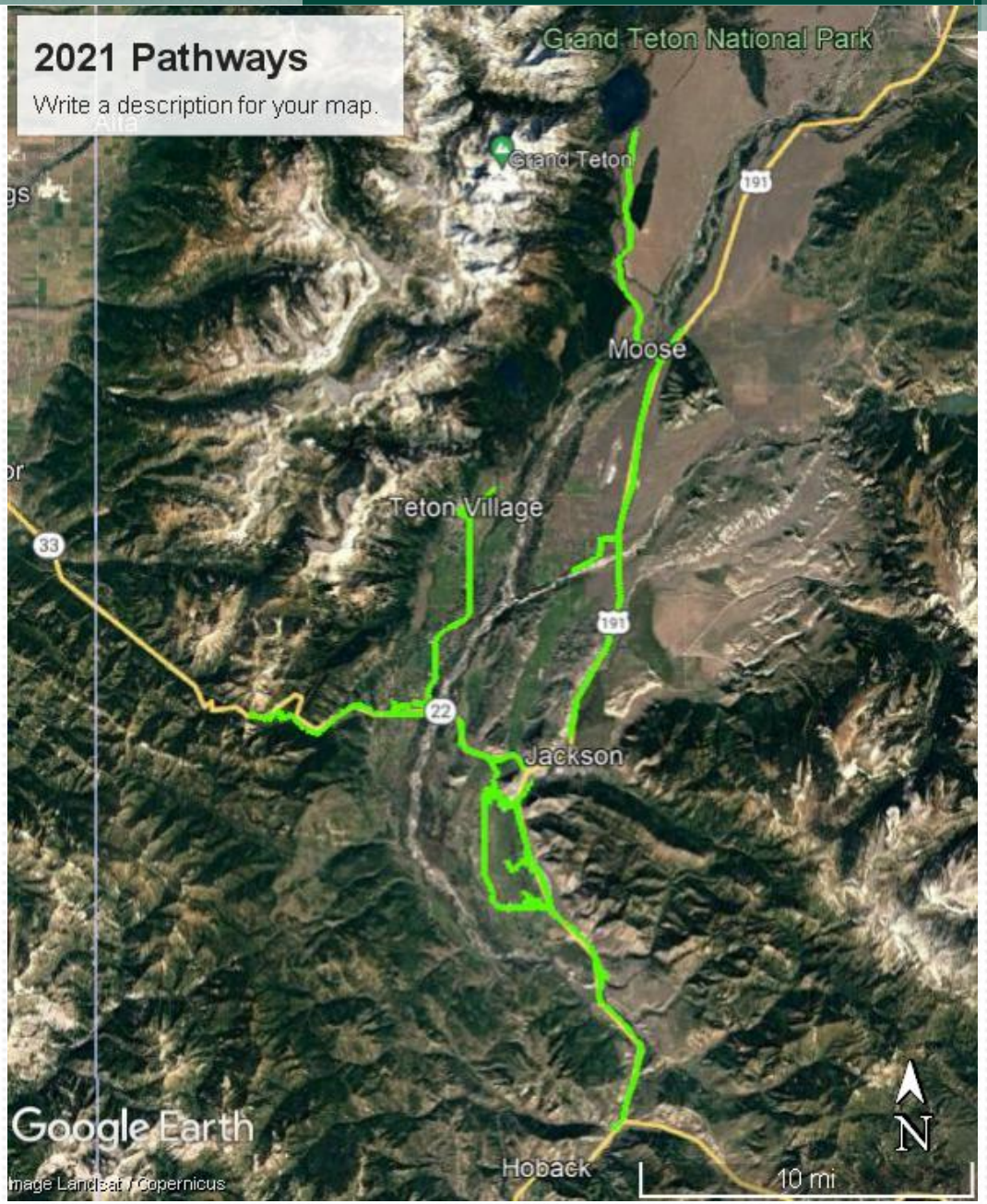
Pathways 2004

- 26 miles
- West Bank system
- Expansion south to residential neighborhoods
- WYDOT construction



Pathways 2022

- 70 miles
- Connected West Bank and Jackson networks
- Grand Teton National Park
- Jenny Lake to Hoback Jct. (35 miles)



Connecting People and Places

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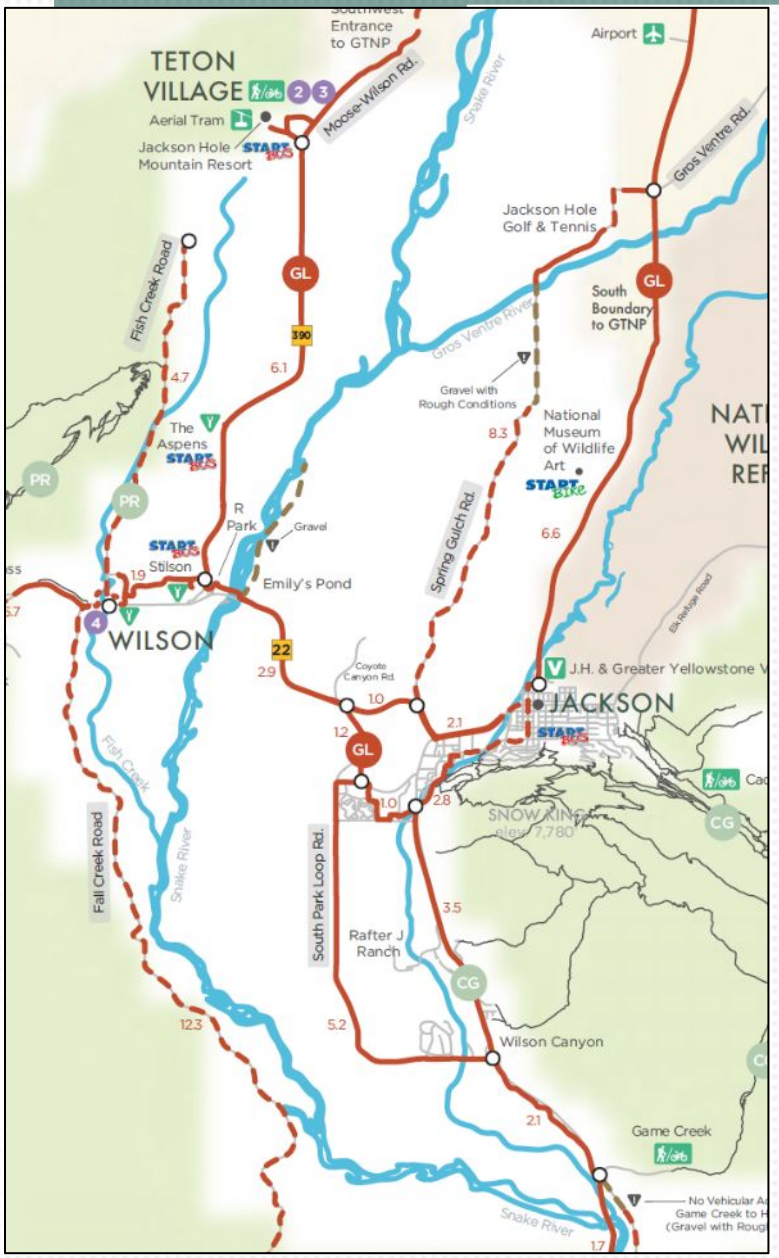
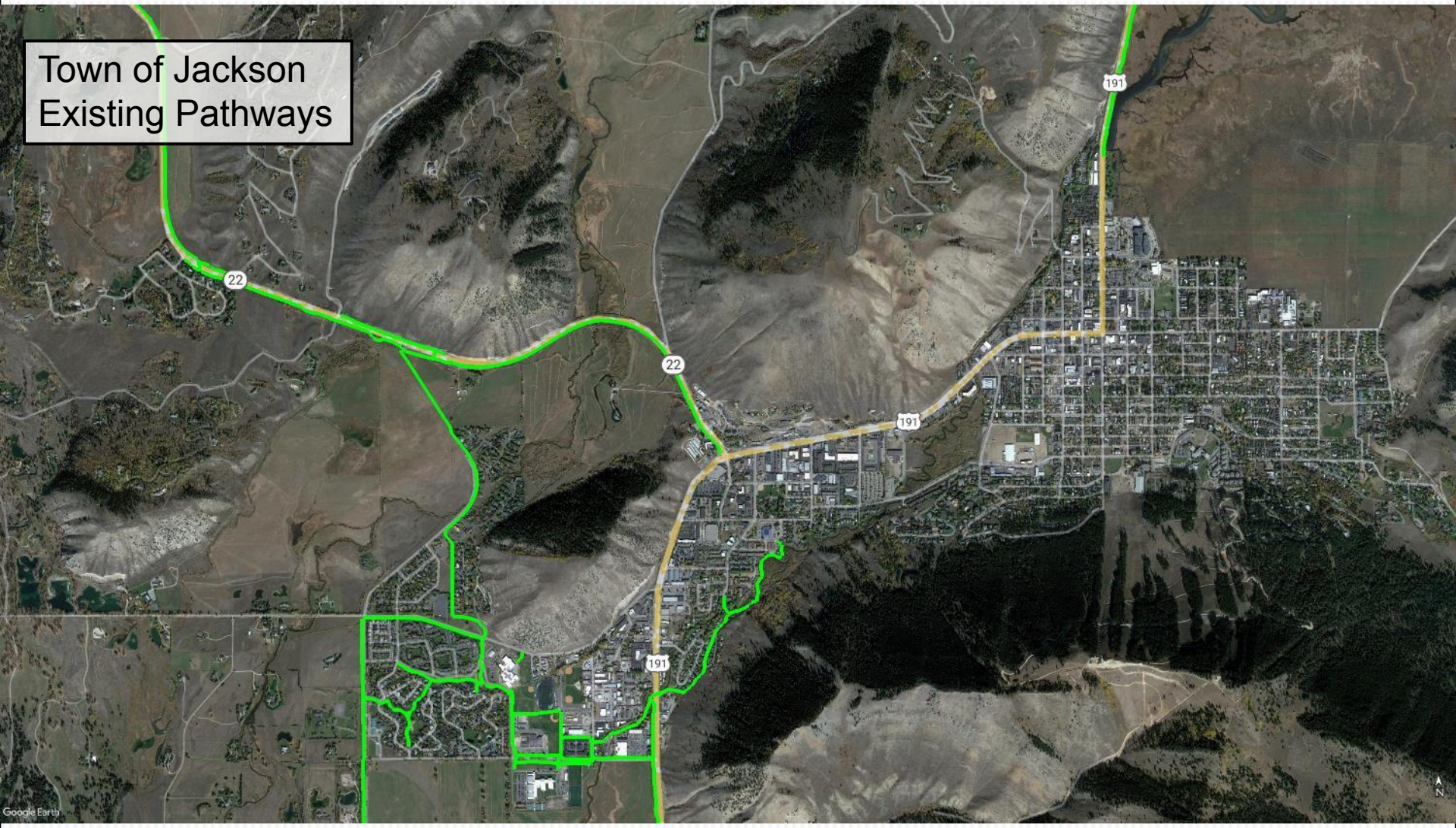



Town of Jackson
Existing Pathways
22
22
191
191
191
Google Earth

Garaman Path to Snow King Ave. Transition

North 89 Path to Cache St. Transition

Comprehensive Plan – 2020

Chapter 7. Multimodal Transportation

> Travel by walk, bike, carpool, or transit will be more convenient than travel by single-occupancy vehicle.

"The transportation network will be an *interconnection of walking, biking*, carpool, and transit infrastructure that makes the single-occupancy vehicle the *least convenient* mode of travel."

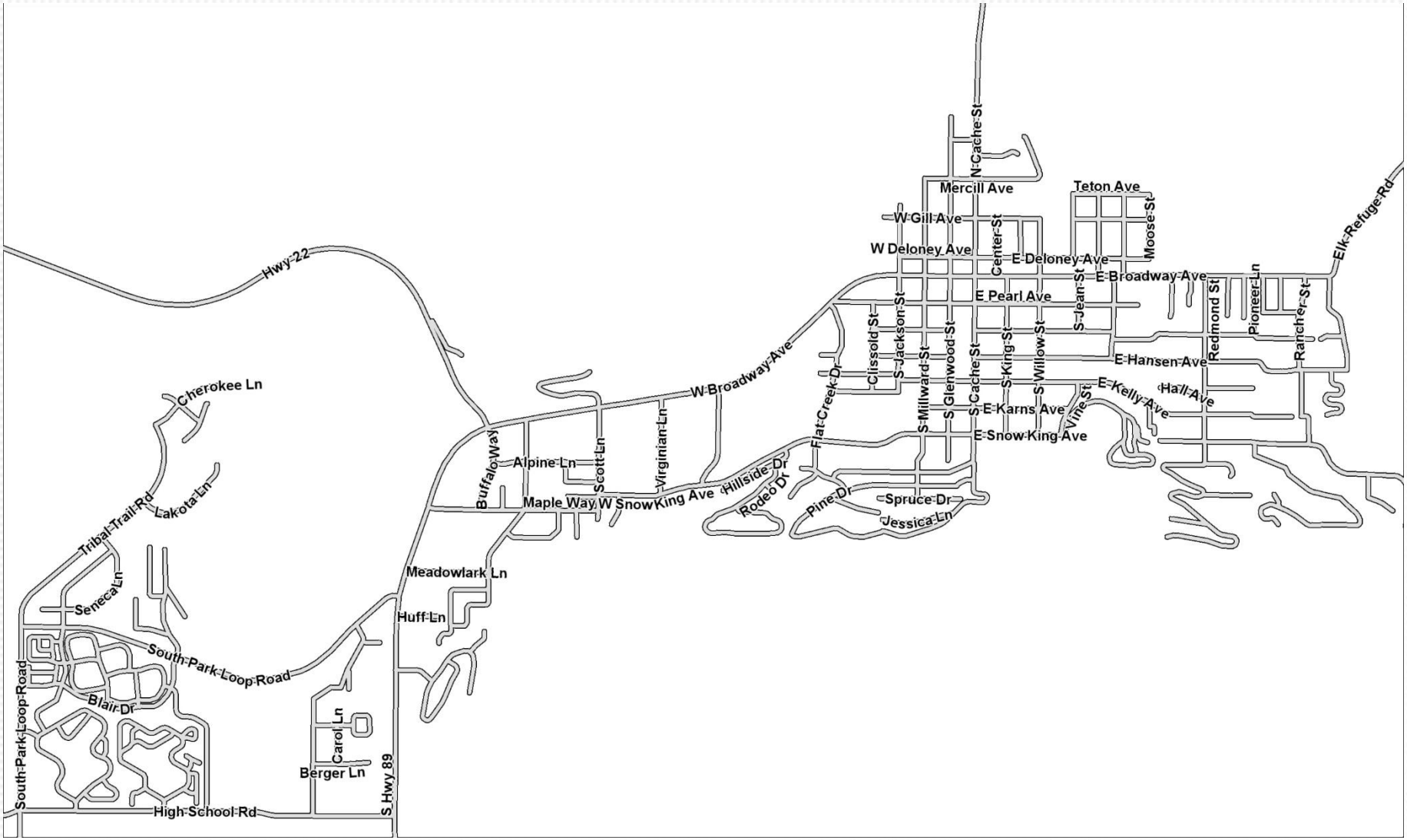
Comprehensive Plan – 2020

Chapter 7. Multimodal Transportation

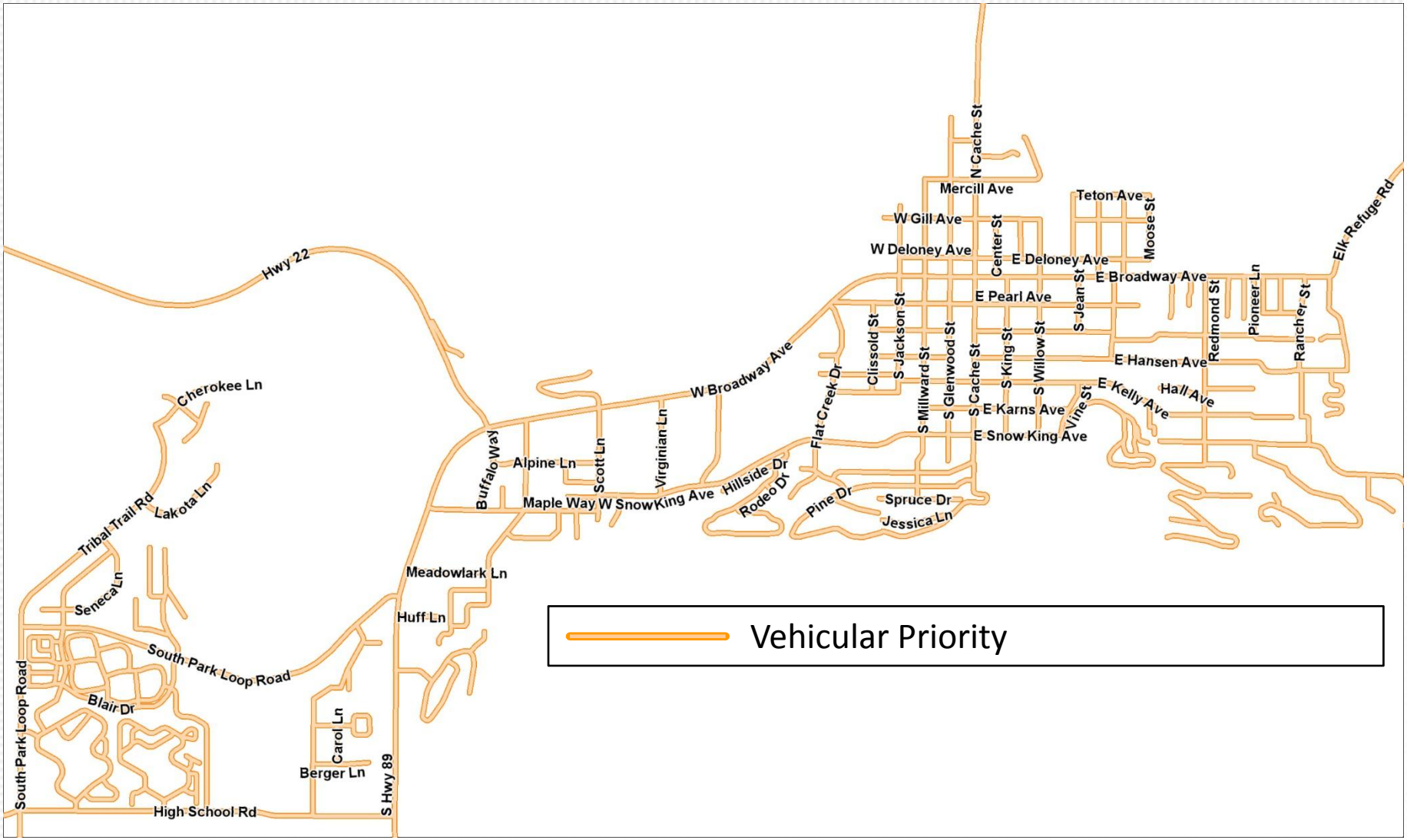
> Travel by walk, bike, carpool, or transit will be more convenient than travel by single-occupancy vehicle.

The community's transportation vision is to create a *multimodal transportation system* by enhancing the current automobile-oriented system to include a *network of complete streets*, transit, and pathways system *accessible by residents and visitors of all ages and abilities*.

Town of Jackson Network



Town of Jackson Network



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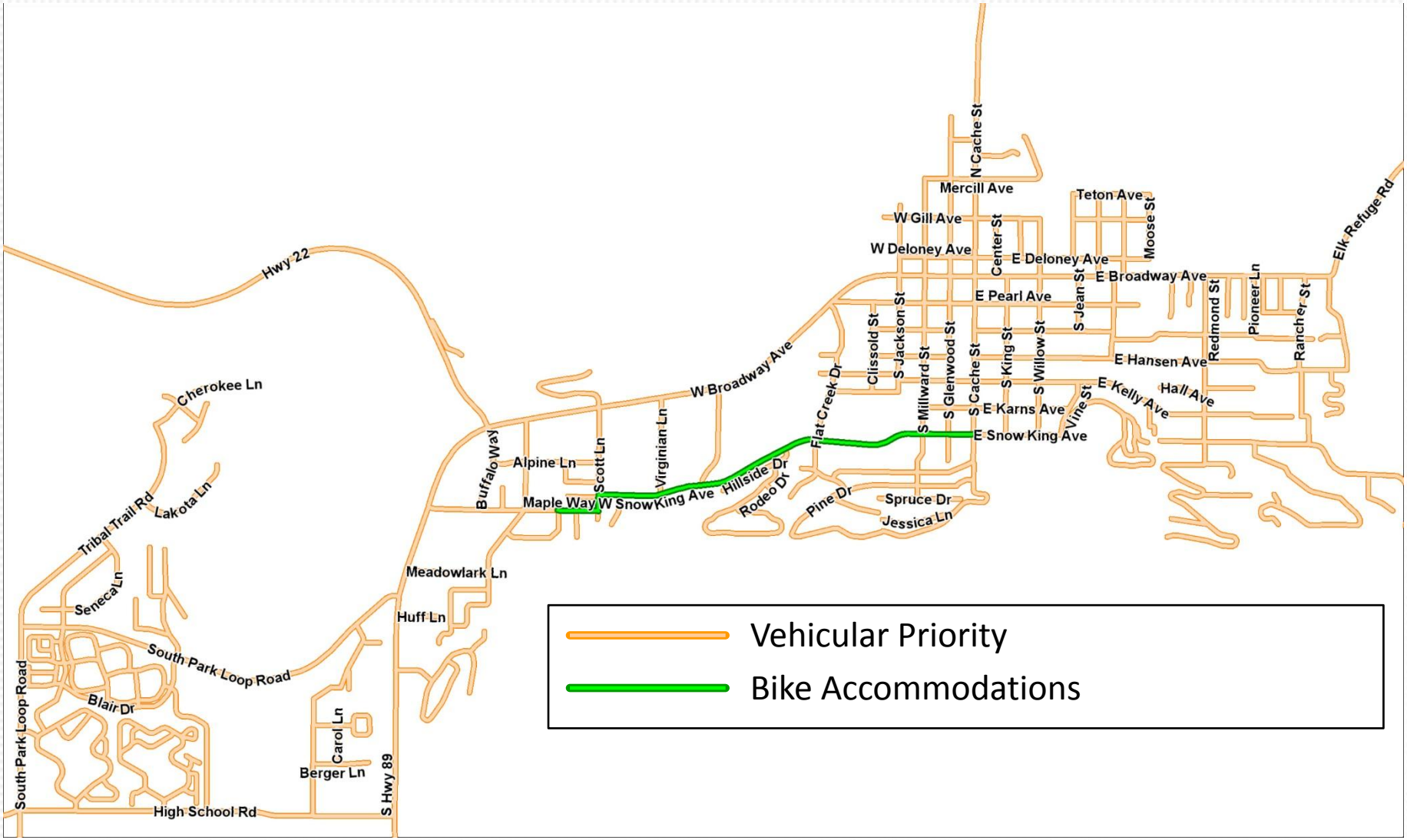
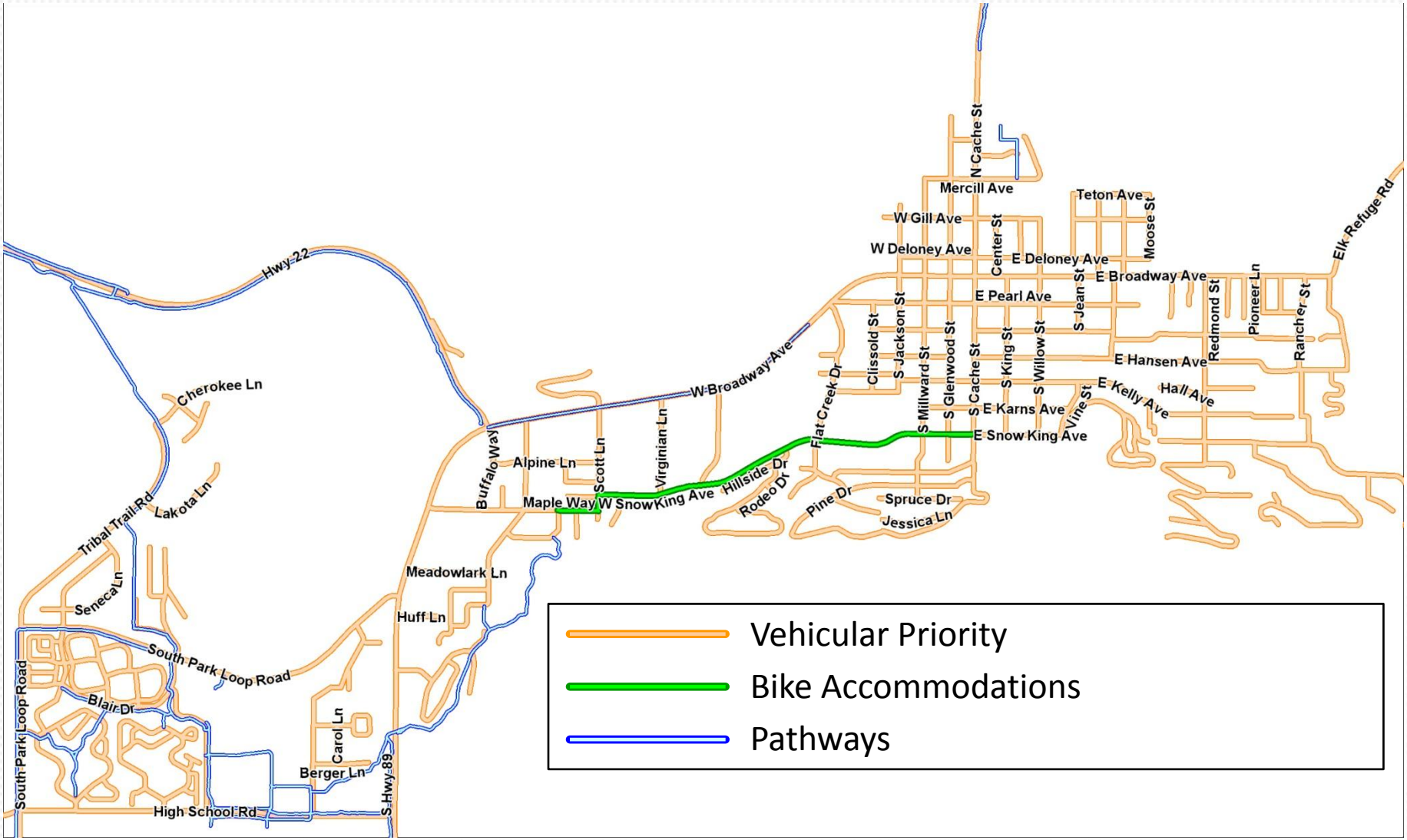
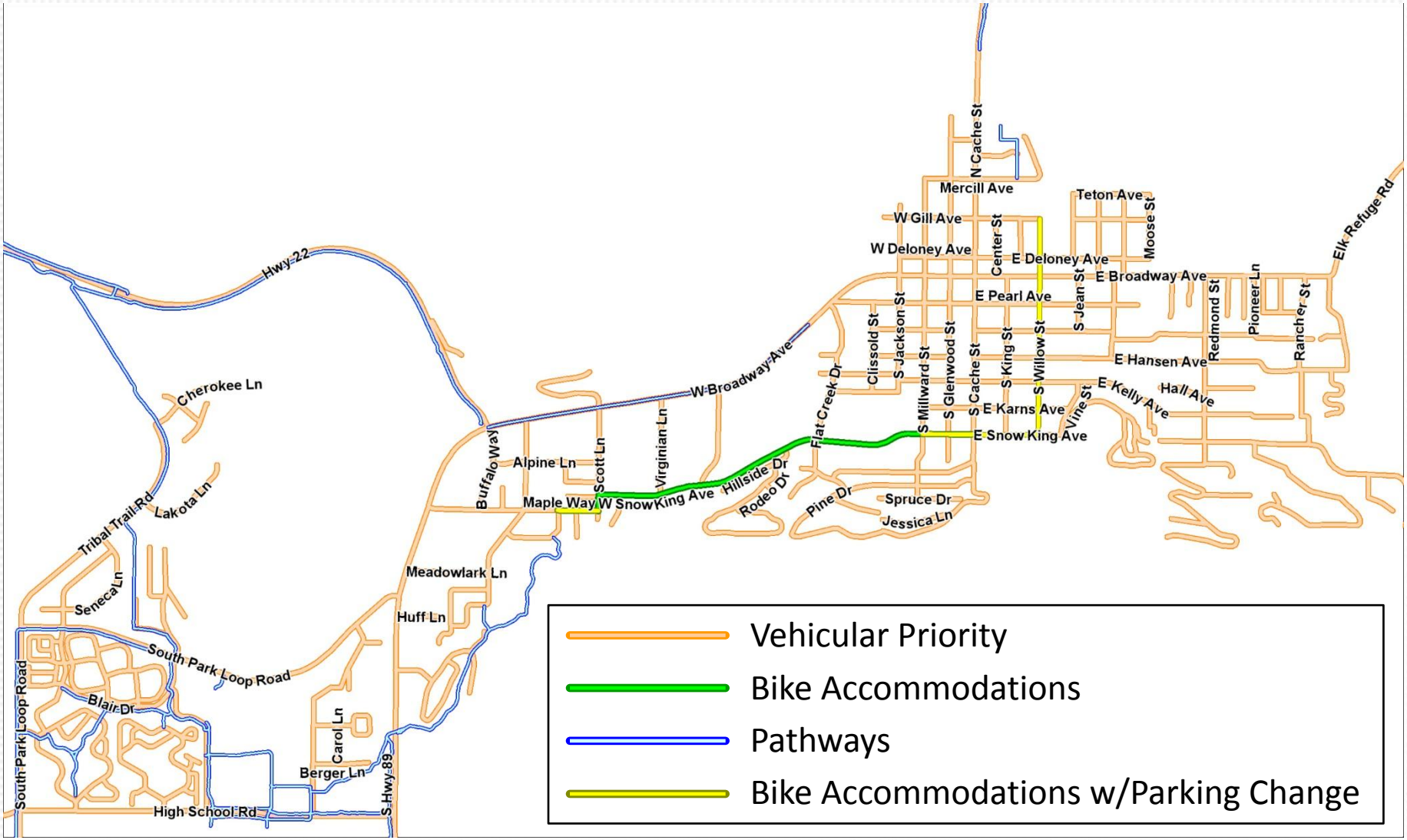


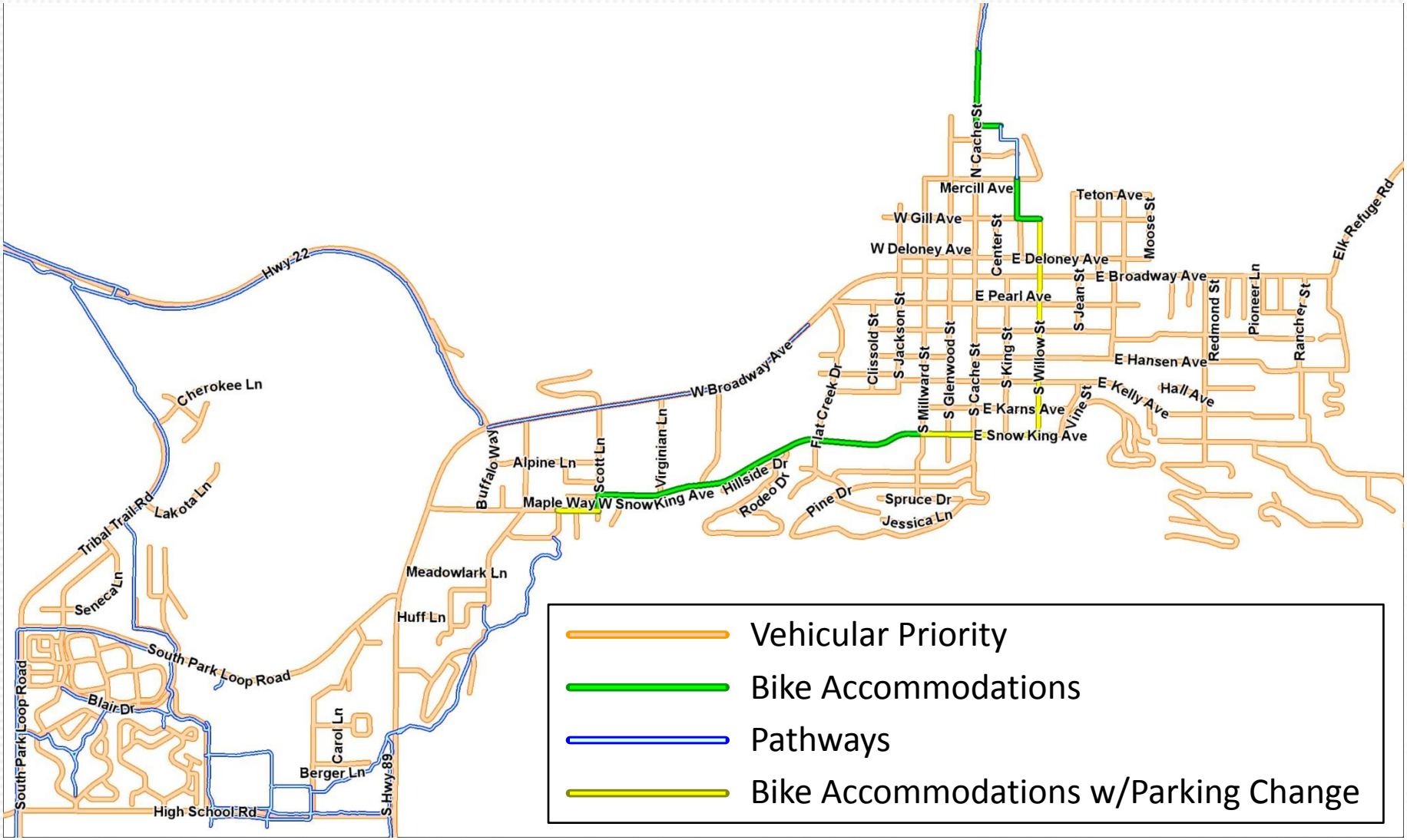
Town of Jackson Network



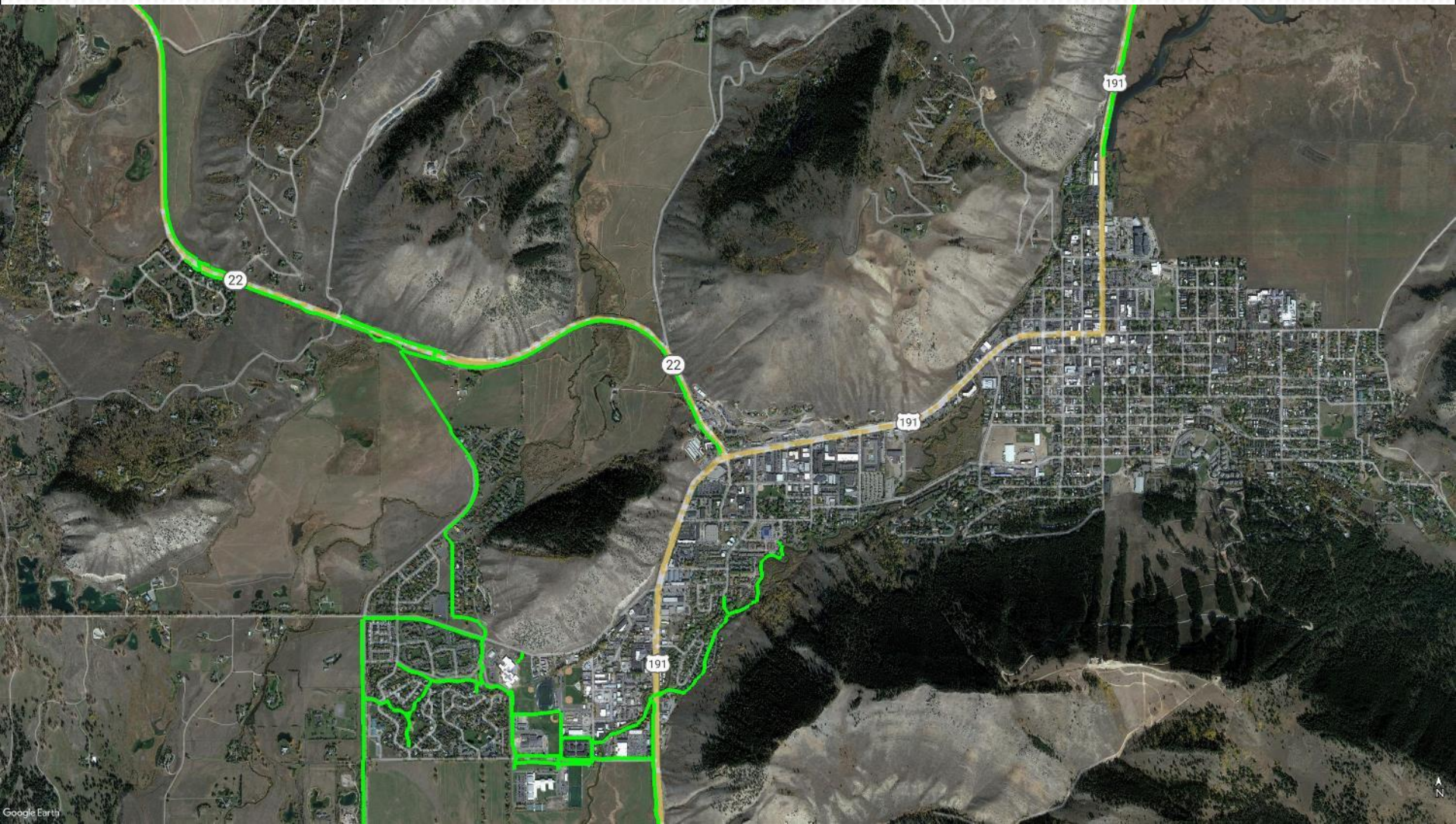
Town of Jackson Network



Town of Jackson Network



Town of Jackson Network



Mobility Overlay

- Next Level Planning
  - Examines overlapping networks of different mobility types
    - Transit, bike, pedestrian, vehicular…
  - Different land uses and desired street function
    - Access, shopping, residential, seasonal shifts,
  - Balances *place* and *flow* functions
    - Areas with both high place and high flow are the most difficult to design
  - Framework for resolving conflicts
    - Place and Flow
    - Different travel modes

Design Principles for Successful Bicycle Networks

- Cohesion
- Directness
- Safety
- Comfort
- Attractiveness

Credits:

Design principles: CROW Bike Design Manual

Graphics: Dutch Cycling Embassy

Bike Network Principle - #1

COHESION

- Connecting origins and destinations
- Cycling from anywhere to everywhere

- Home
- School
- Work
- Dining
- Shopping
- Recreation

Bike Network Principle - #2

DIRECTNESS

- Creating short and fast routes
- Minimizing detours

✓

- Fast
- Less physical effort
- Competitive alternative

✗

- Slow
- More physical effort
- Uncompetitive alternative

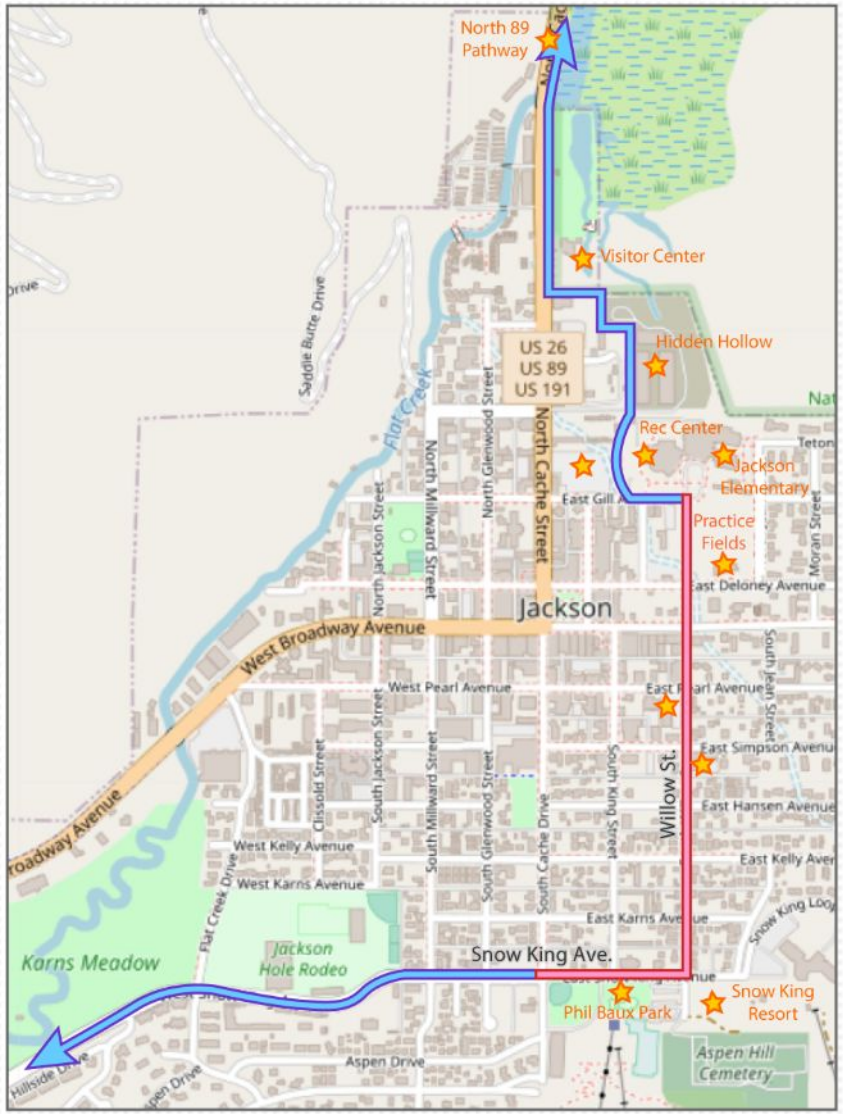
Network Principles

COHESION

- Connecting origins and destinations

DIRECTNESS

- Minimizing detours
- Not always the most direct route



Bike Network Principle - #3

SAFETY

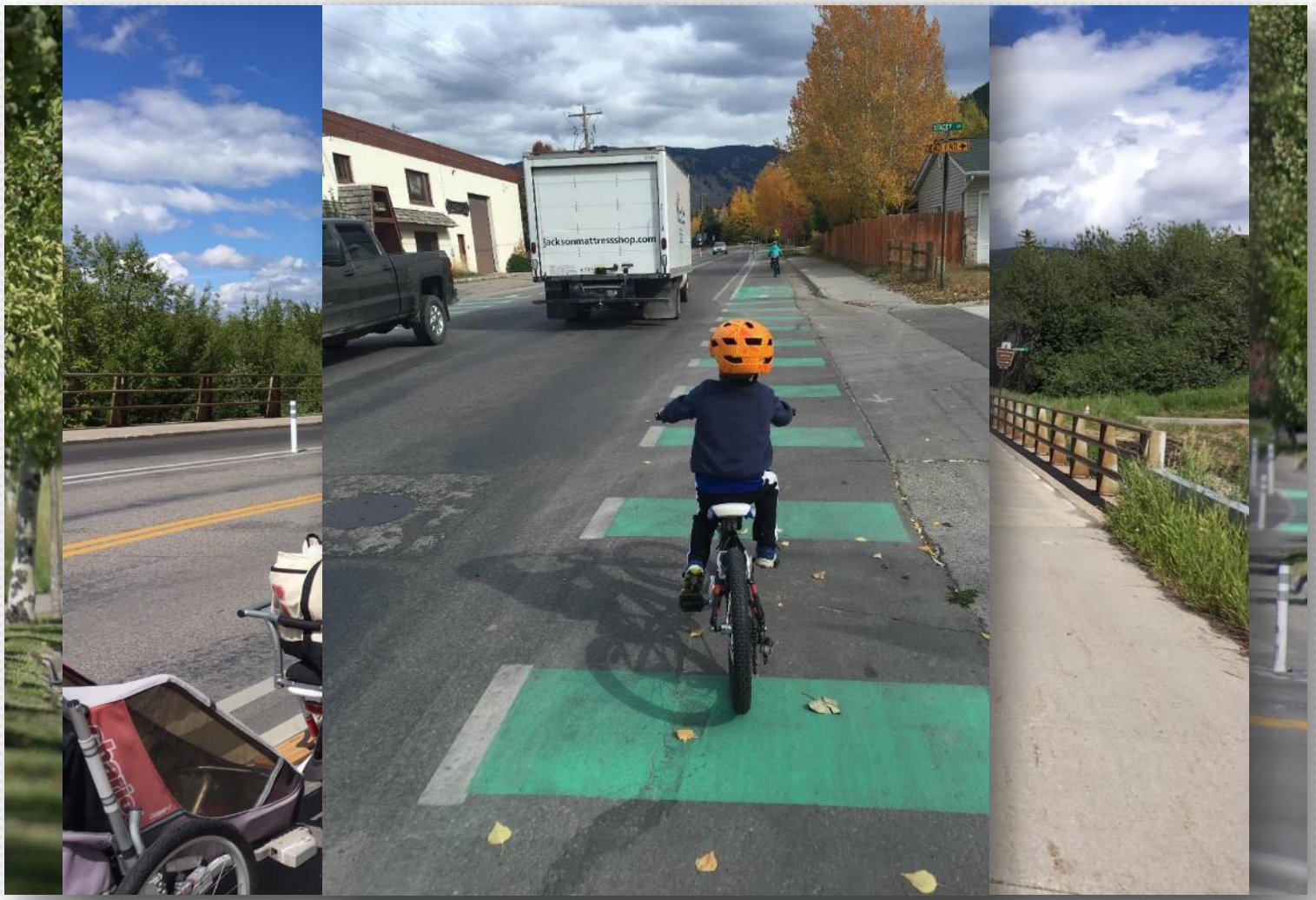
- Reduce exposure to crash risk by avoiding differences in SPEED and MASS
- Create homogeneous traffic flows
- Reduce exposure to risks to personal health: pollution, noise, and stress

SAFETY

- Separation based on speed and mass

SAFETY

- Separation based on speed and mass



SAFETY

- Network level decisions

Bike Network Principle - #4

COMFORT

- Generally reduce elements that may make cycling uncomfortable and therefore a less viable option for people
- Pavement smoothness,
- Avoid unnecessary exertion (overpasses, gradients)
- Minimal stops -- traffic lights or other (inertia, balance)
- Wayfinding
- Often overlooked as a design principle

Bike Network Principle - #5

ATTRACTIVENESS

- Create routes that are attractive places in order to encourage use

ATTRACTIVE

- Green
- Open
- Water
- Well maintained
- Quiet streets

UNATTRACTIVE

- Traffic
- Congestion
- Industry
- Dark / unlit

Systematic Safety

- Systematic approach to improving infrastructure design
  - crashes are prevented as much as possible
  - eliminate severe injuries when crashes do occur.
- Acknowledges that:
  - road system is inherently unsafe
  - humans are imperfect and make mistakes (and sometimes don't follow rules)
- Proactive, not reactive.
  - Remedies gaps and mistakes in design before crashes occur, not after.


BELL
THANK YOU!

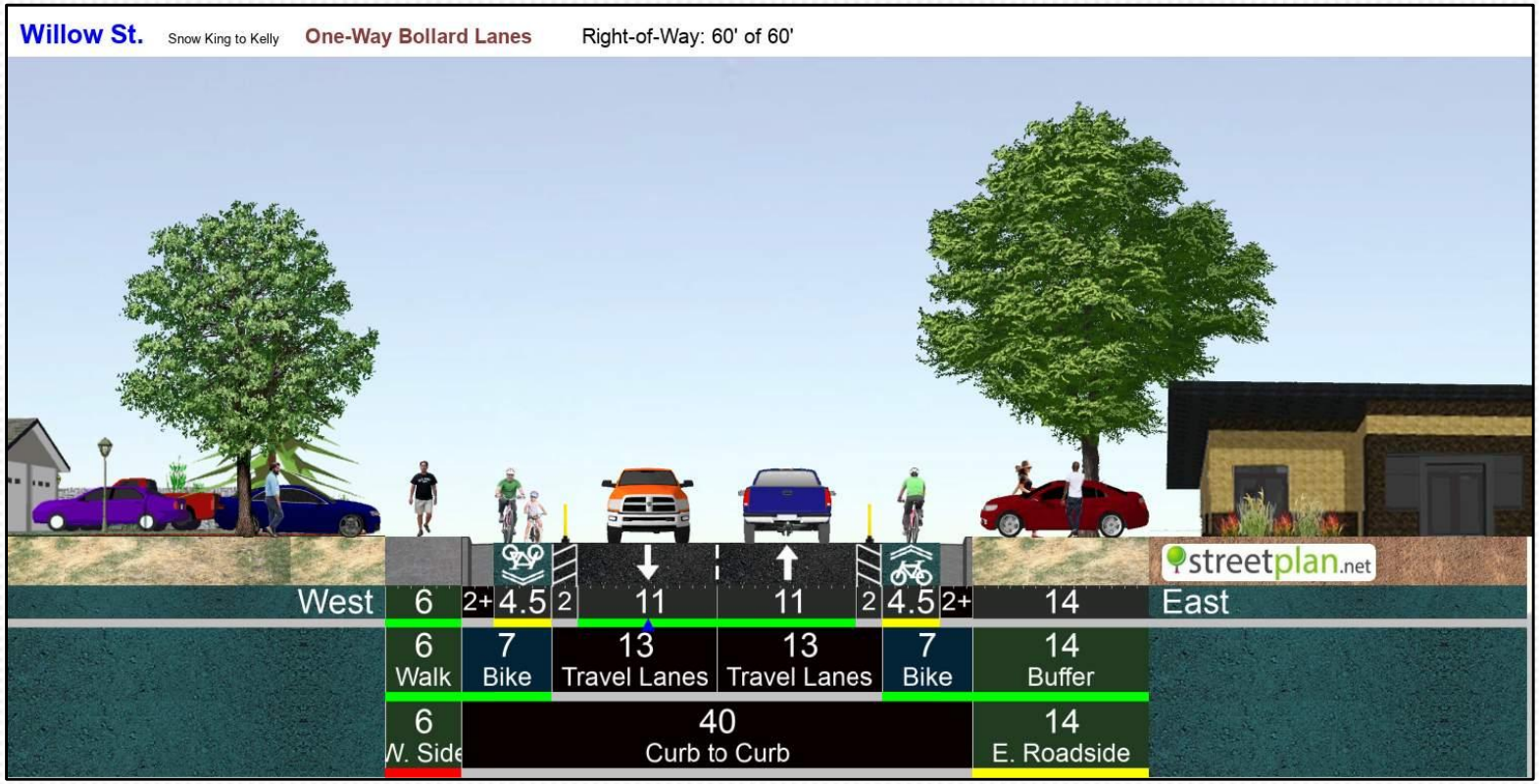
Supplemental

Connecting People and Places


CHEVROLET
BIKE LANE

Recommended Alternative – Willow St.

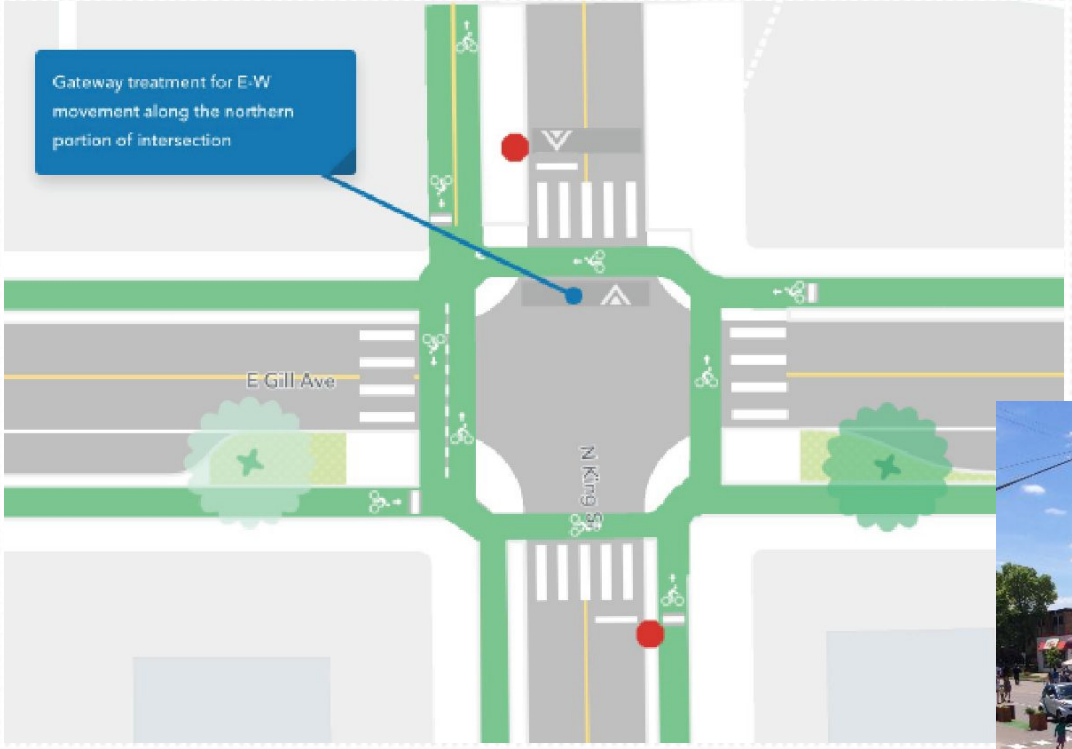
- Willow St. - Alternative A
  - One-way buffered bike lanes on both sides of street, maintain two-way vehicular traffic flow. South North



Connecting People and Places

Connecting People and Places

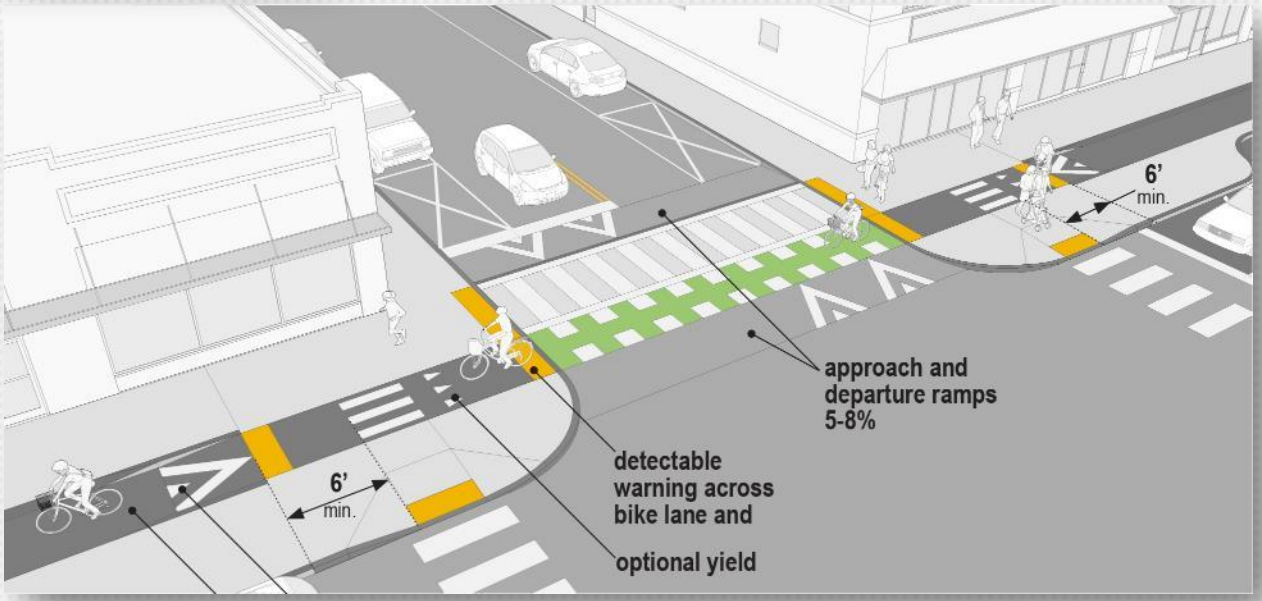
What might this look like?



Protected Intersections

What might this look like?

Raised/Continuous Side Crossings

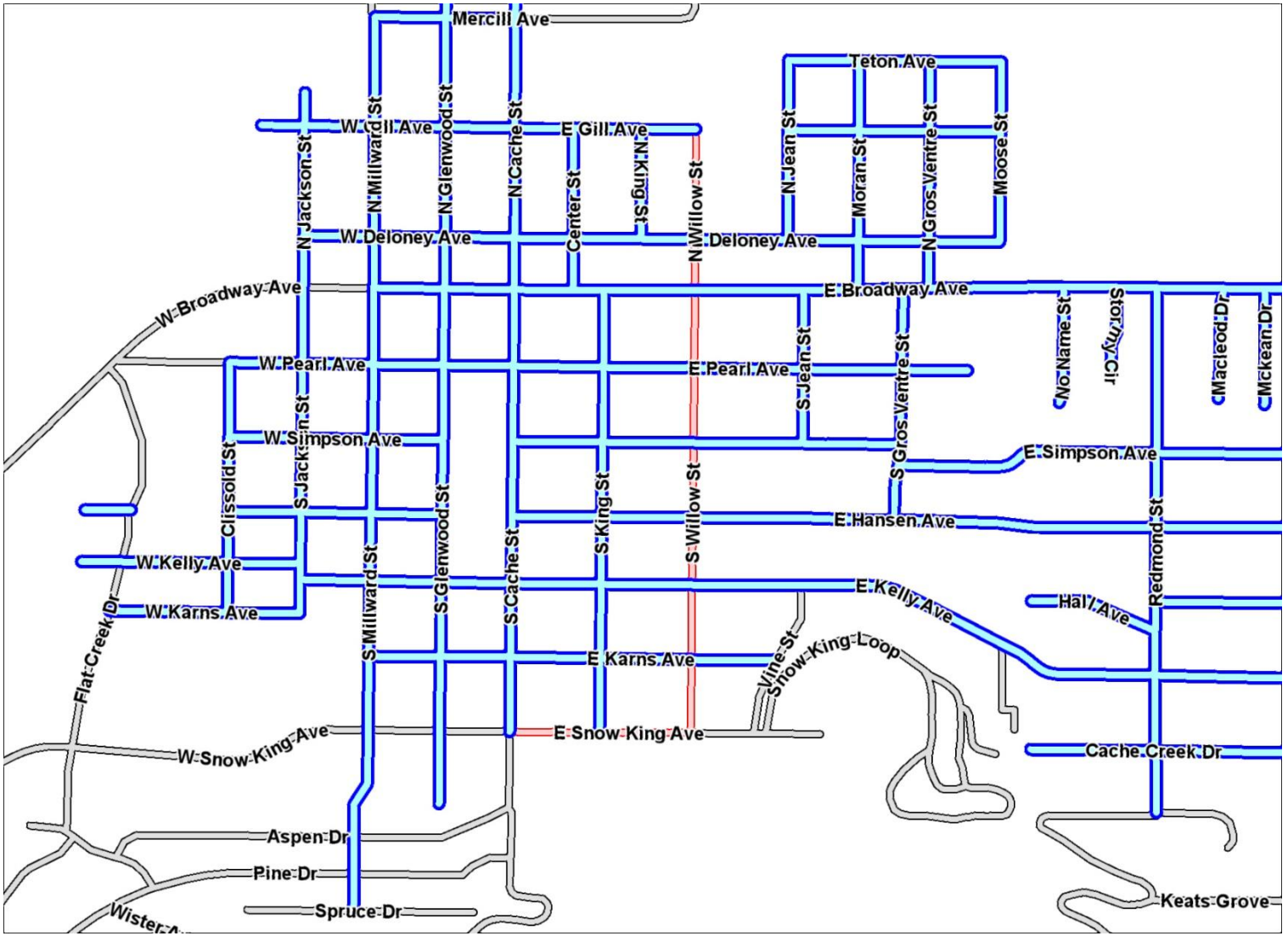


What might this look like?

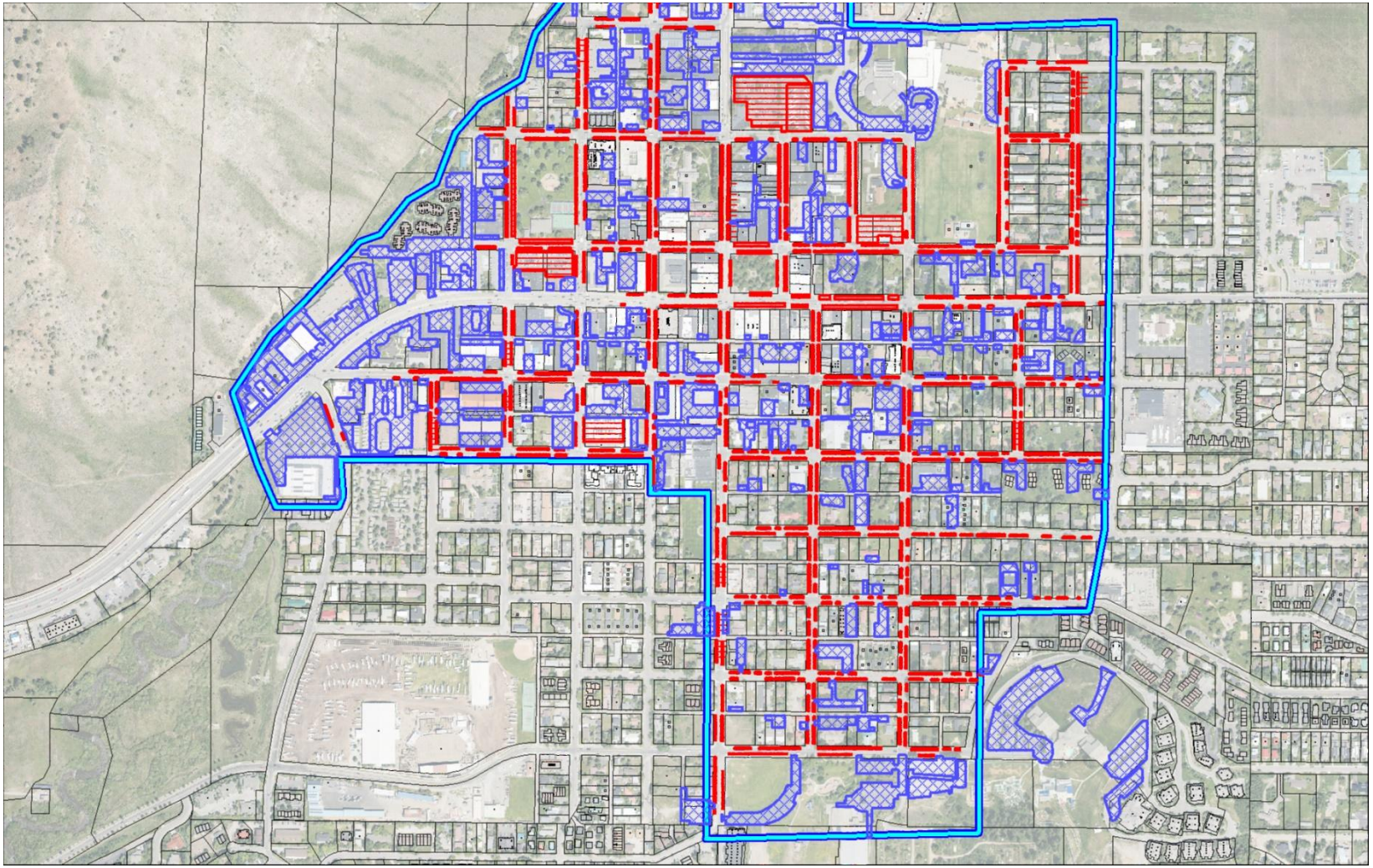
Buffered vs. Protected Bike Lane
(Short term vs. long term)

Integration with other projects

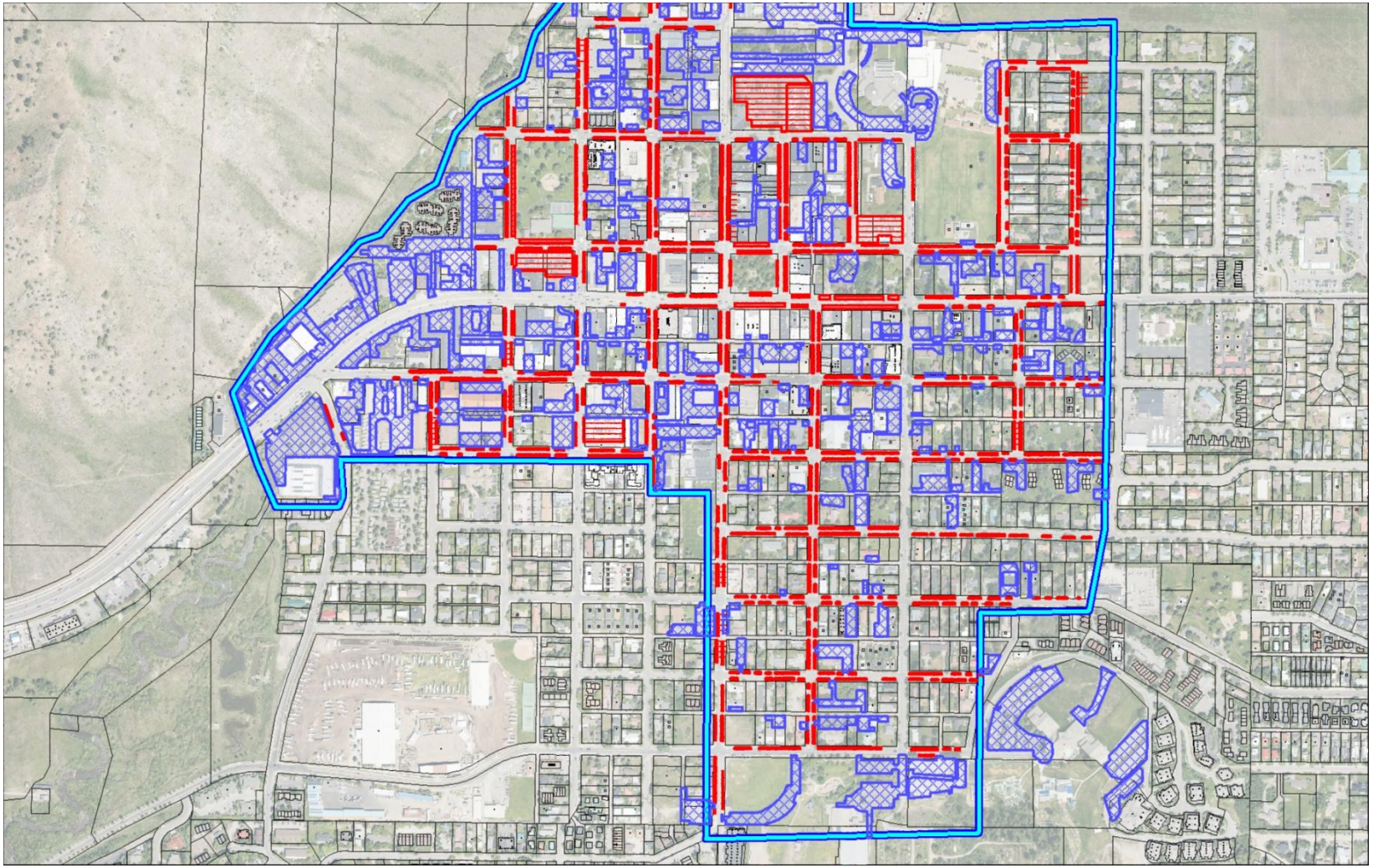
Parking – Willow



Parking – Willow



Parking – Willow



SIXTH ANNUAL

GABRIELLA AXELRAD MEMORIAL BICYCLE RIDE

GRAND TETON NATIONAL PARK — SUNDAY, JULY 24, 2005

please attend this special event!
your participation is critical.

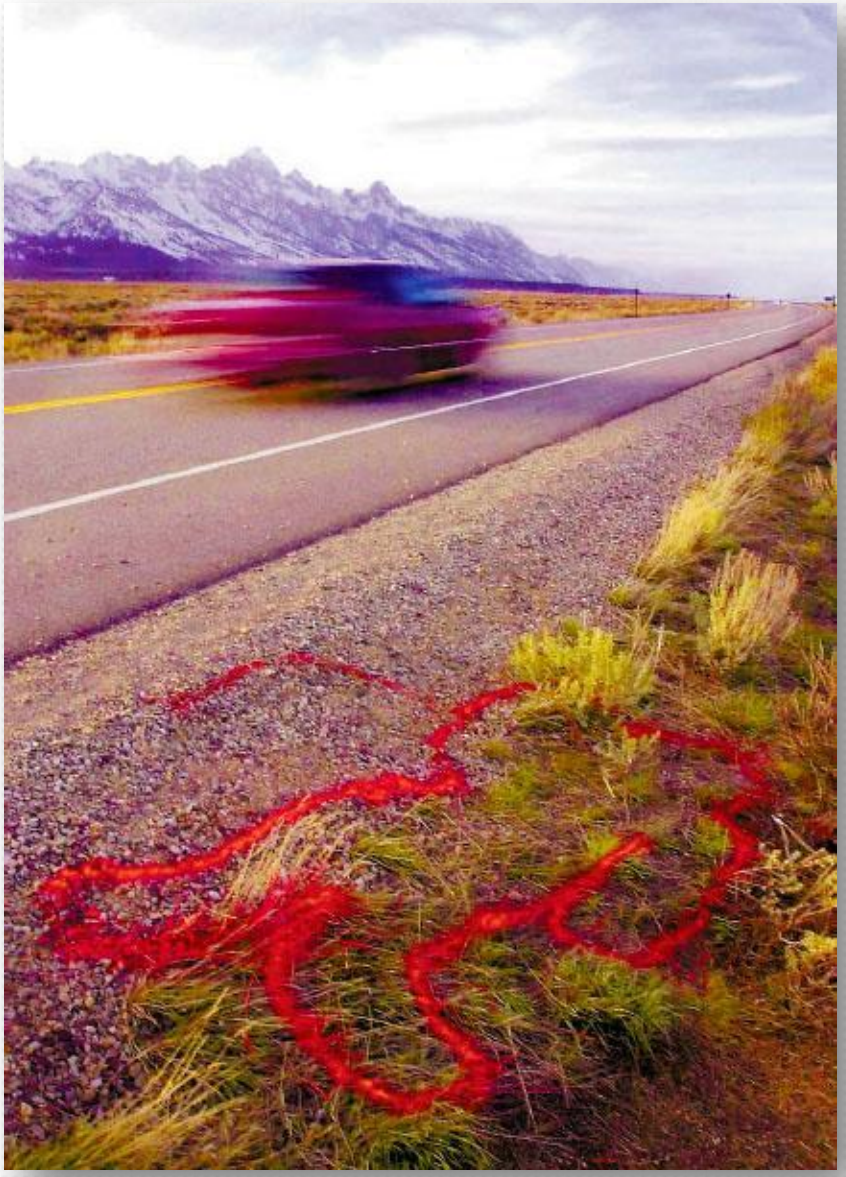
you're invited: The family of Gabriella Axelrad invites you to join them in a bicycle ride in her memory on the sixth anniversary of her bicycling death in Grand Teton National Park. Memorial ride participants will bicycle together past the site of Gabriella's death and gather nearby at Jenny Lake where they will discuss how future similar incidents may be prevented through the construction of safe bicycling facilities and motorist awareness.

meeting location: Moose Visitor Center to check in between 10:30 and 11:30 a.m. to receive Ride details. The ride will begin at 12 noon from the String Lake parking area (8 miles round trip). Please remember to bring your helmet. The National Park entrance fee will be waived for Ride participants. Riders will receive a complimentary t-shirt. Lunch will be provided.

rsvp: Call National Parks Conservation Association at 733-4680 or Friends of Pathways at 733-4534

Your participation in this ride will help to strengthen the national effort to provide safe bicycling facilities in our national parks. Please come and show your support.

Gabri was just 13 years old when she was struck and killed by a speeding car while bicycling with her family in Grand Teton National Park in July 1999. Gabri, who lived in Los Angeles, was an avid cyclist and accomplished dancer. She had cycled in France, Italy, the Canadian Rockies, the Pacific Northwest and California. She was loved for her kindness, wit and style and is missed more than can be imagined.



Connecting People and Places

Sustainable Safety

- Road system is inherently unsafe
- People are human and make mistakes
- Homogeneity of mass and speed
- Predictability and Forgivingness
- A simple mistake is not fatal

Systematic Safety Principle #1

Functionality of Roads

- Each road or street has only one purpose.
- Through roads, local roads, and distributors.
  - Similar to concept of arterials or highways, local roads, and collectors.
- No mixing of functions (no “stroads”).
- High speeds and traffic volumes may be desirable on through roads but are not compatible on a residential street.

Systematic Safety Principle #2

Homogeneity of Mass, Speed, and Direction

- Large differences in speed and mass of different road users in the same space must be eliminated as much as possible.
- Road design, not speed limits, achieves lower speeds.
- Mix when possible (25mph or less), separate when needed. (Shared streets, pathways)
- Intersection design—roundabouts, grade separation.

Systematic Safety Principle #3

Predictability (recognizable road design)

- Design is consistent for each type of road
- Road users instantly recognize road type and understand what is expected
- Through roads do not look or feel anything like local roads.

Systematic Safety Principle #4

Forgivingness

- People are human and make mistakes.
- A simple mistake should not result in a serious injury or fatality.
- Road design needs to ensure that in the case of human error, any crashes are minor and/or injury doesn't occur.
- Protected intersections, clear zones, buffered lanes.

Systematic Safety Principle #5

State Awareness (of road user)

- Road users must be able to assess their own capabilities and operate their vehicle safely
- Drivers of larger vehicles are expected to act more responsibly than a child walking or cycling to school, based on the danger their vehicles pose and their education and experience
- Expectations and abilities for small children and elderly are not the same as for others
- Can be improved with education, but there are limits.