

Modern Streets



Building Sustainable Places

Modern Streets

1. Streets & Places
2. Street Design Principles
3. Streets in Context
4. Making Streets “Complete”
5. Federal Policy Framework

1. Streets & Places



Modern Streets

1. Streets and Places

- Deconstructing “Mobility”
- The Fabric of Cities: Warp & Weft

Deconstructing “Mobility”

Humans Evolved to be Mobile



Mobility Elements

Travel – Moving over distances

Circulation – Moving within areas

Access – Getting in the door

Facilities

Travel – Freeways, arterials, rail transit, express bus lanes

Circulation – Collectors, connectors, transit routes, bike trails and lanes

Access – Local streets, parking, sidewalks and crosswalks

Built for...



Seattle



Redmond

...travel

Built for...



Denver



Boulder

...travel

Built for...



Flagstaff

...circulation

Redmond

Portland

Built for...



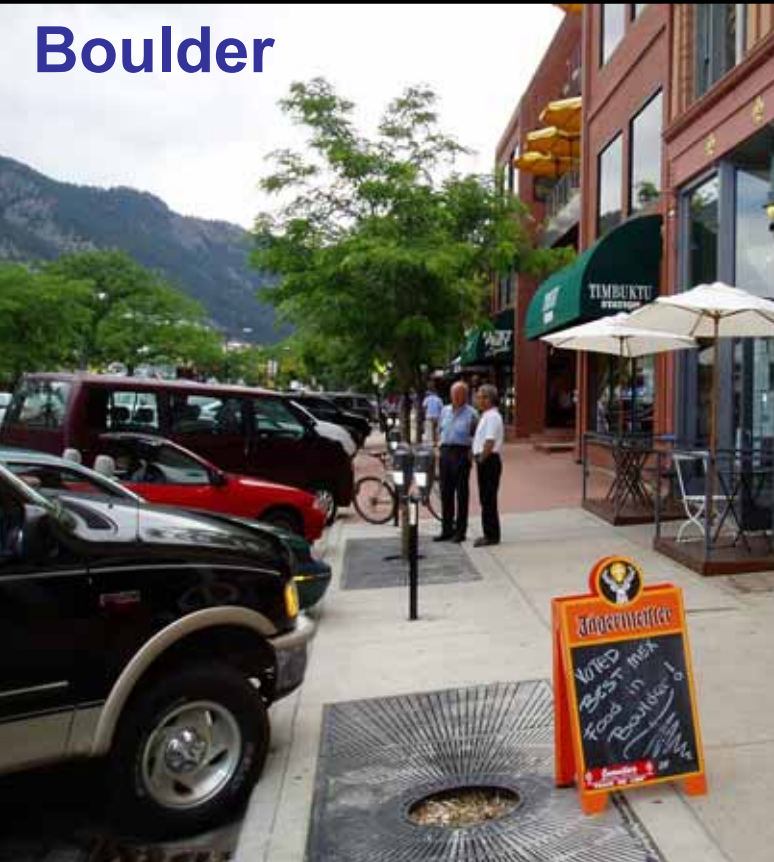
Boulder



...circulation

Built for...

Boulder



Winter Park, FL

...access



Circulation & access are much more important to **places** than travel

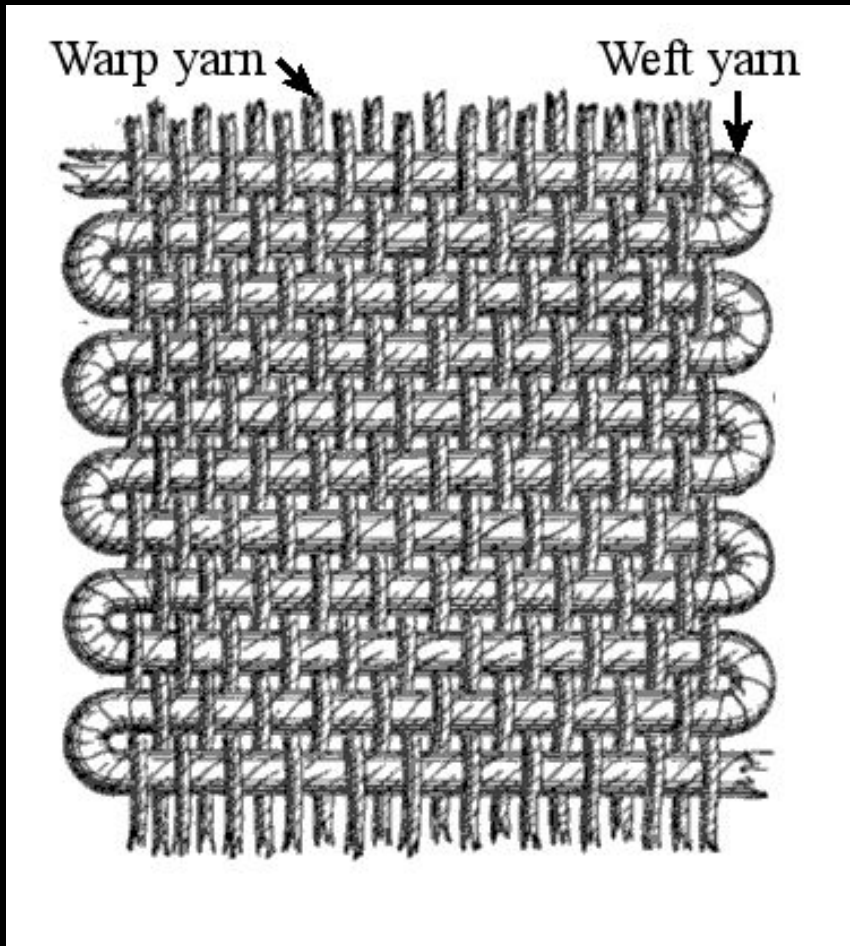


When Streets Are “Facilities”



The Fabric of Cities

Warp and Weft





Neighborhood

**Abutting
Property**

**Abutting
Property**

Street



Neighborhood



Street

Abutting Property

Lakewood, CO

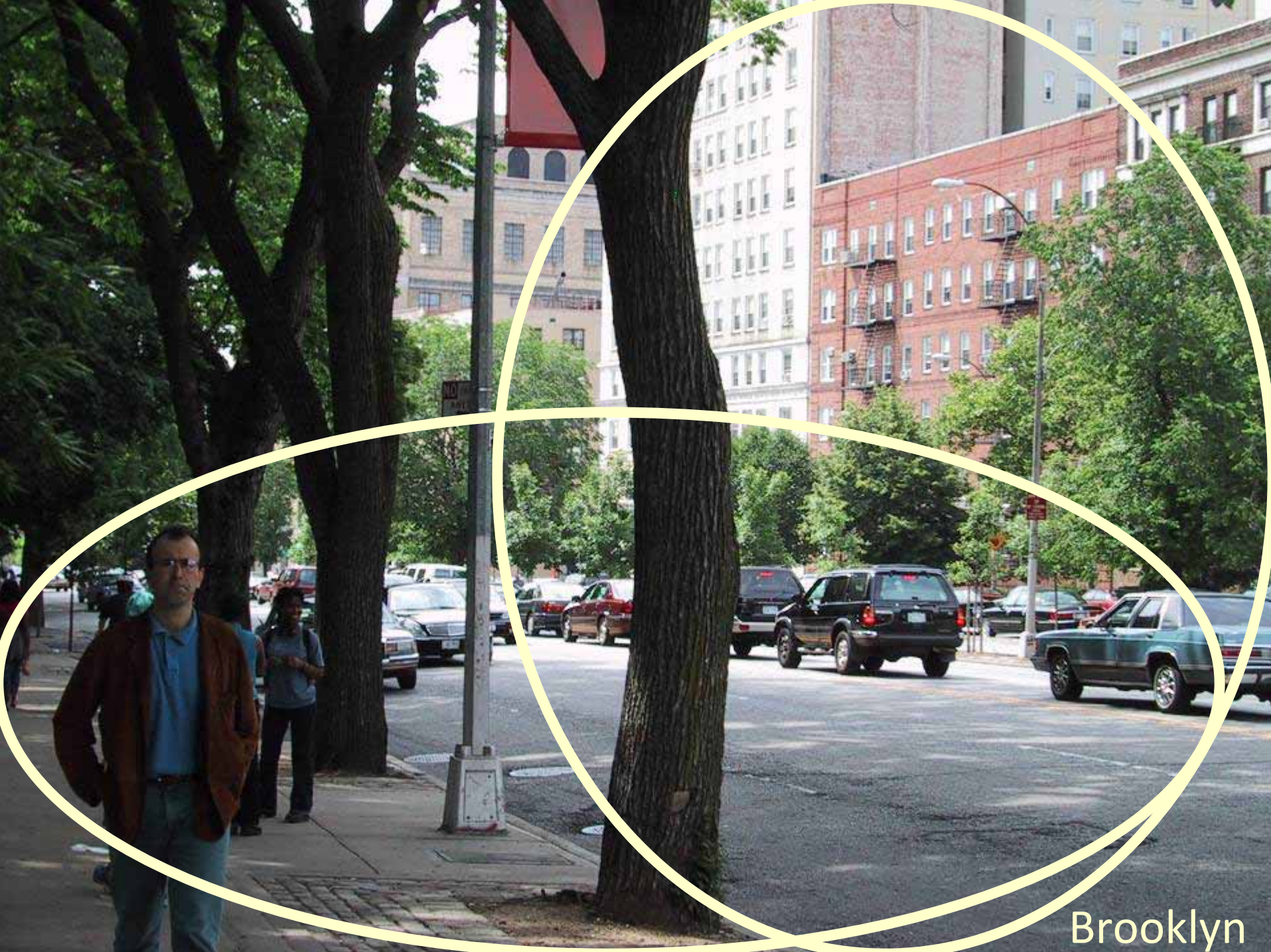




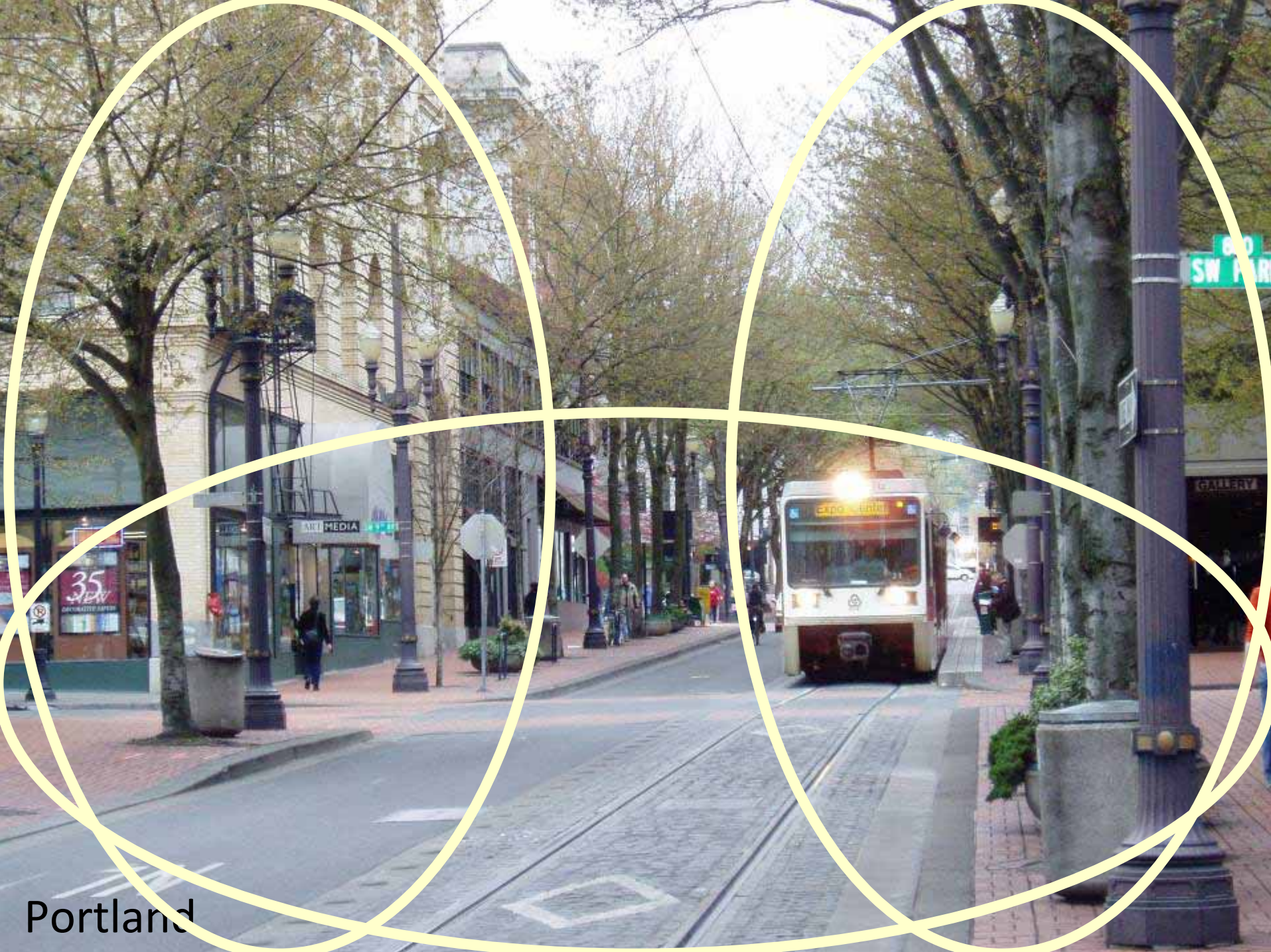
NO PARKING
2:00 AM
TO 5:00 AM

2 HR
PARKING
8:00 AM
TO 6:00 PM
WEEKDAYS

Longmont

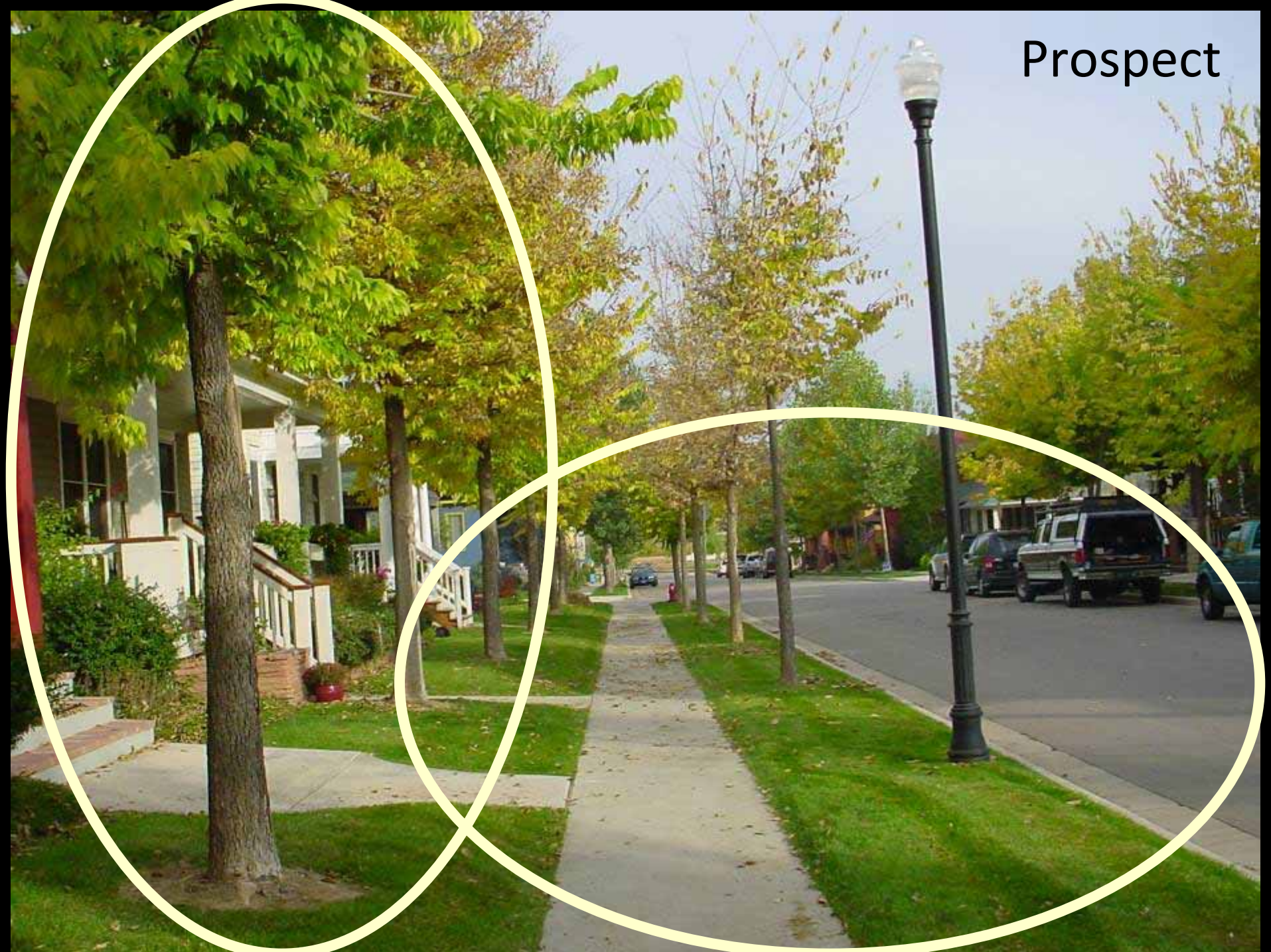


Brooklyn



Portland

Prospect



You can't design a street like this...

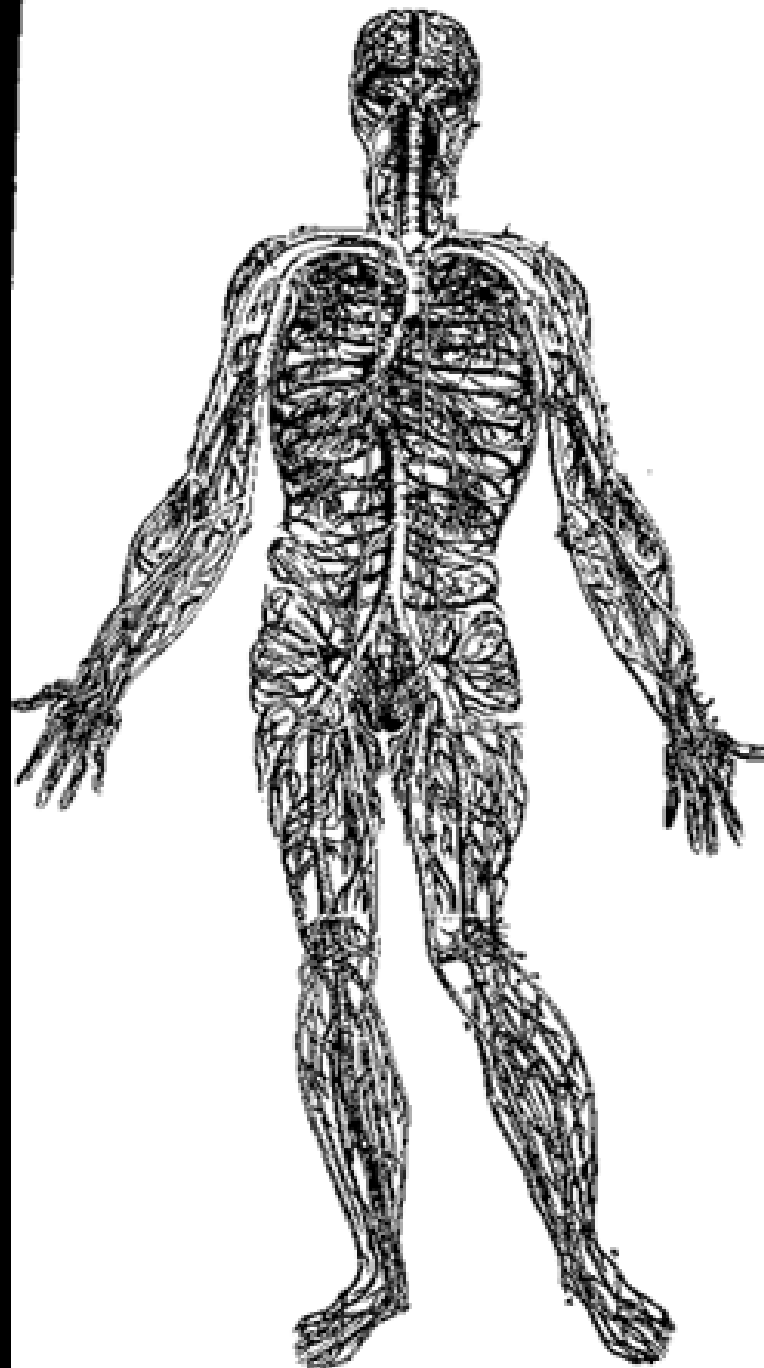


Honolulu

...and expect this to result.



Boulder



2. Street Design Principles



Modern Streets

2. Street Design Principles

- Beyond Corridors to Networks
- Streets and Economics
- Green Streets
- Speed & Safety

Beyond Corridors to Networks

Conventional



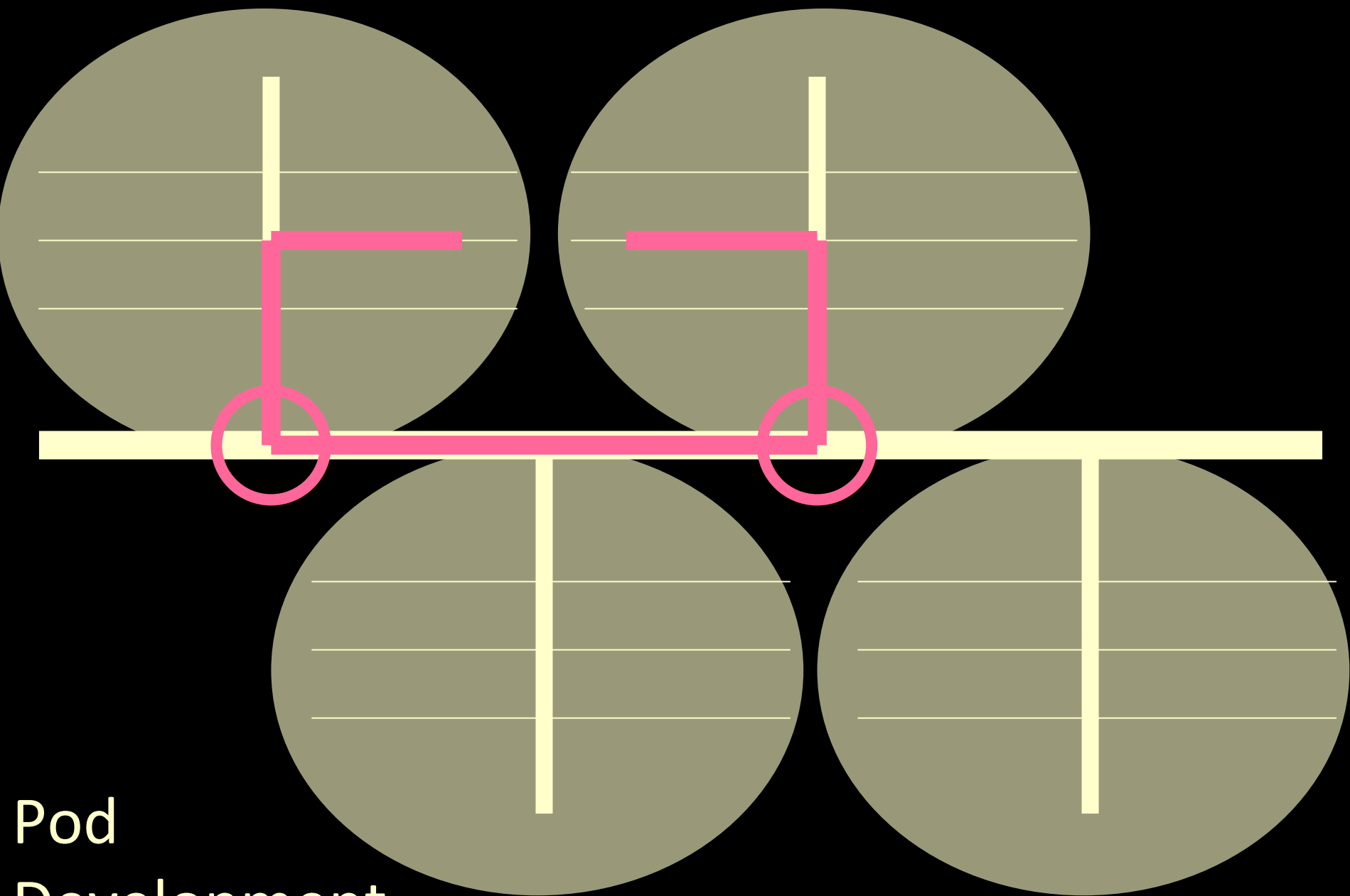
Windsor, CO – Old Town



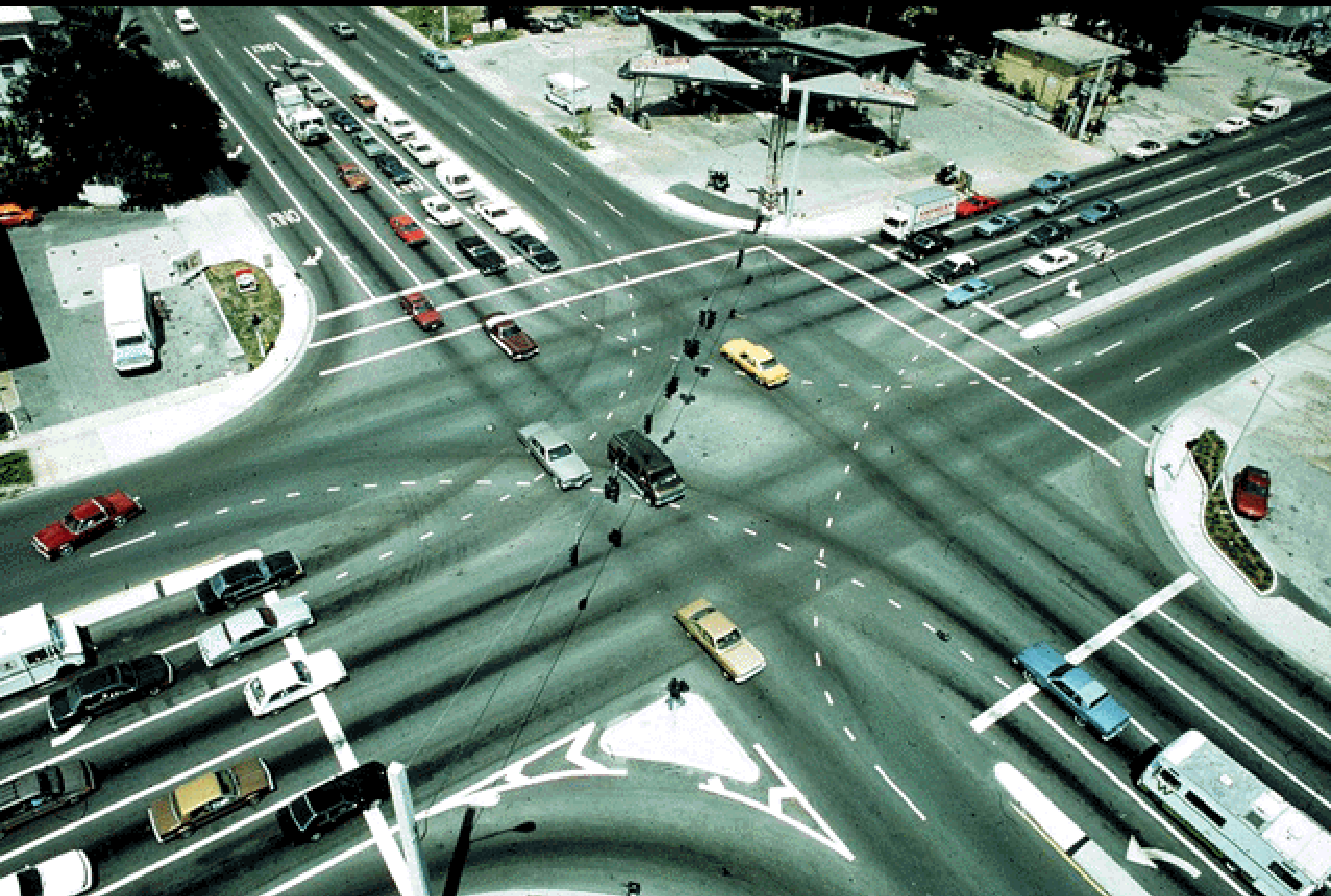








Pod
Development



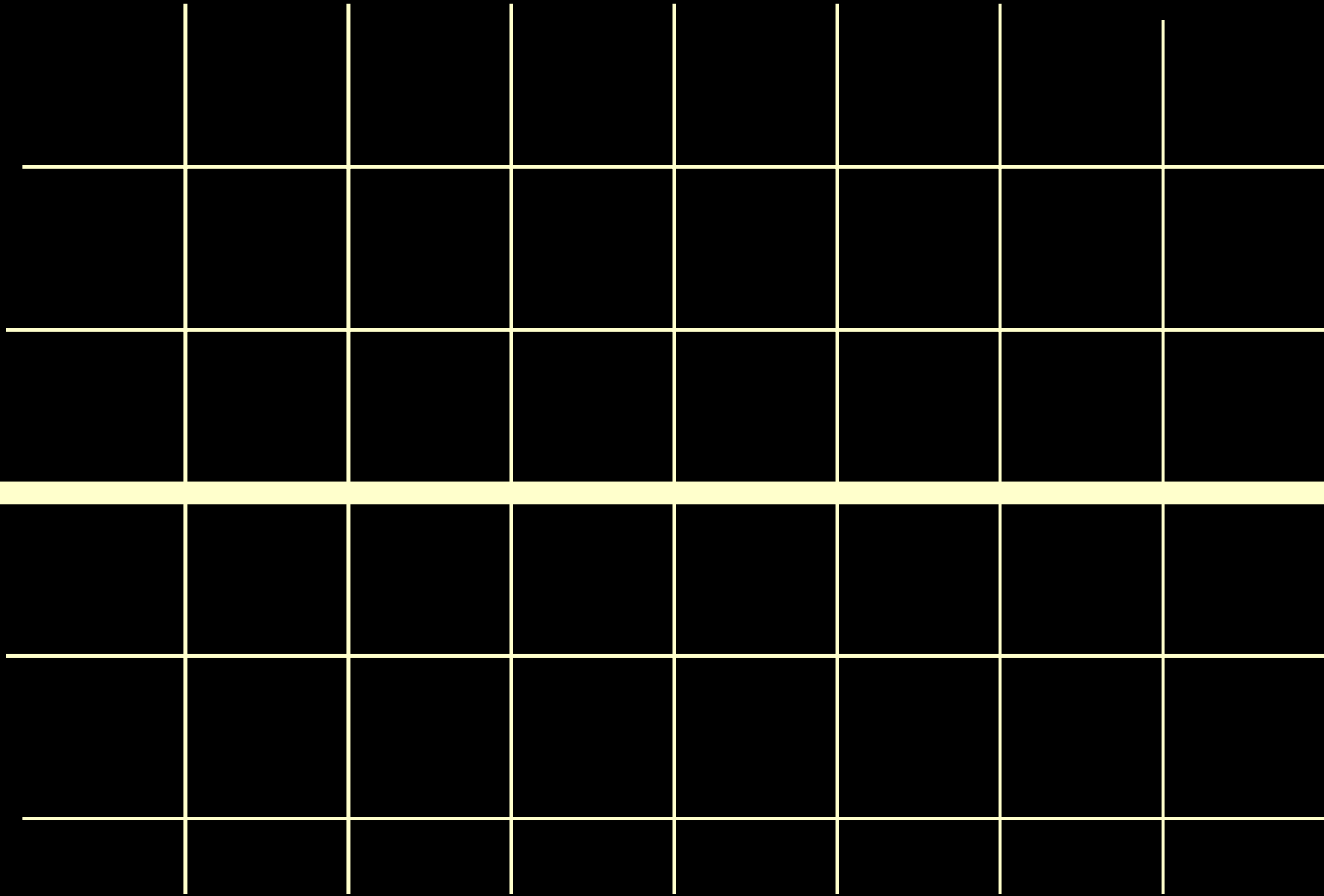
Connectivity Standards

- Intersections/square mile (min 200)
- Maximum block perimeter (1400' – 1800')
- Block length (330' – 528')
- Links/nodes

Good Access Management

- Controls driveways
- Controls intersections

Ideal Block Size for Efficient Flow



330' to 528'

Network Traffic Systems 101

- A dense network of small streets is much safer and provides more capacity than a coarse network of large streets
- Lost capacity/efficiency – 25% to 50%

Streets and Economics

St. Louis Region





Newbury, Boston

Two Kinds of Commercial/Mixed Use Streets – Land Use Economics



Pass-By Traffic Streets



Destination Streets

Pass-By Traffic Streets



- Auto-oriented retail
- Gas, cigarettes, tires, fast food, cleaners, drive-through banks, grocery stores, convenience retail, liquor stores
- Low employment per square foot
- High parking turn over rate
- High traffic counts, but most of the traffic is pass-by, not “generated” by the land uses
- Low land value & tax base

Destination Streets



- Pedestrian-oriented retail
- Apparel stores, book stores, specialty retail
- Destination restaurants and bars
- Higher employment per square foot
- Lower parking turn over rate
- Lower traffic counts, but much of the traffic is actually generated by the land uses
- High land value & tax base

St. Louis Region





Berkeley, CA

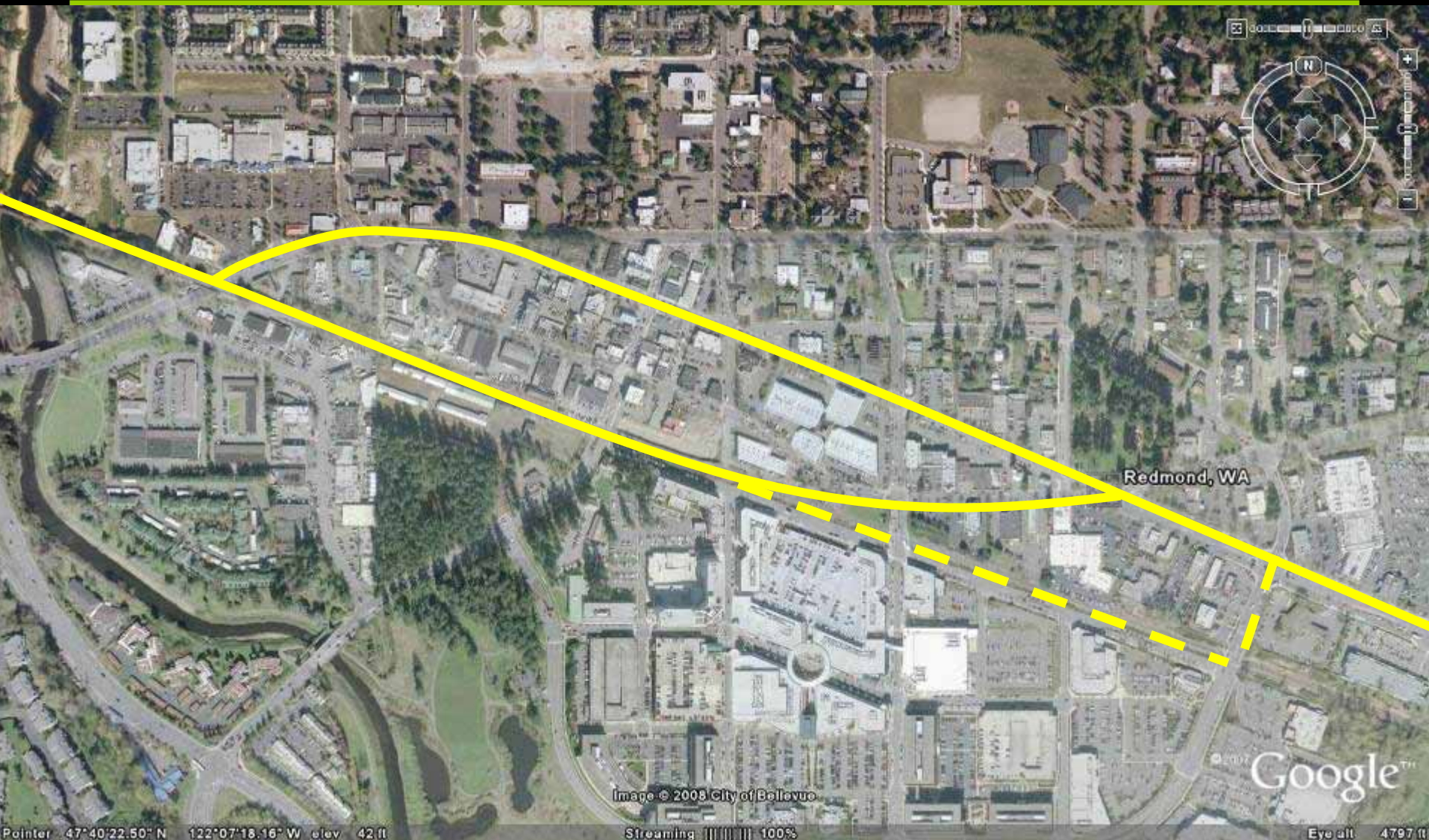
Redmond WA

(pop. 60,000)



OCTOBER 29, 2009

1960s One-Way Pair



Redmon
SHOPPING
SQUARE

FREDERICK
ENTER THE
CONTEST!
425 885 0

B & B
AUTO PARTS

Parker
Paint

MAILBOX & SHIPPING

VISA
MasterCard





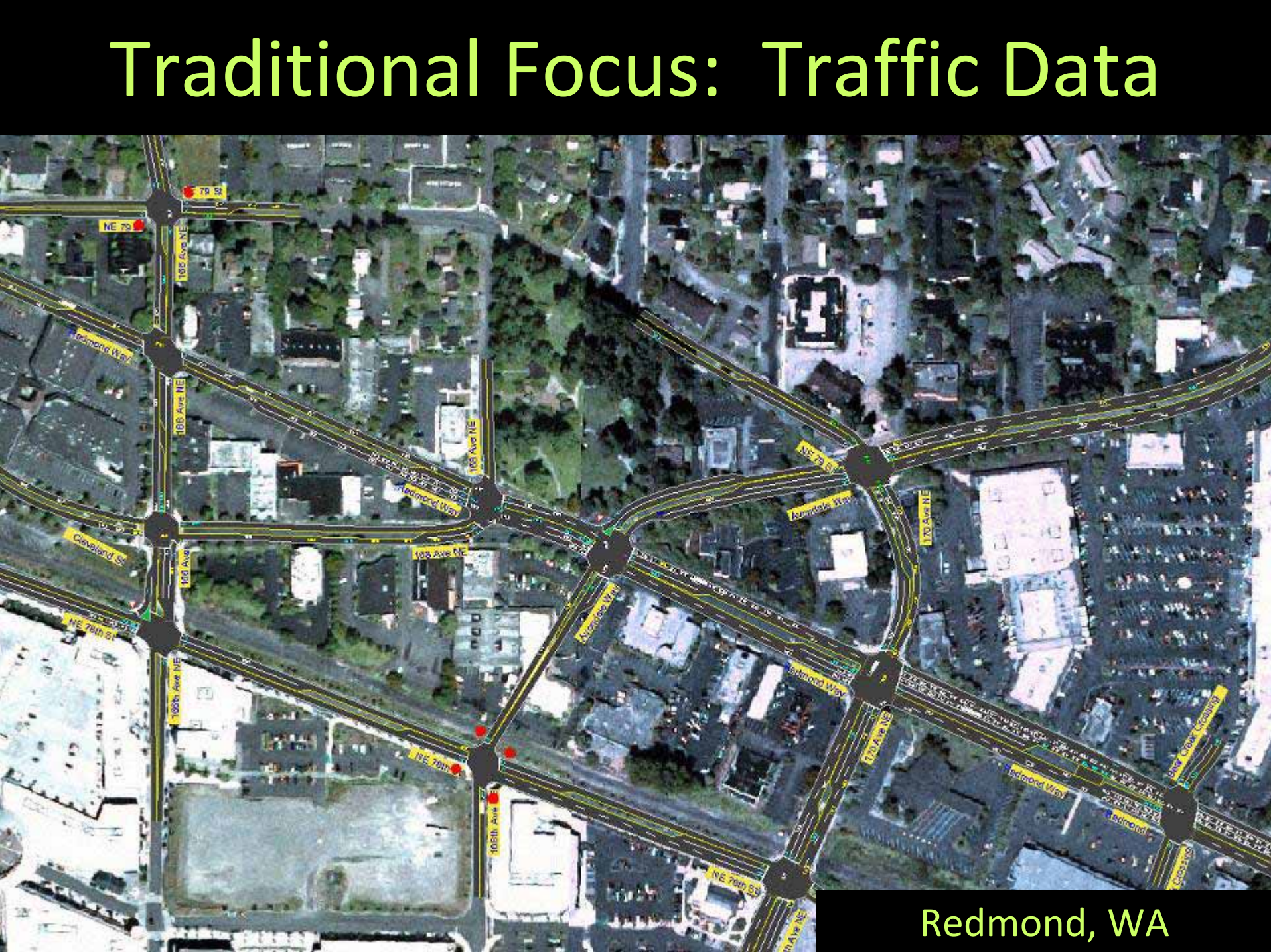


LEARY WAY

7824
MATADOR

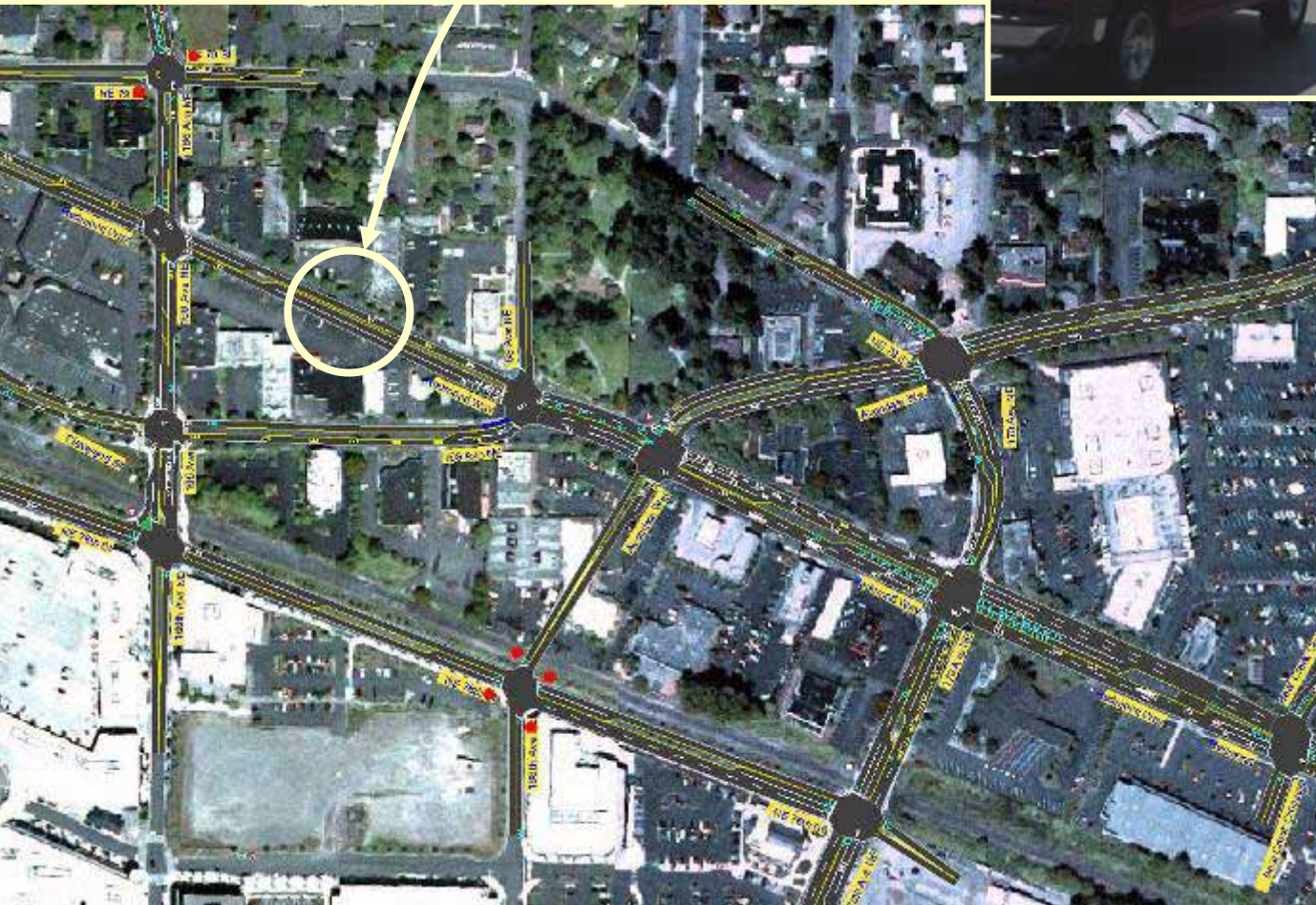
FATHER'S
DAY
SPECIAL
SALE

West
GIFT IDEAS

[illegible]

Redmond, WA

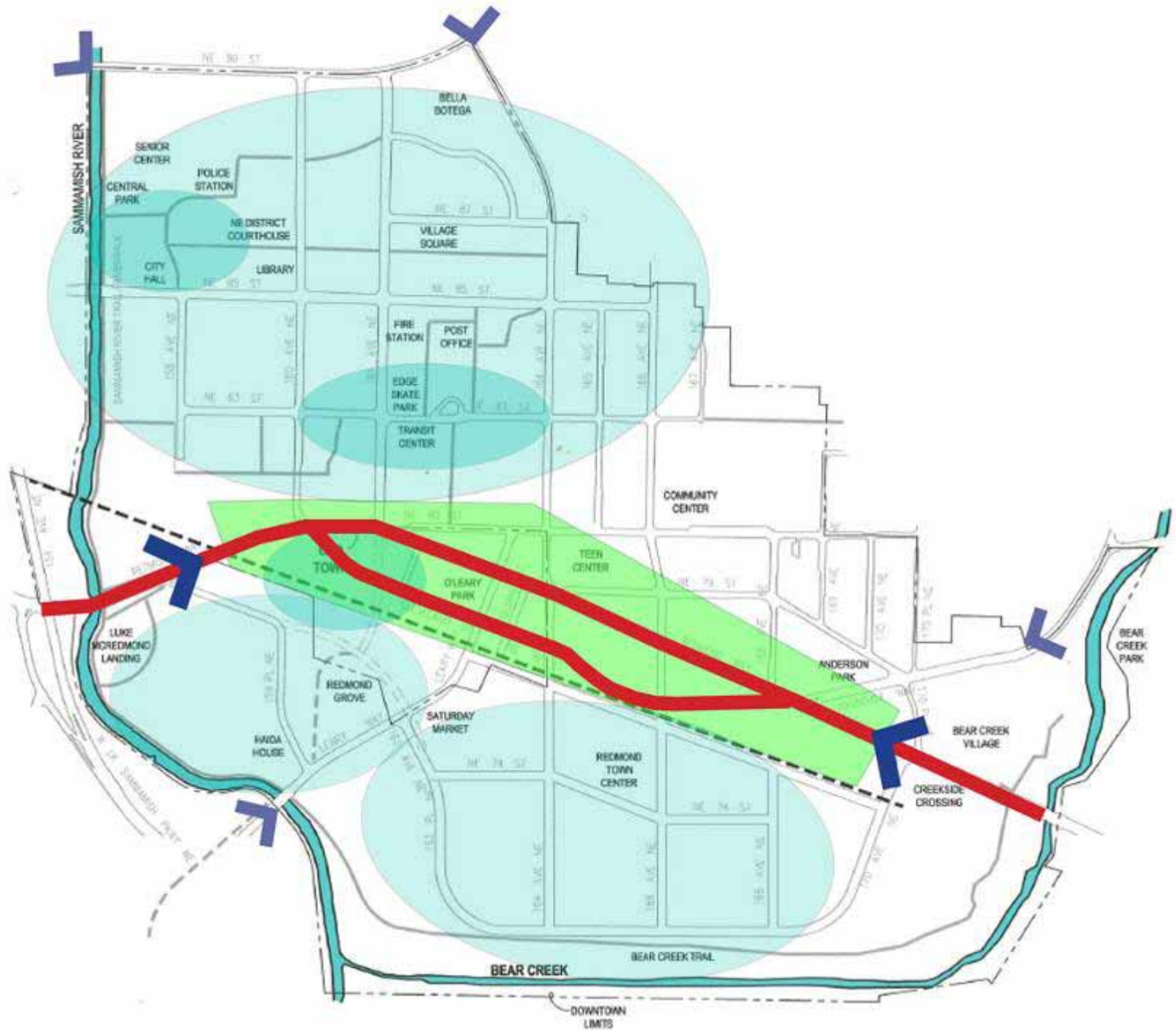
Facility-Centered Approach



Redmond, WA



“This project is
about creating a
vibrant, connected,
pedestrian-friendly,
downtown district.”
(Consensus Goal)



Desirable Project Outcomes

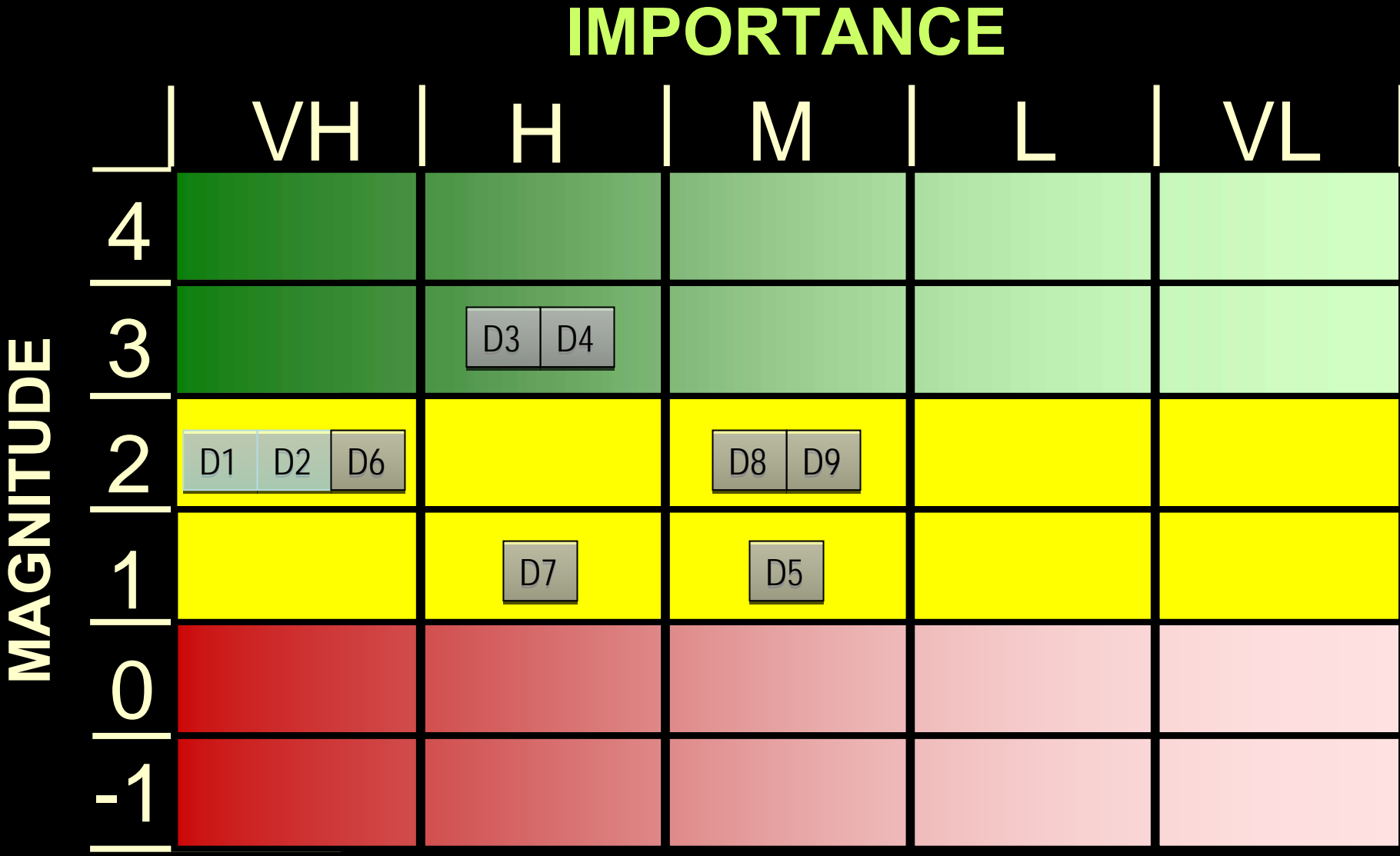
- D1. Pedestrian – Improved pedestrian environment
- D2. Mobility – Clear mobility benefits – balanced across all modes
- D3. Circulation – Improved way-finding, navigation & circulation (all modes)
- D4. Transit – Improved access to transit & transit operations
- D5. Safety – Improved traveler safety (all modes)
- D6. Economics – Improved storefront mixed use & retail environment
- D7. Utilities – Achieve good utility coordination, addressing future need
- D8. Investment – Project induces private investment with good urban design
- D9. Character – Design creates a traditional “main street”

Undesirable Project Outcomes

- U1. LOS – Reduced level of service – any mode
- U2. Redevelopment – Inhibit infill or redevelopment of Downtown
- U3. Cost – Infeasible or unaffordable project cost
- U4. Property – Major negative impacts to property
- U5. Trucks/Buses – Downtown inaccessible for larger motor vehicles
- U6. Surprises – Unanticipated negative consequences

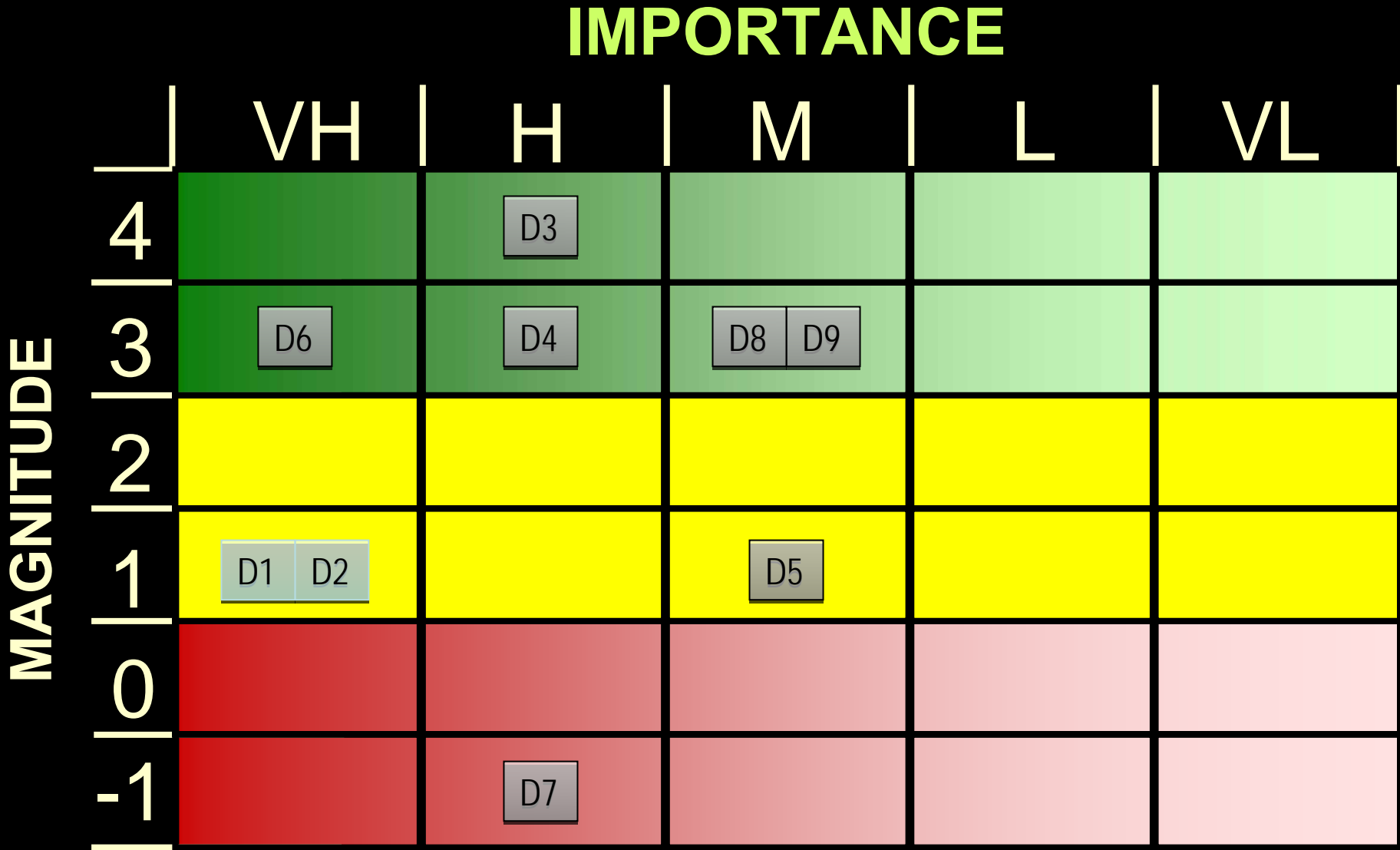
One-Way Alternative

Desirable Project Outcomes



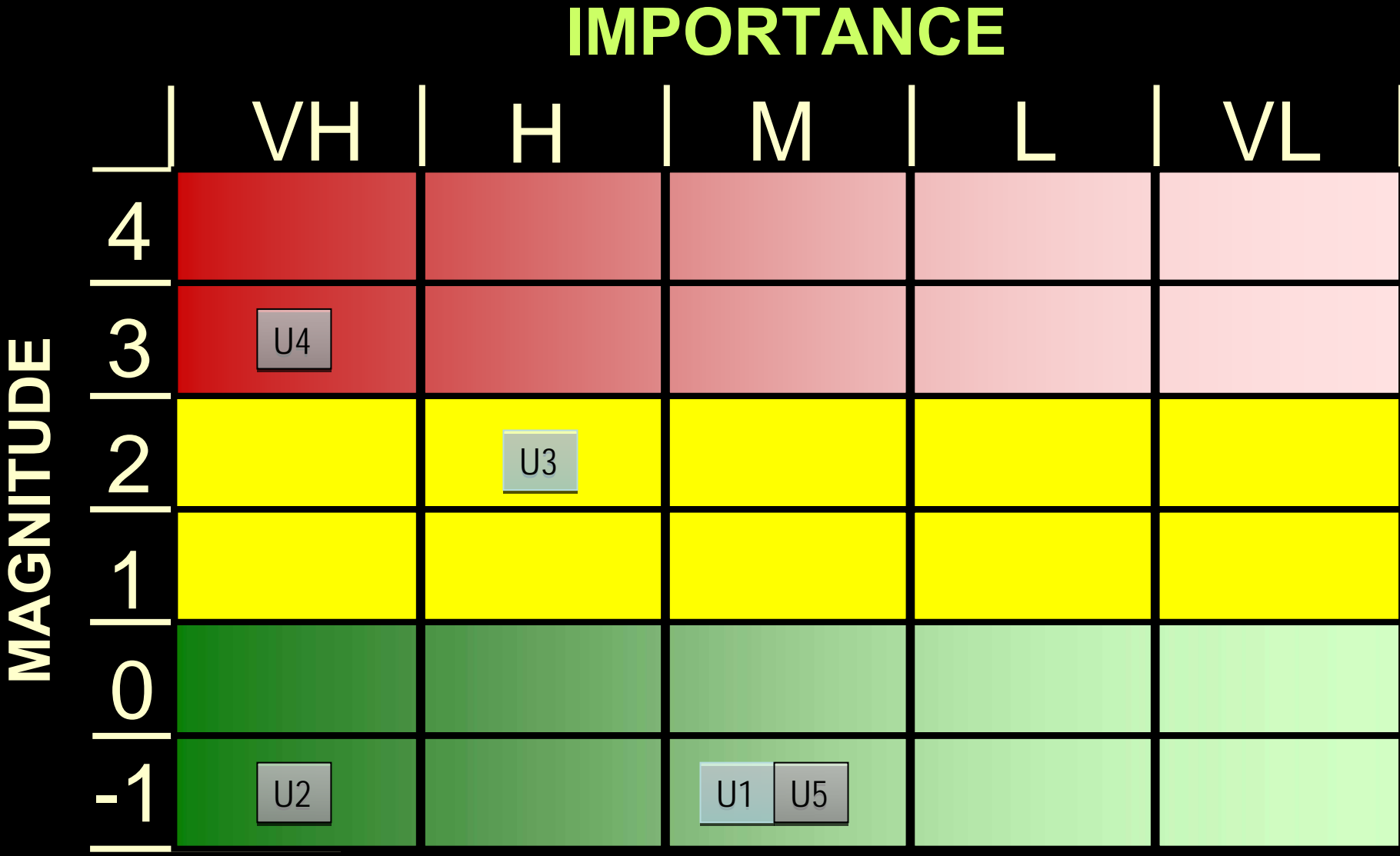
Two-Way Alternative

Desirable Project Outcomes



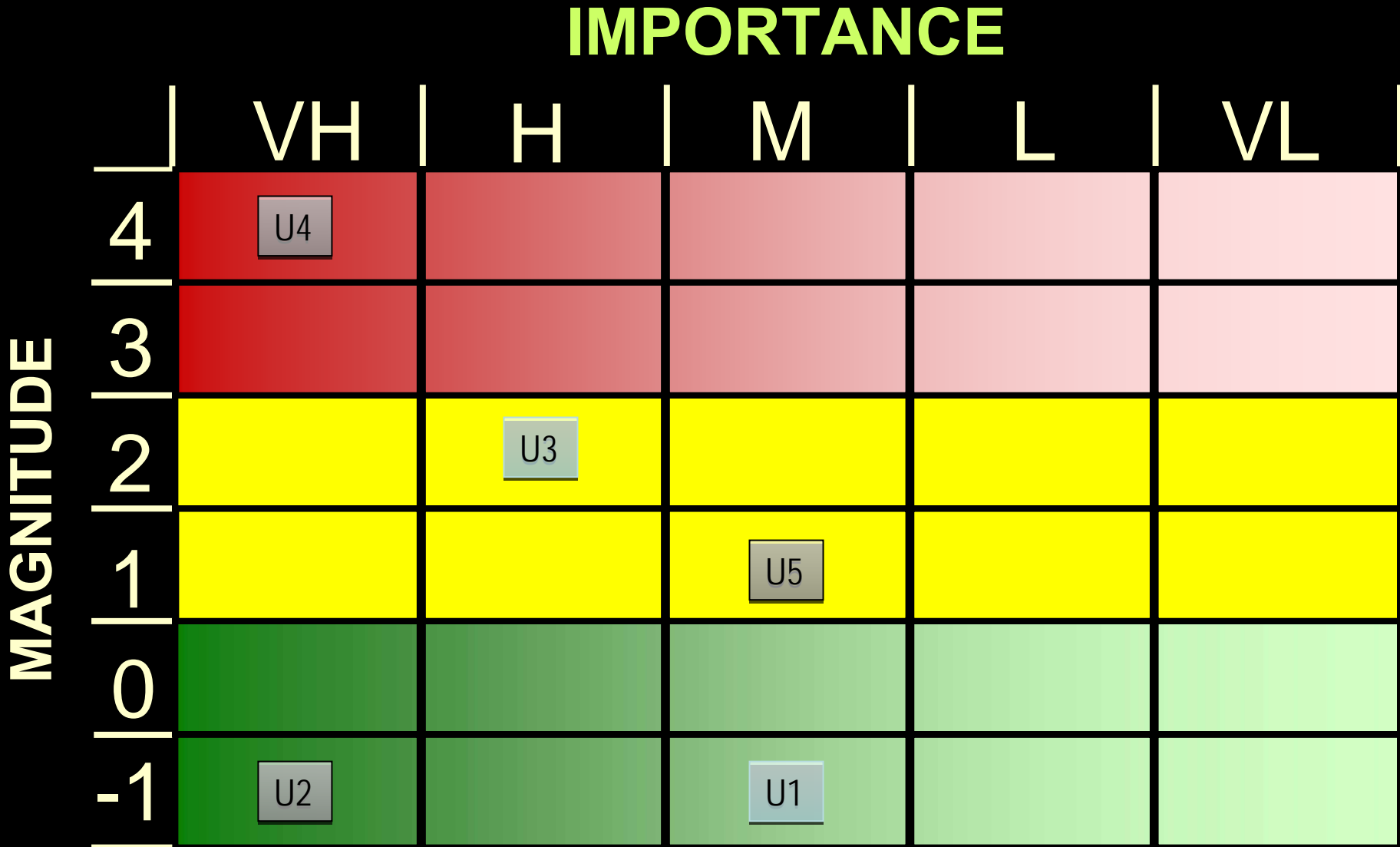
One-Way Alternative

Undesirable Project Outcomes



Two-Way Alternative

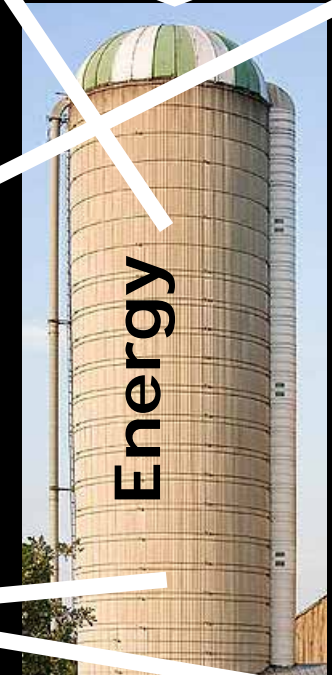
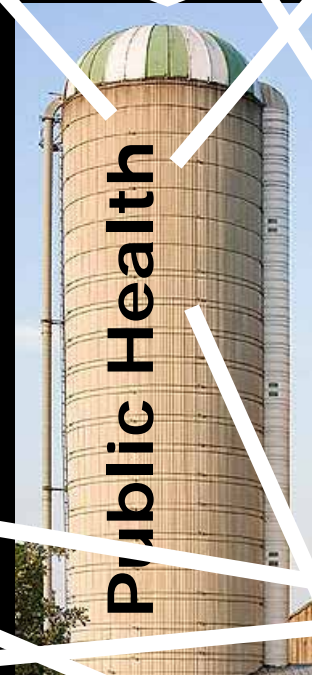
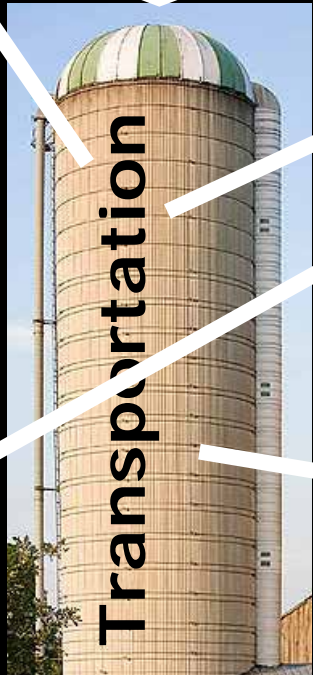
Undesirable Project Outcomes



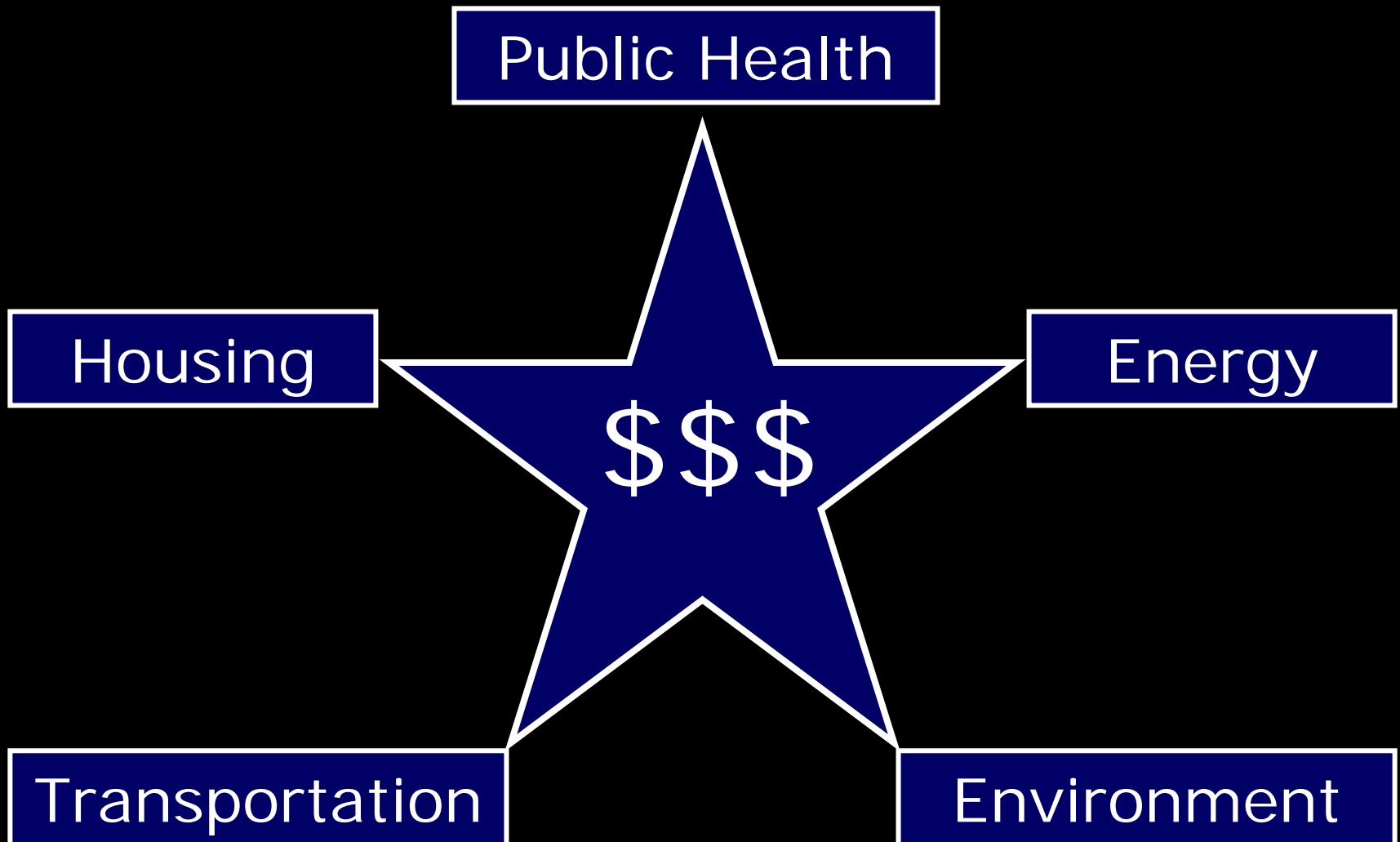
What Redmond Learned

- If “LOS” is your objective, you will:
 - Overbuild your streets
 - Emphasize pass-thru over destinations
 - Accelerate sprawl
- If economic vitality and redevelopment are your objectives, you will:
 - Improve the walk environment
 - Slow the traffic
 - Provide on-street parking
 - Improve local transit service

Single Purpose Spending



Integrated, Strategic Investment



Green Streets



Chico, CA

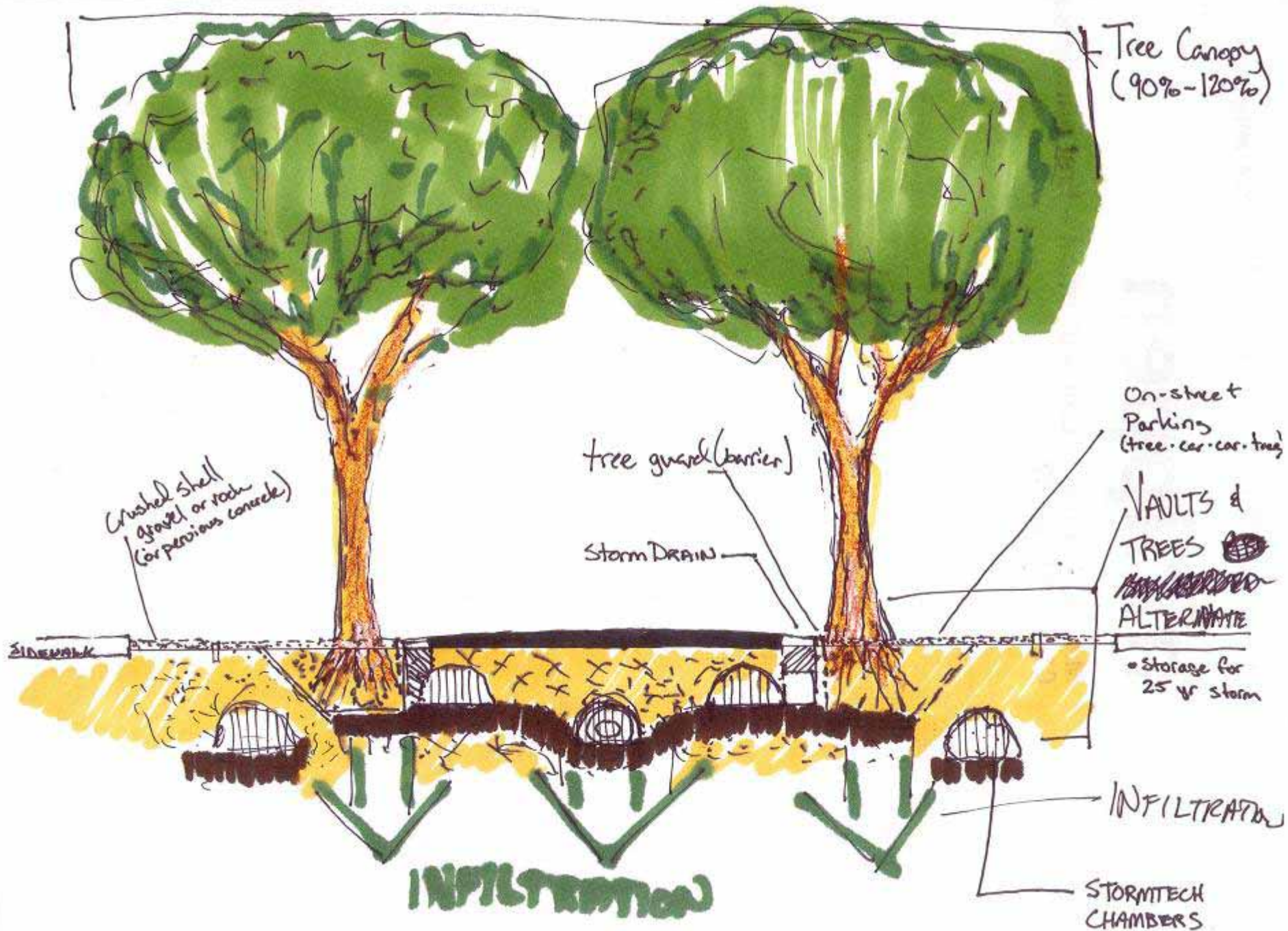


Denver, CO

October 29, 2009

70







Portland, OR

Portland Definition – “Green Street”

A green street is a street designed with landscape areas that capture, cleanse, and infiltrate stormwater runoff.



Neighborhood Scale



Credit: Dover Kohl Partners

Neighborhood Scale



Credit: Dover Kohl Partners

NE Siskiyou Green Street



10,000 Square Feet of Drainage

(Project by the City of Portland, designed by Kevin Perry)

NE Siskiyou Green Street



(Project by the City of Portland, designed by Kevin Perry)

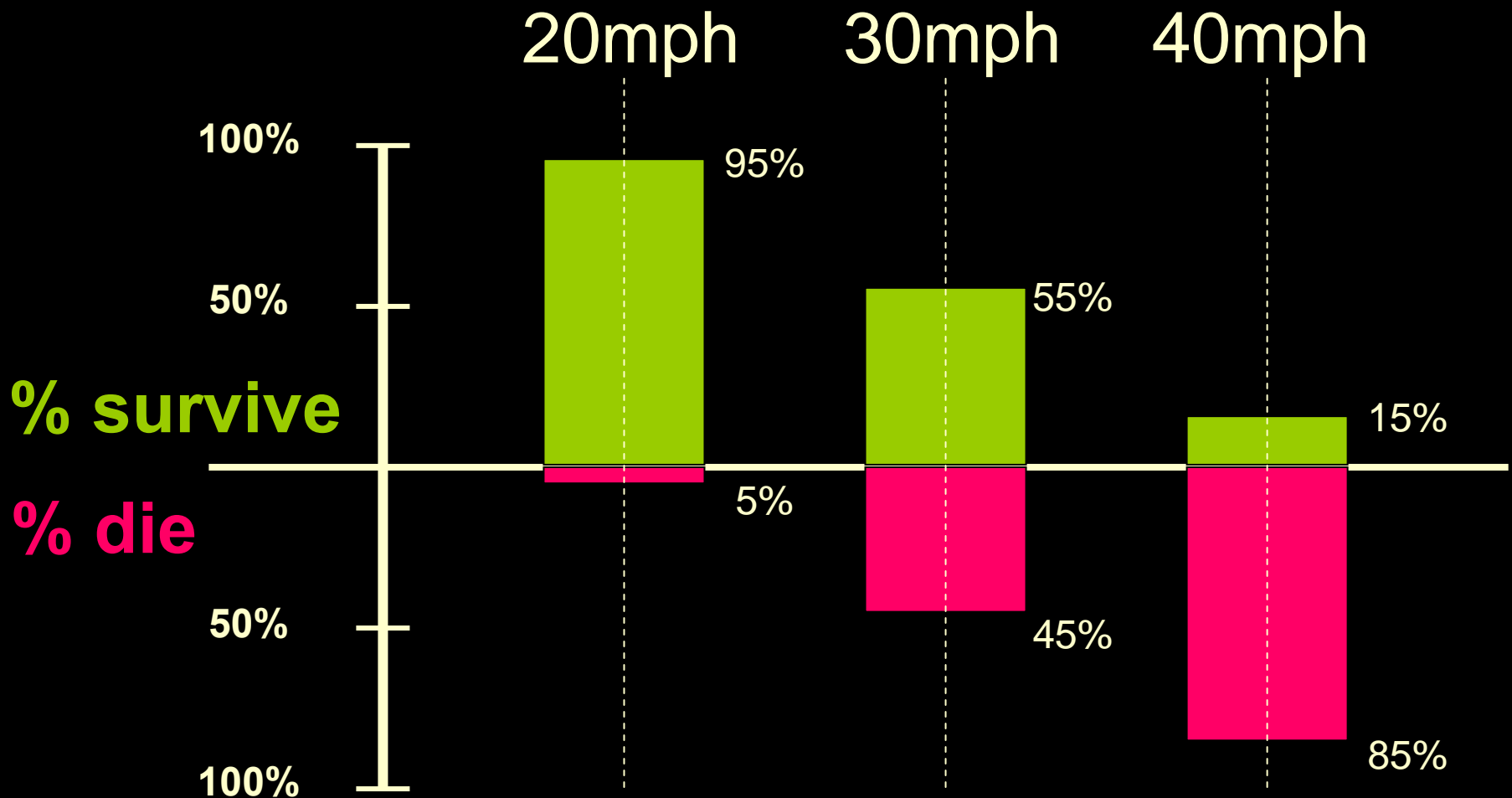
SW 12th Avenue Green Street



(Project by the City of Portland, designed by Kevin Perry)

Speed and Safety

Pedestrian Survival Rates – ∫ Vehicle Speed





Longmont



Aurora, CO



Honolulu

3. Streets in Context



Modern Streets

3. Streets in Context

- Context Sensitive Solutions - CSS
- Using Place Types

Context Sensitive Solutions - “CSS”

CSS Can Be Applied To:

- A specific project
- A planning process



OCTOBER 25, 2003



33

Core Principles

- Address stakeholder/community objectives
- Increase traveler safety
- Promote community livability
- Preserve environmental, scenic, aesthetic, historic, and/or natural resources
- Incorporate good urban design
- Provide lasting community value

The Context in CSS

- Aesthetic
- Archeological
- Community
- Cultural
- Environmental
- Historic
- Recreational
- Scenic



The Experts are Local



Using Place Types



[Home](#)

Choose a Place Type

[Home](#)
[Downtown Main Street](#)
[Mixed-Use District](#)
[Small Town Downtown](#)
[Residential Neighborhood](#)
[Office Employment Area](#)
[Civic/Educational Corridor](#)
[Neighborhood Shops](#)
[Commercial/Service Corridor](#)

Resources

[Document Library](#)
[Design Tutorial](#)
[Related Events](#)
[Demonstration Projects](#)
[Why Great Streets?](#)
[Glossary](#)
[Site Map](#)
[Credits](#)

What is the St. Louis Great Streets Initiative?

East-West Gateway launched the St. Louis Great Streets Initiative in early 2006 to expand the way communities think of their streets. Rather than viewing a roadway project as solely a way to move more cars and trucks faster, the goal of the St. Louis Great Streets Initiative is to trigger economic and social benefits by centering communities around interesting, lively and attractive streets that serve all modes of transportation. [Learn More <>](#)



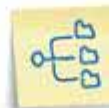
EAST-WEST GATEWAY
Council of Governments

 [What is a Place Type? Click Here to Learn More!](#)

How to Use this Guide -



Design Tutorial -



The Design Tutorial is a Flash based guide to help users understand the many elements of the street and provide direct links to related articles for all eight place types

Why Great Streets?



A SENSIBLE APPROACH TO LAND USE AND MOBILITY IN THE HOUSTON-GALVESTON REGION

3Cs: CENTERS-CONNECTIONS-CONTEXT



Life in Motion

3Cs PROGRAM

CENTERS • *Safe Walkable Places*

Centers are places with concentrations of jobs, shopping, entertainment, public buildings, recreation, housing or all of these together. Well-designed Centers provide safe opportunities to walk, bike, utilize transit and “Park Once.”

CONNECTIONS • *Convenient Choices*

Providing better auto, transit and pedestrian/bicyclist connections between Centers and neighborhoods gives residents, workers and visitors an alternative to congested thoroughfares.

CONTEXT • *Collaborative Solutions*

Early collaboration between stakeholders can produce street designs that meet all user needs and provide lasting community benefits.

KEY STRATEGIES

CENTERS

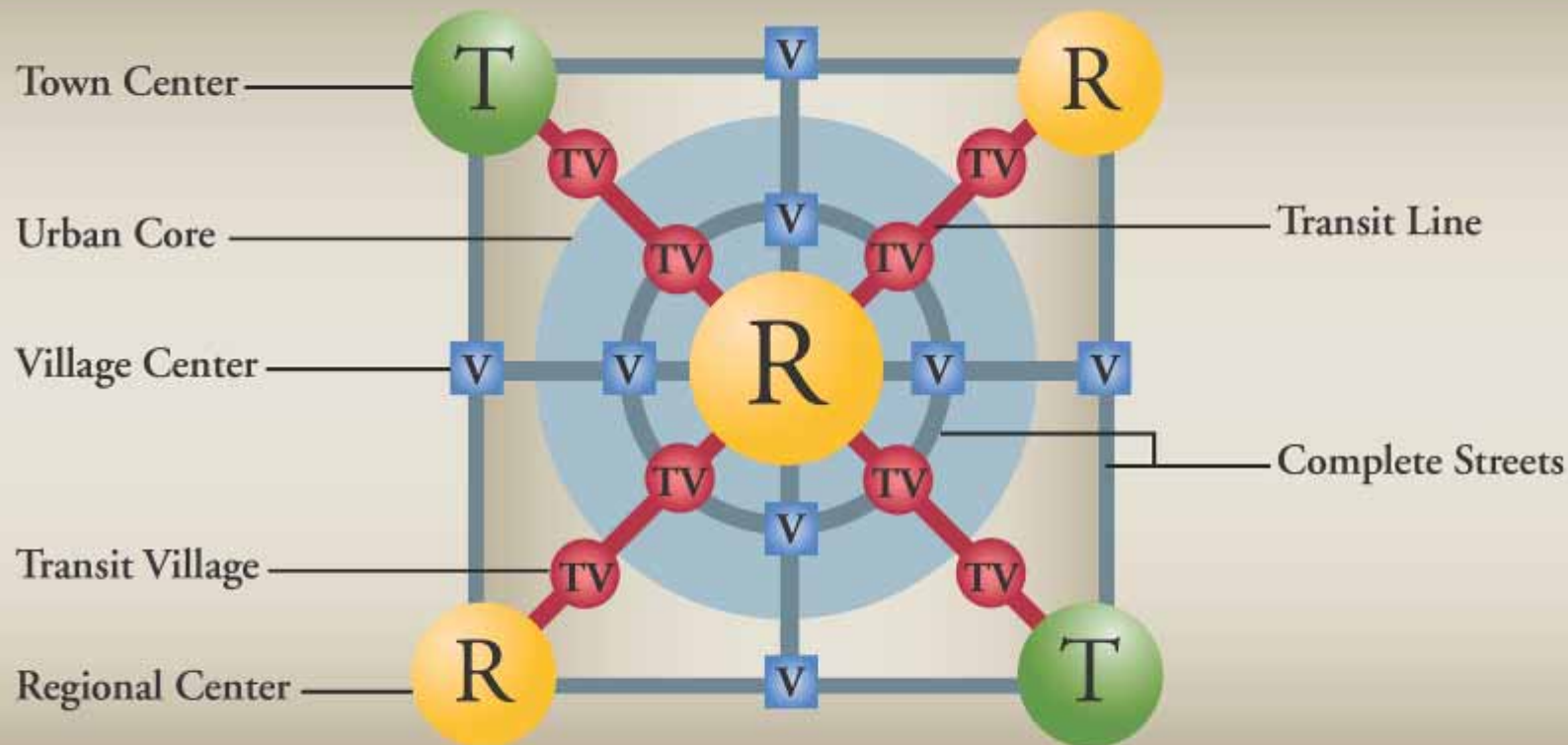
- *Reinvest in existing downtowns and other already walkable centers and neighborhoods.*
 - *Promote development of live, work and play opportunities near transit.*
 - *Encourage Town and Village Center designs in new development.*
 - *Provide a safe, convenient walking environment.*
-

CONNECTIONS

- *Establish excellent transit Connections between Centers.*
 - *Provide safe pedestrian/bicyclist access to Centers.*
 - *Design local streets networks to give people alternatives to congested thoroughfares.*
-

CONTEXT

- *Develop “Complete Streets” that are safe, have transit options, sidewalks, bikeways and landscaping appropriate for the surrounding land uses.*



TYPES OF CENTERS

URBAN CORE

High-density residential areas with mixed land uses and frequent intersections.

REGIONAL CENTER

Areas of concentrated employment or other major trip generators.

TOWN CENTER

Concentration of housing, retail/office and civic destinations within half-mile radius of community gathering place with a good pedestrian network.

TRANSIT VILLAGE

High-density housing, retail and other destinations concentrated within a quarter mile to half mile and with good pedestrian access to a high volume transit facility.

VILLAGE CENTER

Clustered neighborhood retail and services with good connections to surrounding neighborhoods.

VEHICLE TRIP REDUCTIONS

5-20% depending upon the concentration of activities, quality pedestrian environment and level of transit service.

Up to 40% of workday vehicle trips.

Up to 55% in highly concentrated areas with an outstanding pedestrian environment.

5-7% of home-based "live, work, play" pedestrian trips.

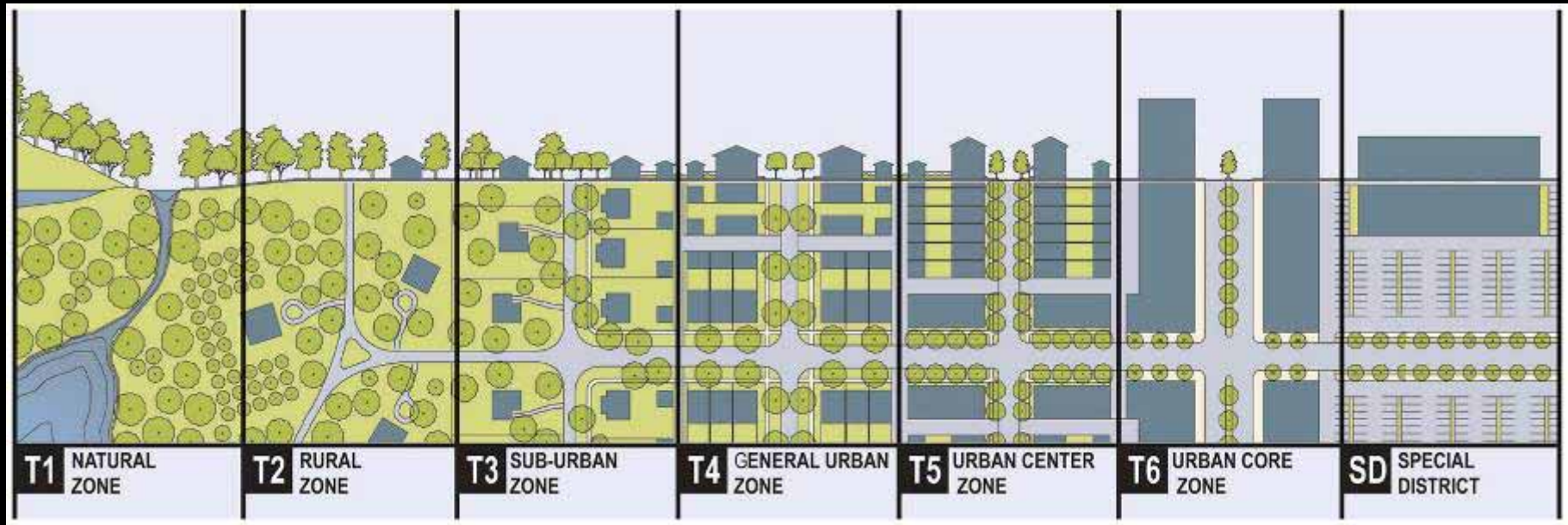
Up to 10% with outstanding pedestrian environment.

Up to 20% with increased transit sharing of home-based work and other trips and increased pedestrian sharing of non-work trips.

Up to 6% of some home-based, non-work, pedestrian/bicyclist trips with reduced traffic on major roads.

Up to 7% with good bicycle access.

Urban “Transect”



RURAL



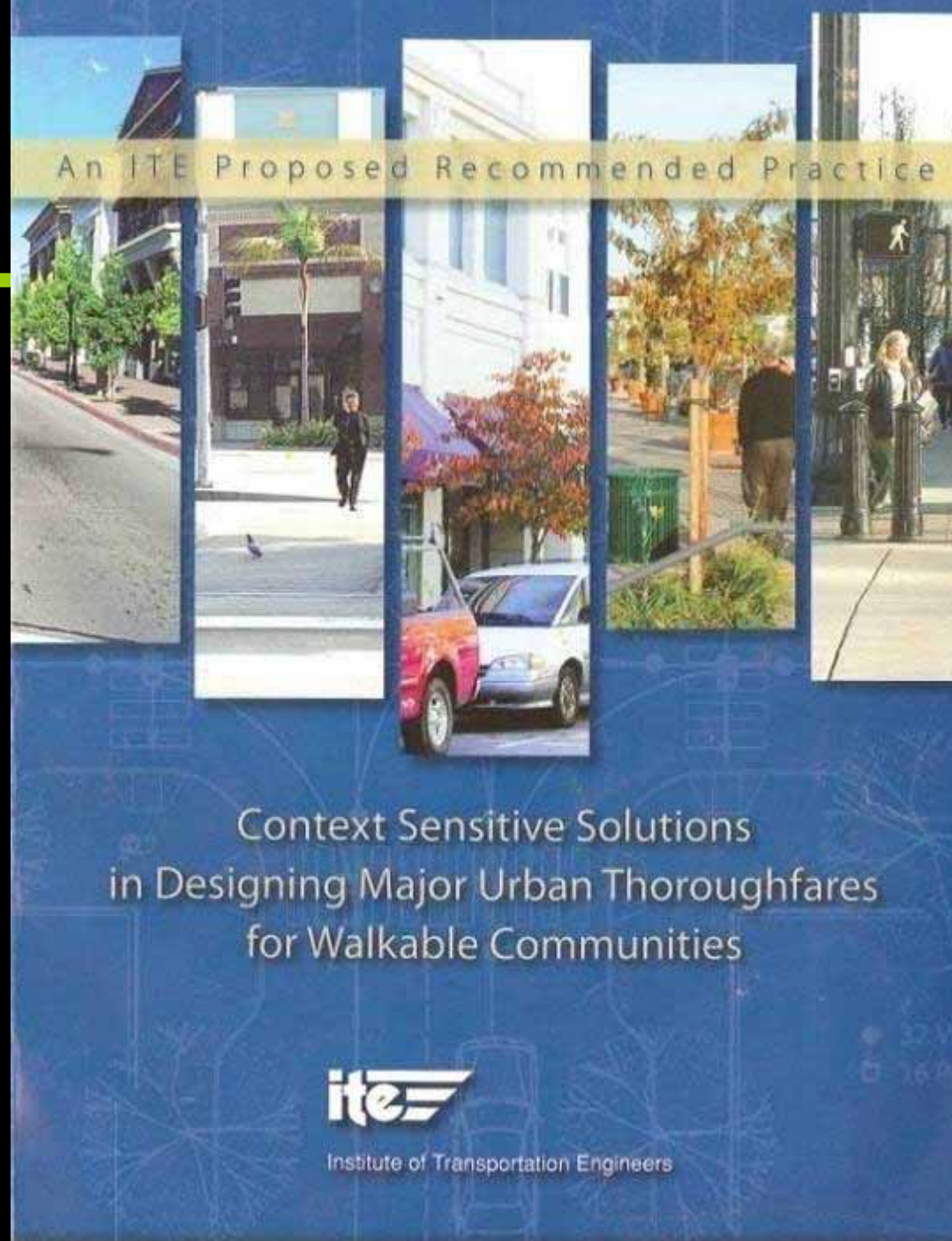
URBAN

Context

Underlying
Principle:

Design should
reflect context of
the service
environment

October 29, 2009





Pedestrian Intolerant



Pedestrian Tolerant



Pedestrian Supportive



Pedestrian Place

② Pedestrian Realm

Physical Characteristics	Sidewalk Presence	<ul style="list-style-type: none"> Local streets have no sidewalks. Arterial streets have sidewalks on only one side of street. 	<ul style="list-style-type: none"> Local streets have sidewalks on only one side of street. Arterial streets have sidewalks on both sides. 	<ul style="list-style-type: none"> All streets have sidewalks provided on both sides 	<ul style="list-style-type: none"> All streets have sidewalks provided on both sides with supplemental traffic-calming measures
	Sidewalk Location and Width	<ul style="list-style-type: none"> Sidewalks lacking, or provided immediately back of curb. Walkway width < 5' 	<ul style="list-style-type: none"> Sidewalks provided immediately back of curb. Walkway width 5' min. 	<ul style="list-style-type: none"> Walkway separated from vehicular traffic by a 5' sidewalk planting strip. Sidewalk 6'-8' wide to accommodate passing and pairs of pedestrians walking side by side. Next to transit stops, sidewalks are 10' wide and extend to street at boarding spot. 	<ul style="list-style-type: none"> The pedestrian realm includes a sidewalk planting strip/pedestrian furnishings zone next to street, a walk/talk zone, and a shy zone next to buildings. Through walkway space 8'-10' wide; overall sidewalk width 10'-30' to provide space for pedestrian amenities.
	Sidewalk Planting Strip	None.	None.	<ul style="list-style-type: none"> 5' minimum, ideally with overstory street trees 20'-30' on center, with clear sight distance triangles at intersections and crossings. 	<ul style="list-style-type: none"> 5' – 10' with overstory street trees in parkway planting strips, or none if tree wells and supplemental planters are provided within wide sidewalks, with clear sight distance triangles.
Pedestrian Amenities	Transit Stops	<ul style="list-style-type: none"> No furniture groupings provided. 	<ul style="list-style-type: none"> Benches provided at transit stops. 	<ul style="list-style-type: none"> Shelters, benches and trash receptacles provided at transit stops. 	<ul style="list-style-type: none"> Transit stops and amenities are integral in the design of pedestrian places.
	Pedestrian Furnishings	None.	<ul style="list-style-type: none"> No furnishings along streets not on transit routes. 	<ul style="list-style-type: none"> Pedestrian furniture groupings located intermittently along non-transit streets. Pedestrian wayfinding provided. 	<ul style="list-style-type: none"> Pedestrian furniture groupings, sculpture, drinking fountains, decorative fountains, wayfinding, etc. are located throughout.
	Lighting	None.	<ul style="list-style-type: none"> High angle highway lamps, such as cobra heads. 	Commercial districts have both: <ul style="list-style-type: none"> High angle lamps. Additional low angle street lamps for improved lighting at ground level. 	Pedestrian places have: <ul style="list-style-type: none"> Overall street lighting. Low placement of tungsten lamps. Additional light emitted from stores that line the street.

4. Making Streets Complete



Modern Streets

4. Making Streets “Complete”

- Functionally Complete
- Boulder’s Systems Approach

Functionally Complete



Boulder, CO

Boulder, CO



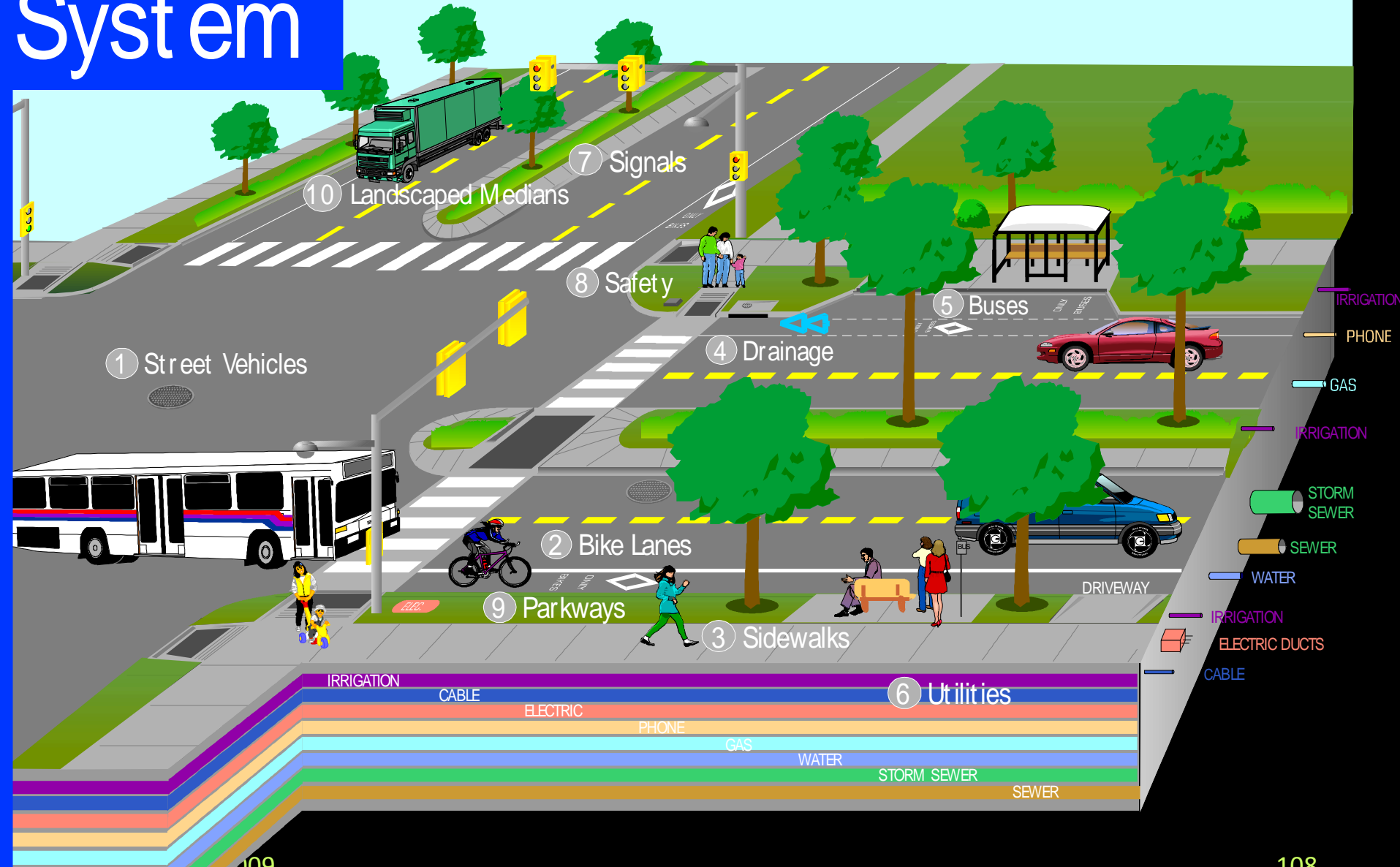
Boulder, CO





Longmont, CO

Street System

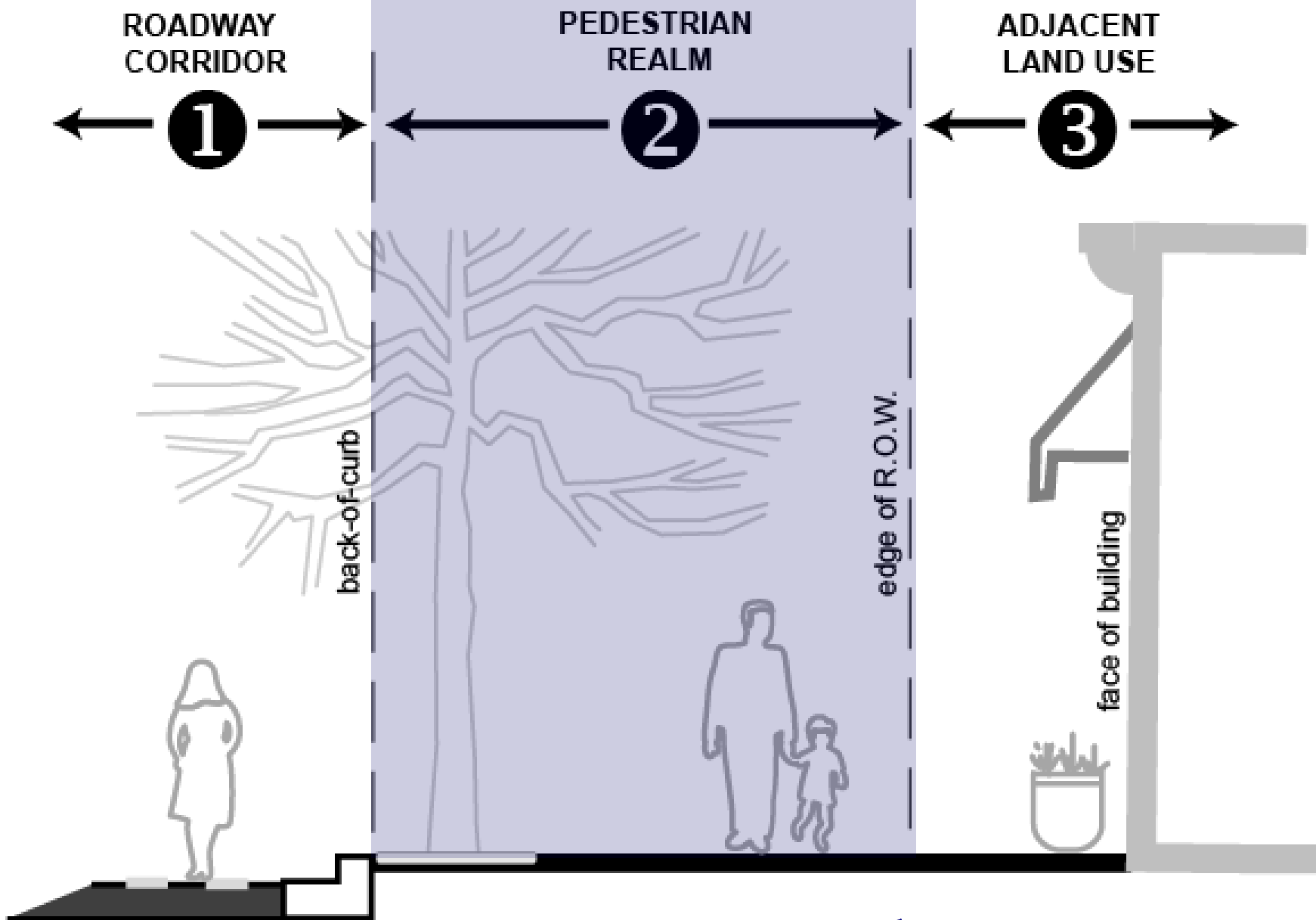


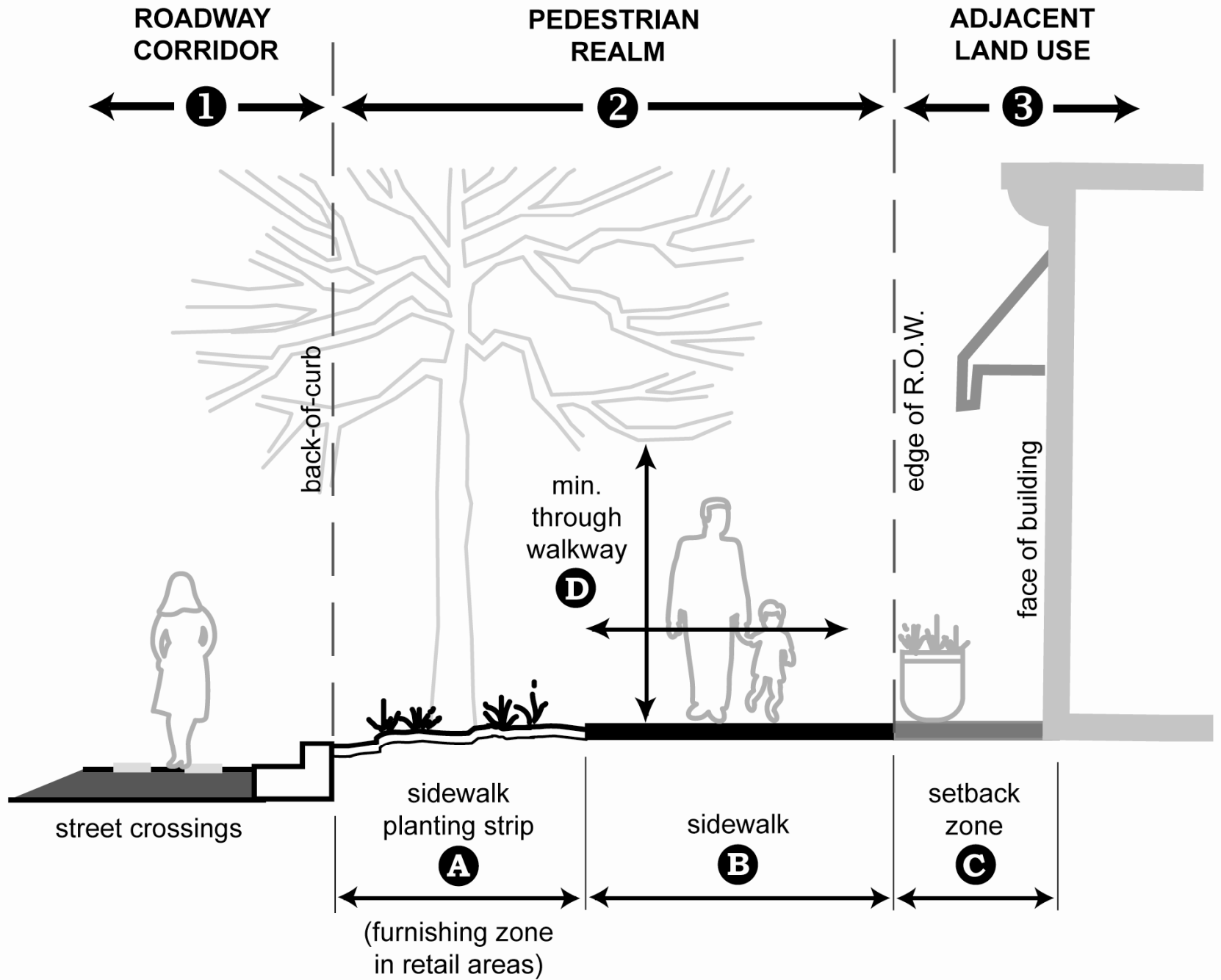
Redmond, WA

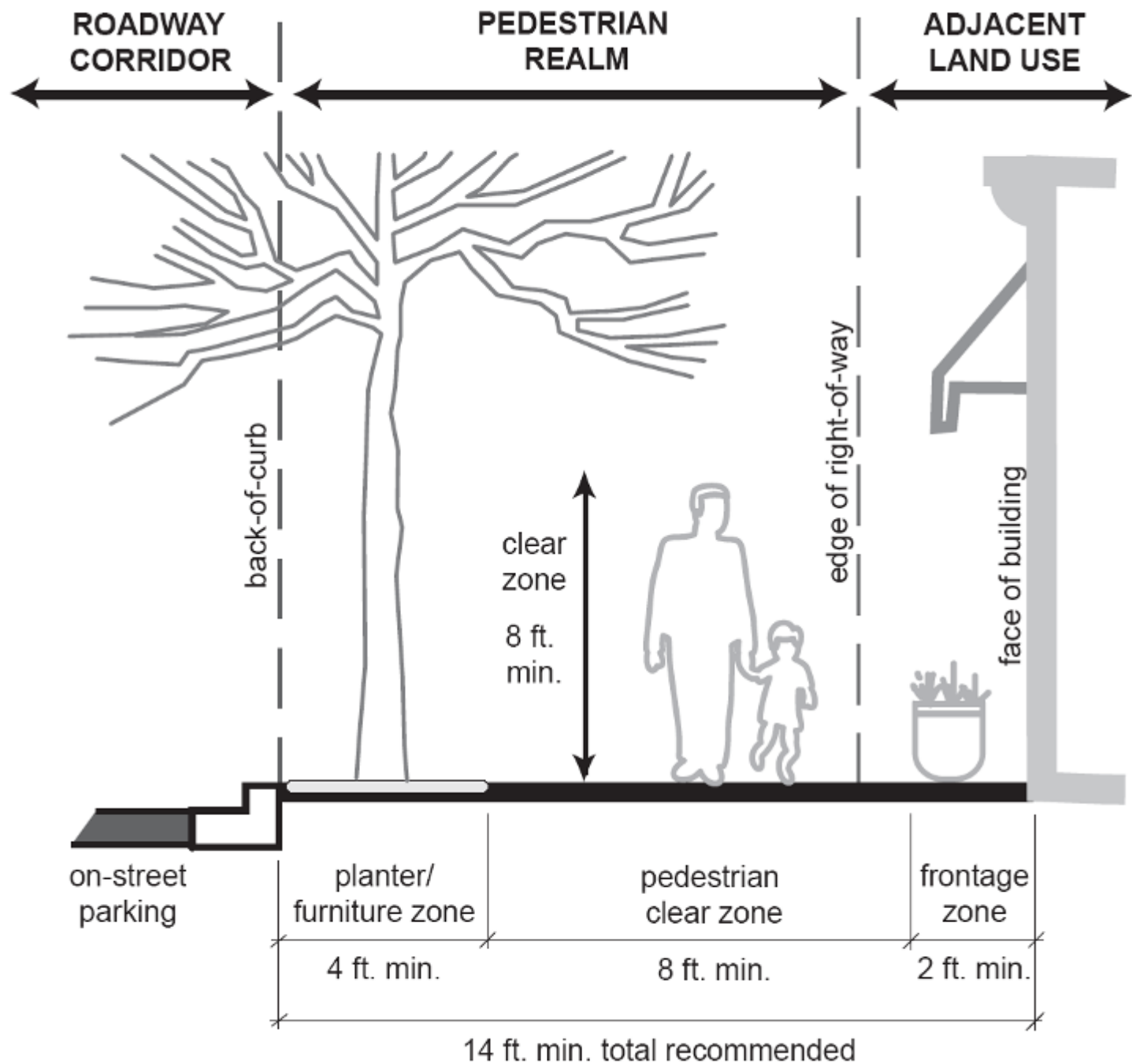


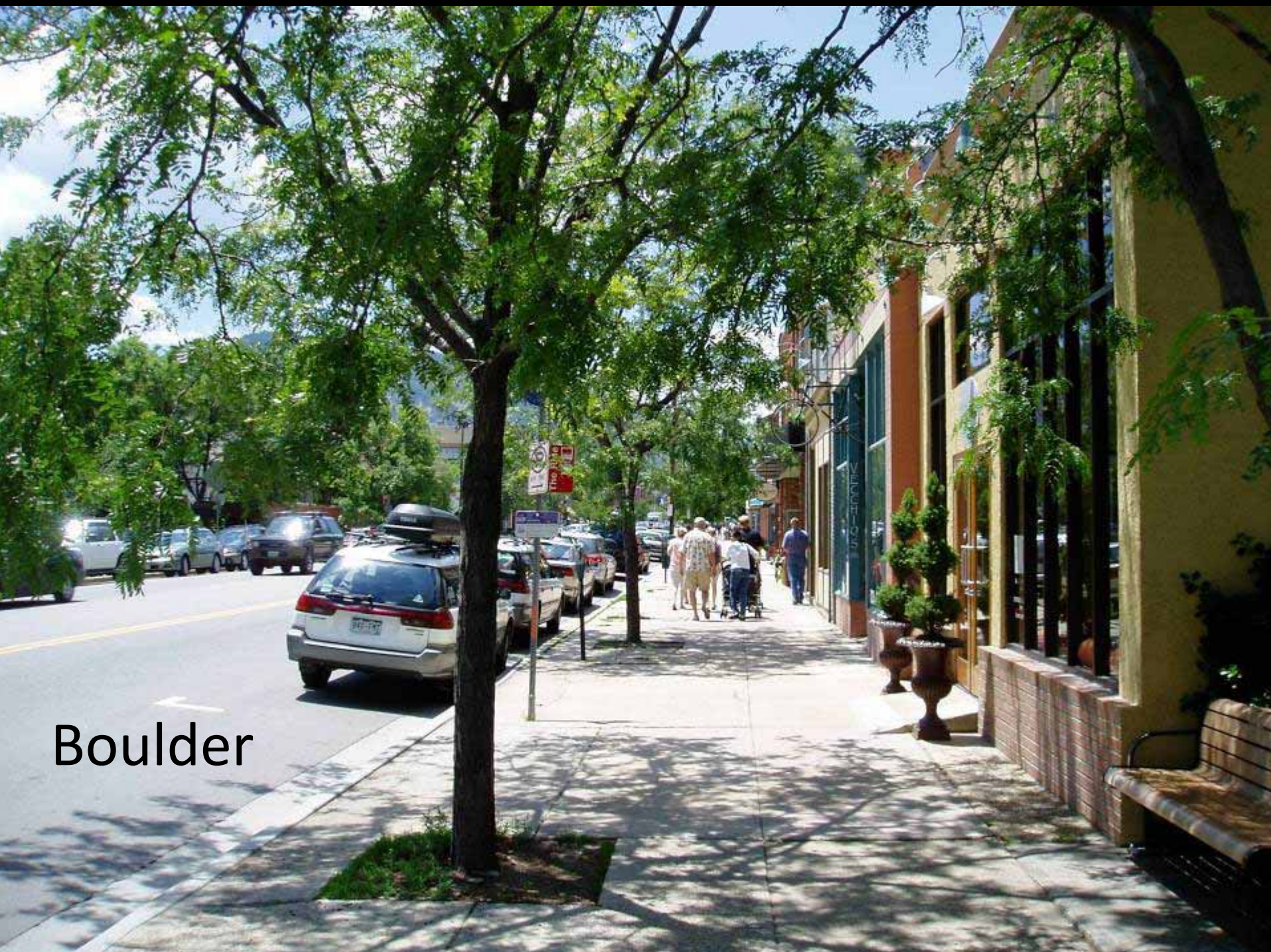


St. Louis region









Boulder

Kailua



Kailua



Boulder, Colorado (pop. 105,000)



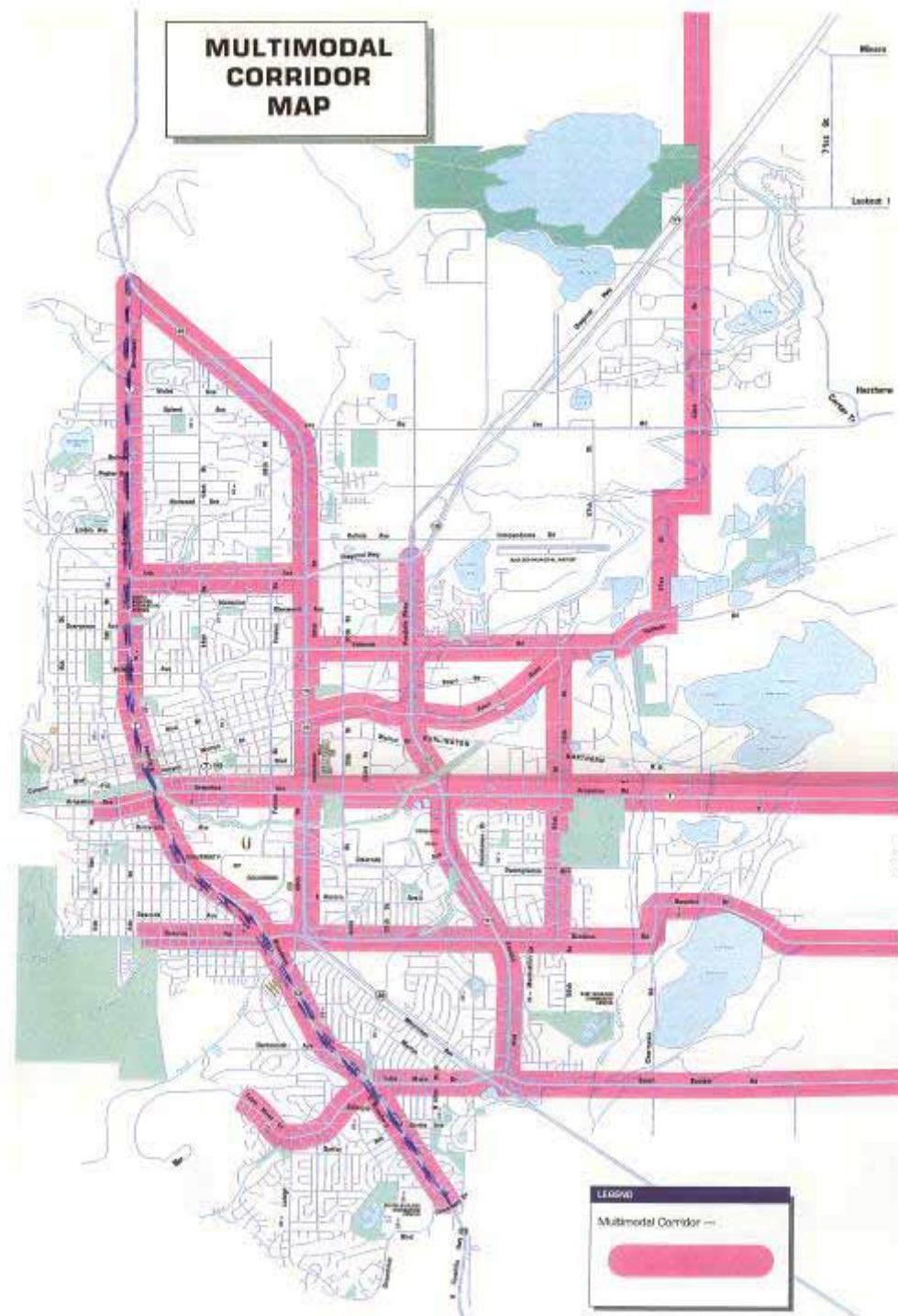
OCTOBER 29, 2009

1996

Transportation Master Plan

- Increase non-auto mode share
- Hold VMT at 1994 level

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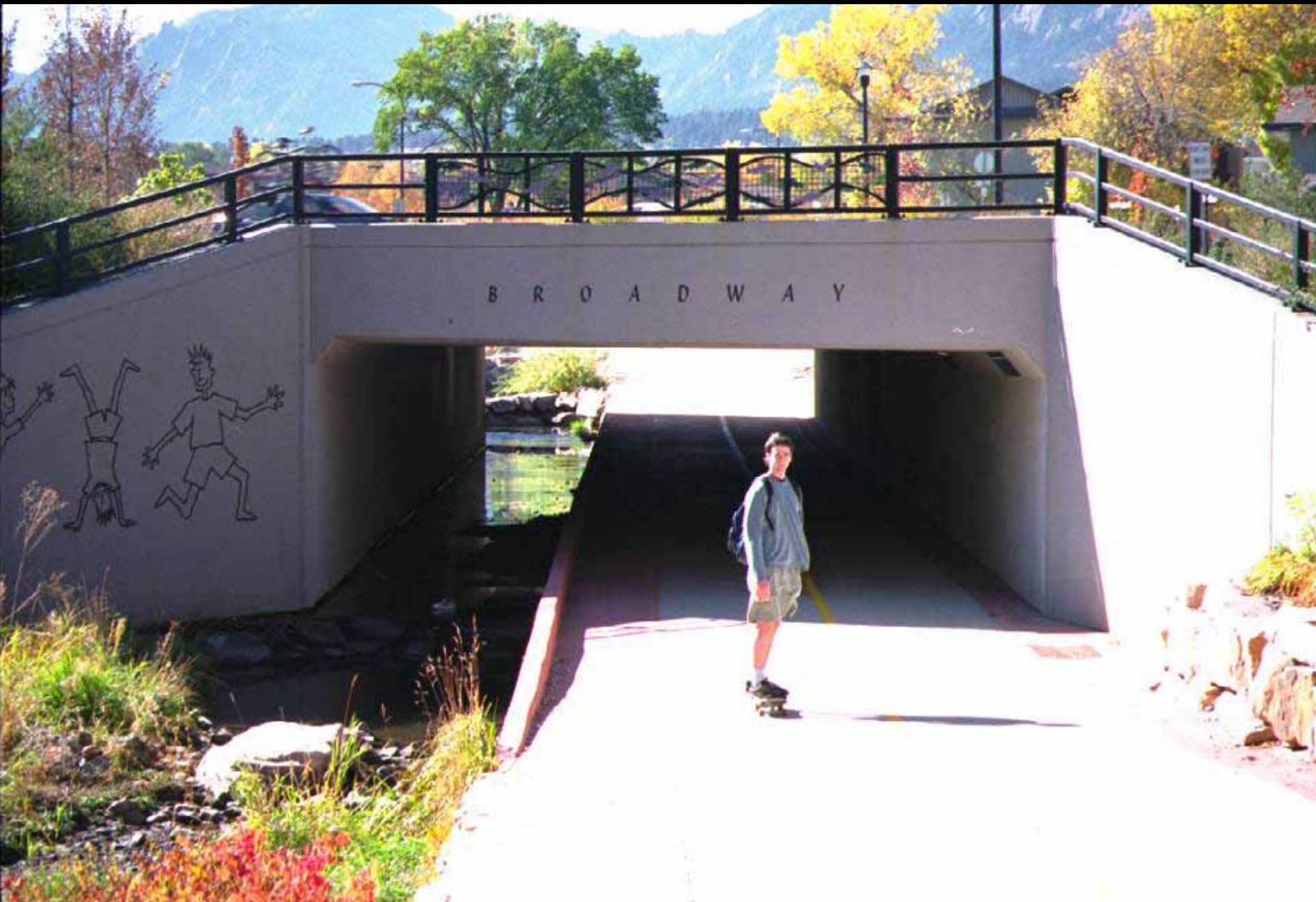




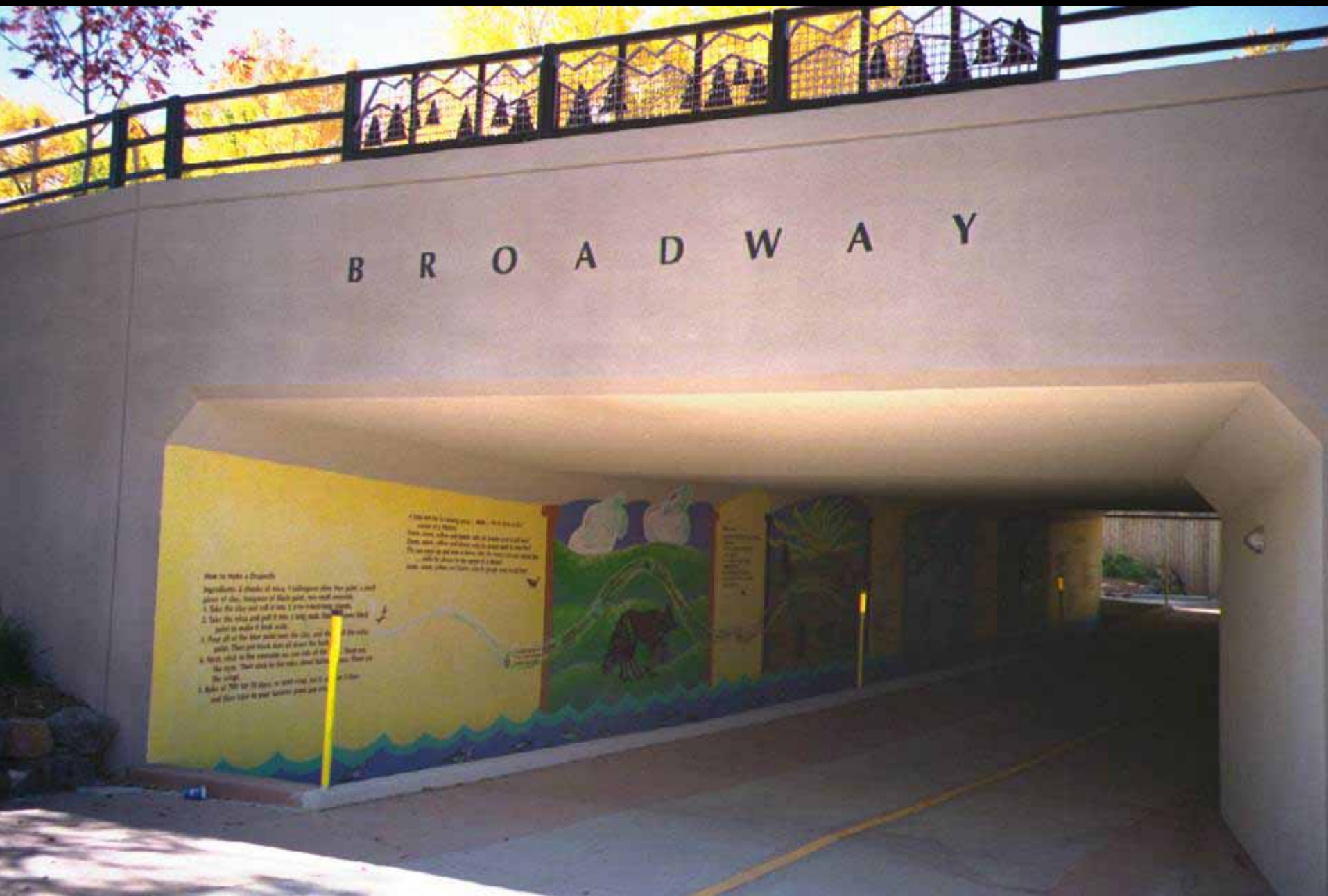


Budget: \$440,000 annually















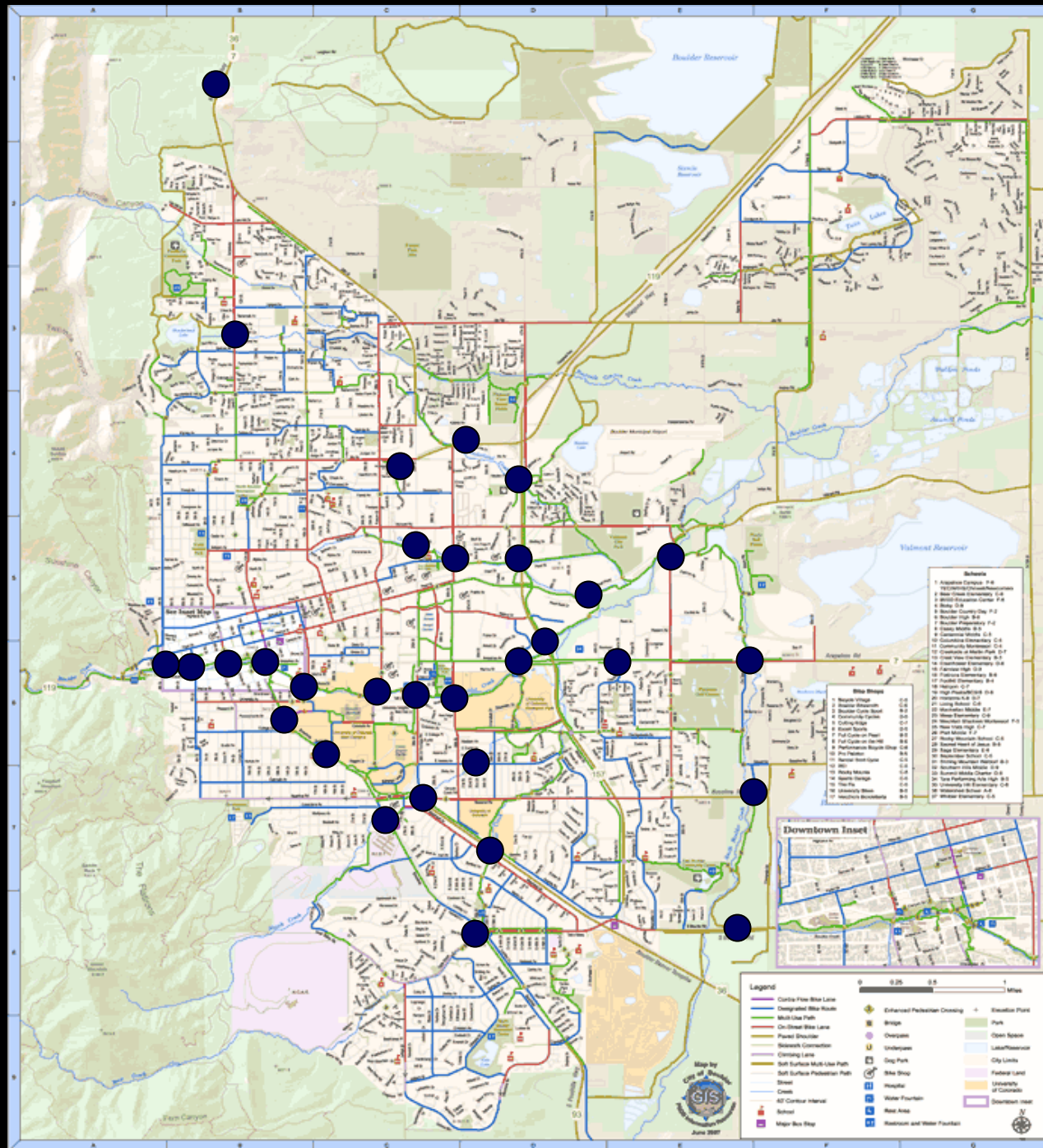




Martin Dr.

Plan: 17
grade
separations by
2020

Actual: 32
grade
separations in
2009

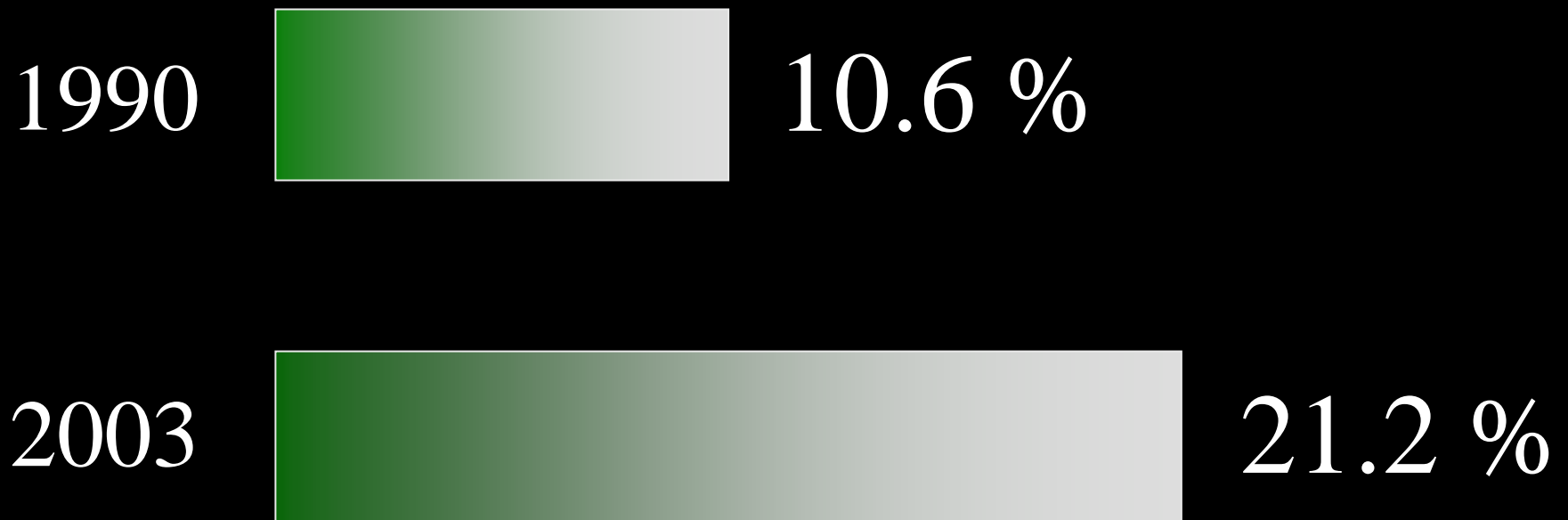


Boulder Bike Mode Share – All Trips

1990  4.9 %

2003  7.7 %

Boulder Bike Mode Share – Commute Trips



5. Federal Policy Framework



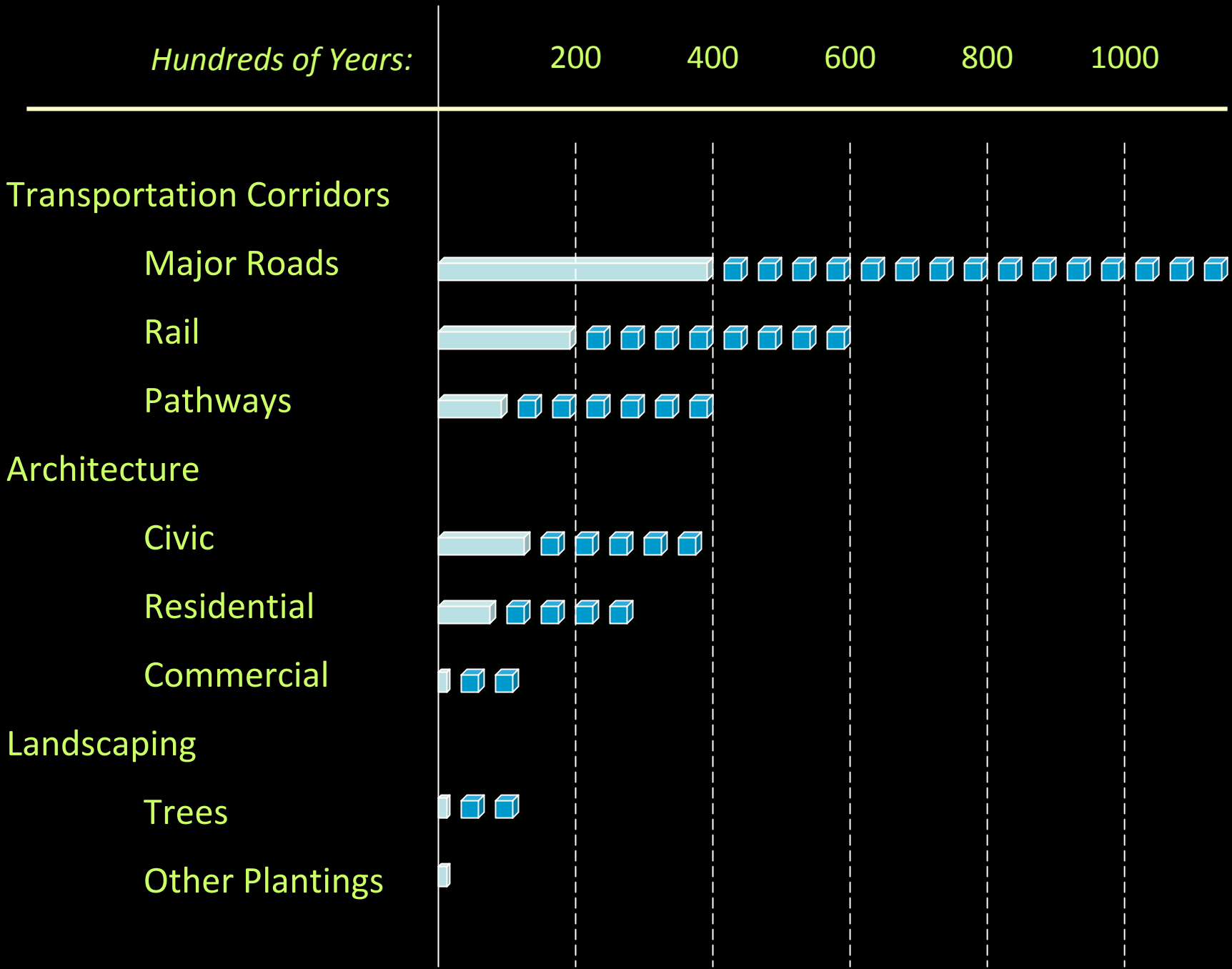
Modern Streets

5. Federal Policy Framework

- Local Self-Determination
- Modal Balance
- Climate Change
- VMT
- Money

Finally, one last point...





Thanking You

October 29, 2009



More Information



www.charlier.org