

Mobility in the 21st Century

10 Principles

1. Mobility Balance
2. Street Connectivity
3. Community Character
4. Forecasting is not Planning
5. Transit will not Alleviate Congestion
6. Active Living
7. Multimodal Streets
8. Sustainable Mobility
9. Empowerment
10. Monitoring & Reporting

defining “Mobility”



Mobility Elements

Travel – Moving over distances

Circulation – Moving within areas

Access – Getting in the door

Built for...



Seattle



Redmond

...travel

Built for...

Denver



Boulder



...travel

Built for...



Flagstaff

...circulation

Redmond

Portland

Built for...



Boulder



...circulation

Built for...



Winter Park, FL

...access



Minneapolis

How We Misfire on Mobility

1. Travel-biased programs
2. Facility-oriented planning

Travel-Biased Programs

We build too much for
travel
and too little for
circulation and access



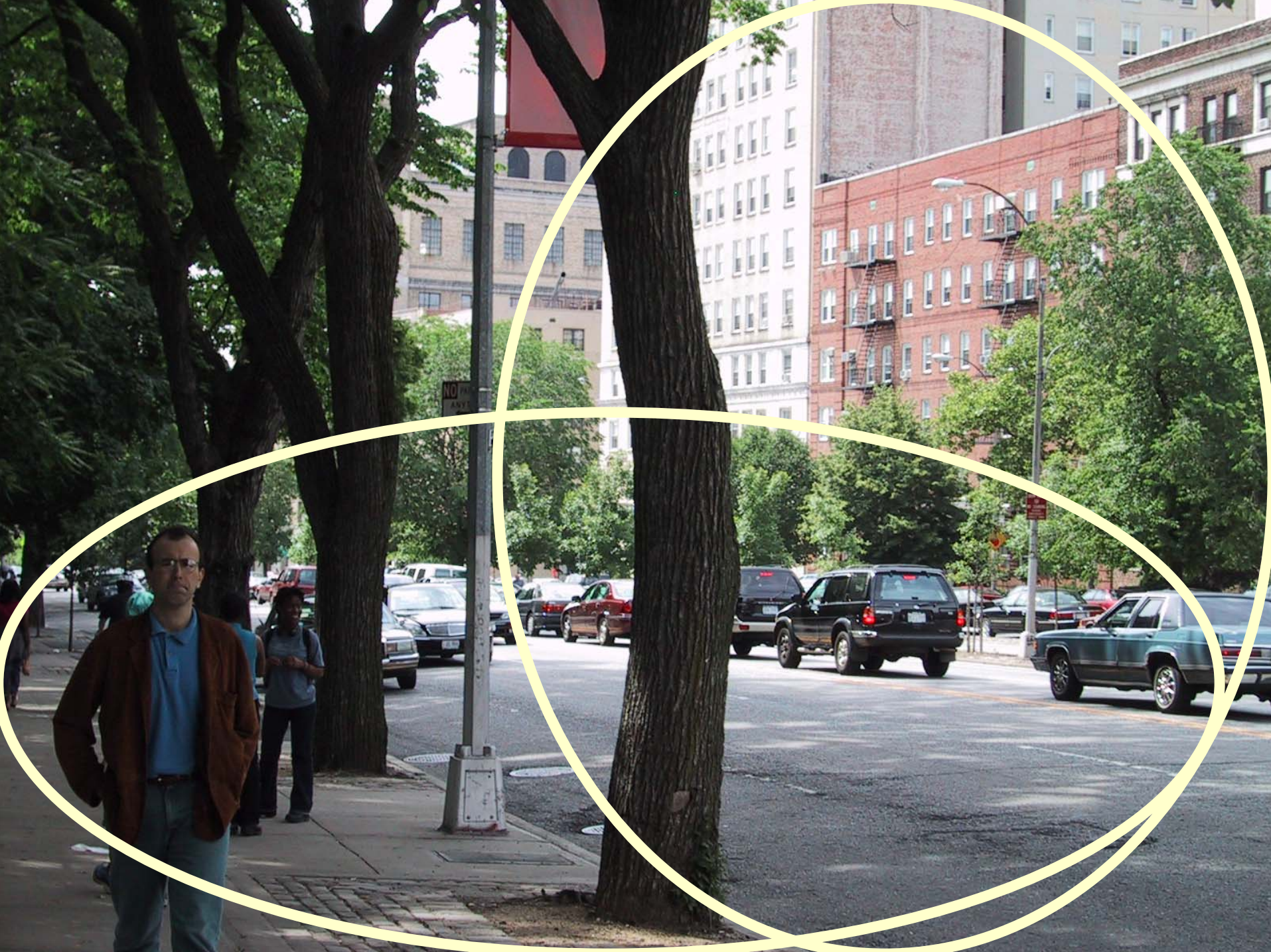


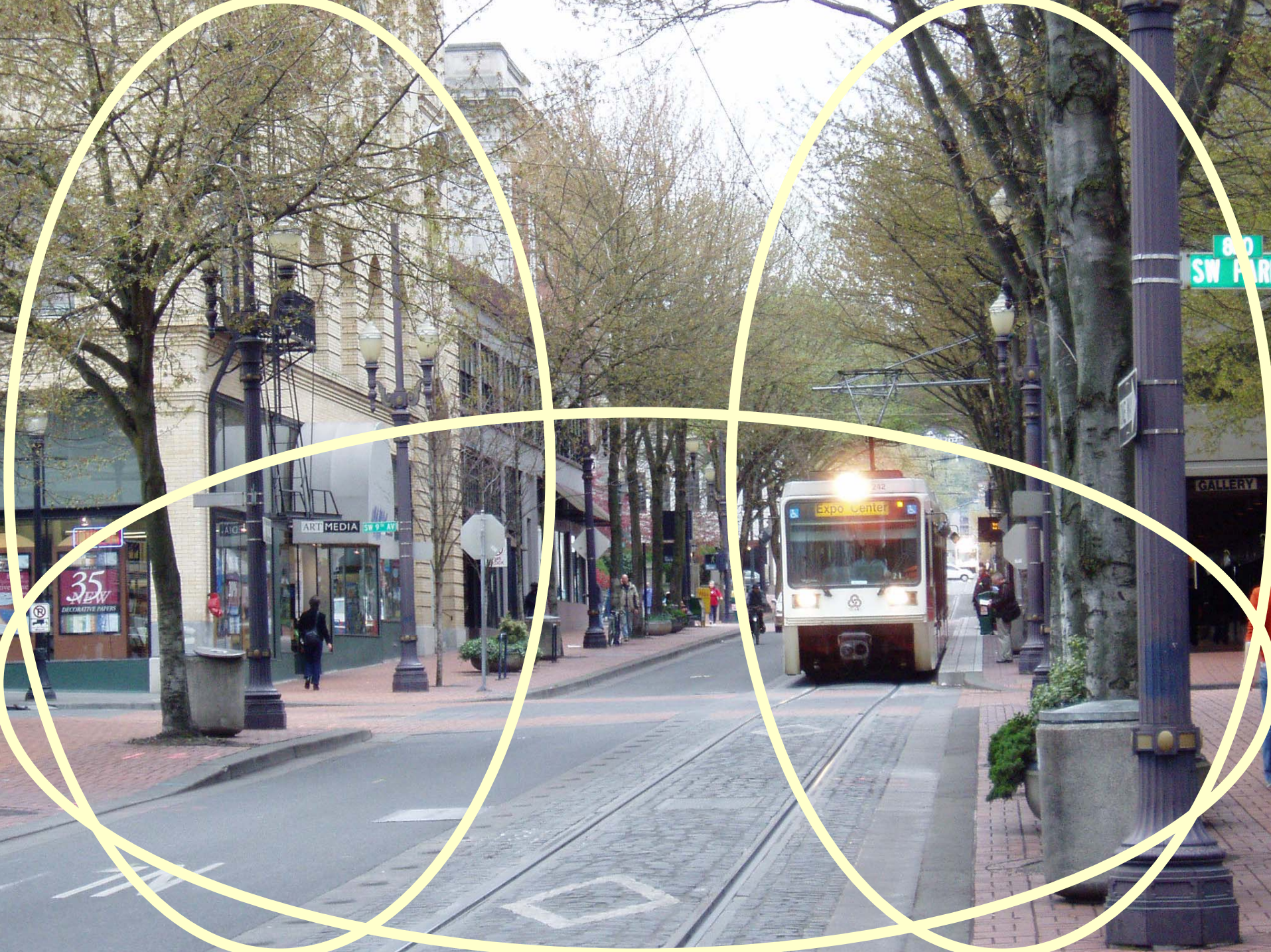
Facility-Oriented Planning

We are focused on
facilities
instead of
communities and places











Credit: Walter Kulash









Credit: Kulash



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Traffic Forecasting

≠

Planning

**Predict
Growth**

```
graph TD; A[Predict Growth] --> B[Forecast Traffic]; B --> C[Widen Streets]; C --> A;
```

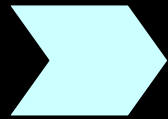
Widen Streets

**Forecast
Traffic**

Instead of planning...

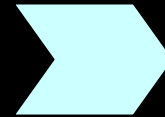
1.

What do
we
want?



2.

How
much
traffic
will
there be?



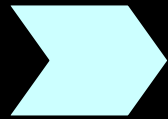
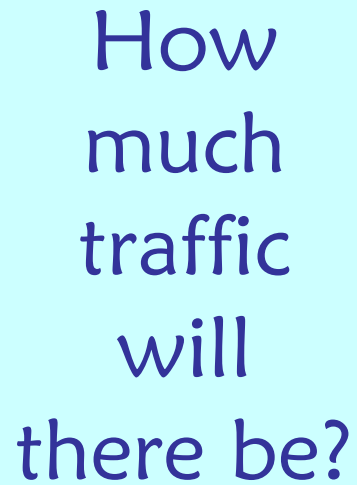
3.

What
should
we do?

...we forecast traffic.

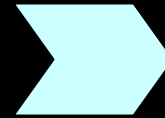
1.

How
much
traffic
will
there be?




2.

What
should
we do?



3.

What do
we get?





Credit: Dan Burden

“Induced Traffic”

Def.

The additional traffic that results directly and indirectly from transportation capacity or travel time improvements – traffic that would not otherwise have occurred at that location.

Types of Induced Traffic

Changes in travel route Immediate

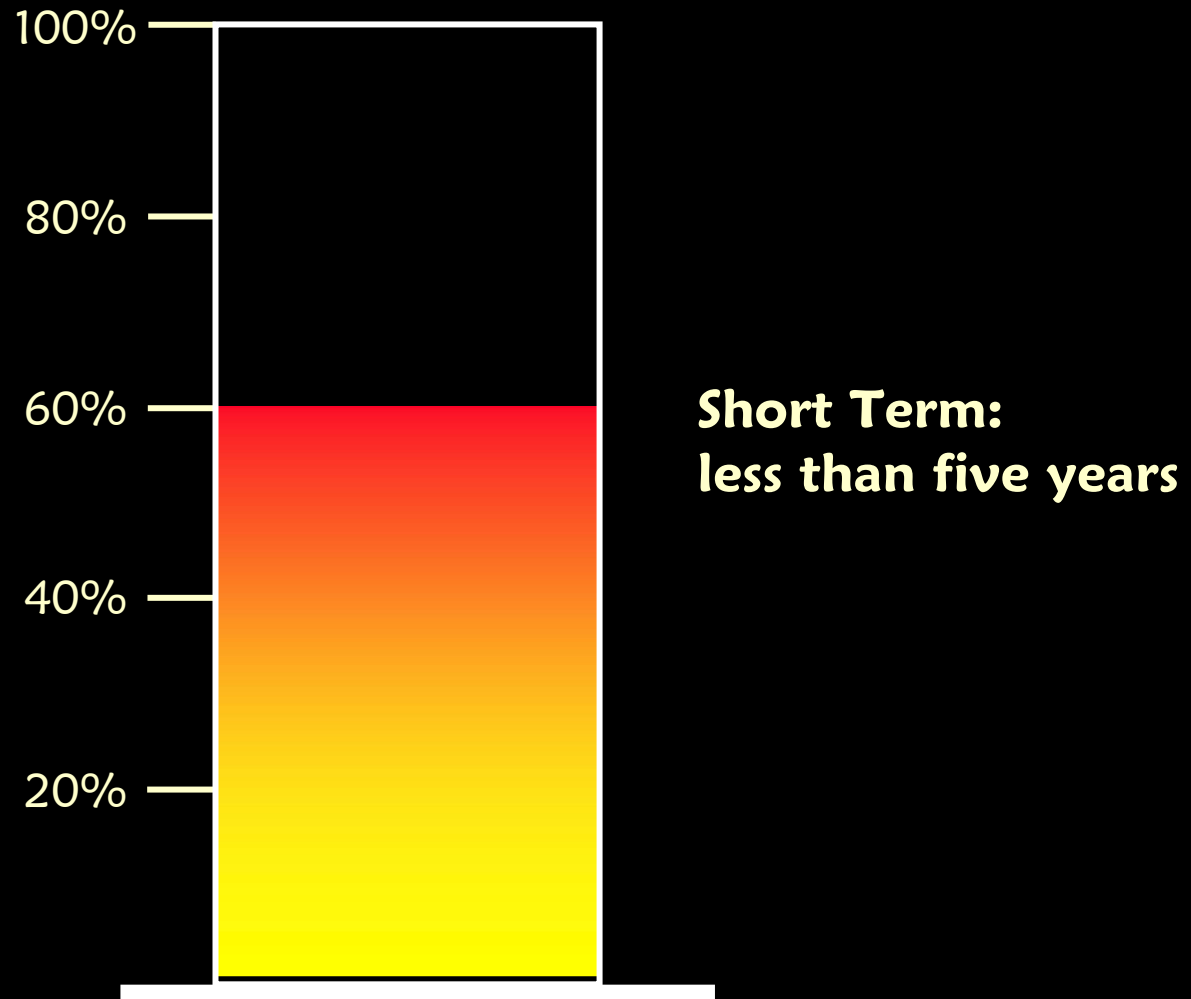
Changes in mode of travel < 6 months

Changes in time of travel < 6 months

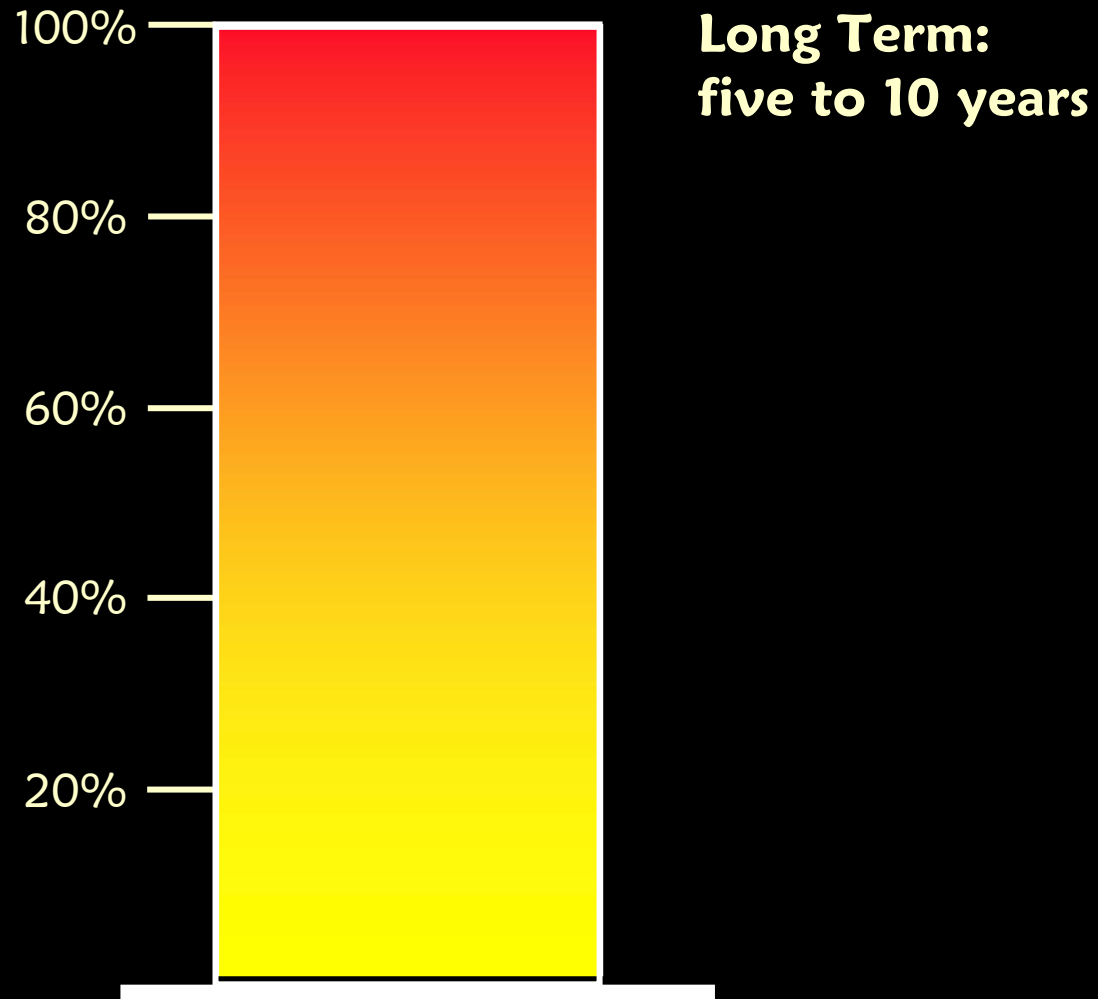
Changes in amount of travel < 6 months

Changes in origins & destinations < 10 years

% of new capacity consumed by induced traffic...



% of new capacity consumed by induced traffic...





If you build it . . .

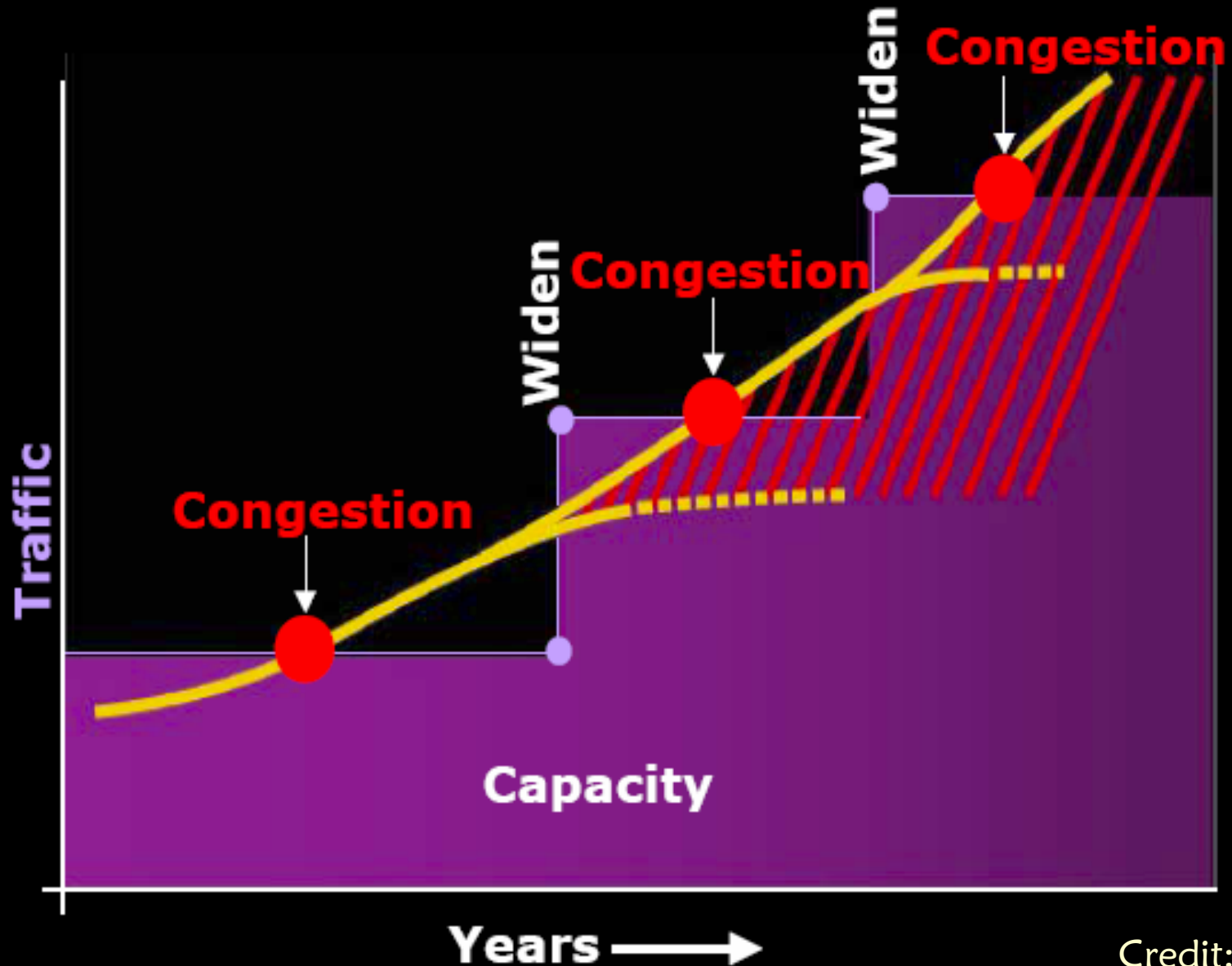
. . . they will come



If you build it . . .

. . . they will come

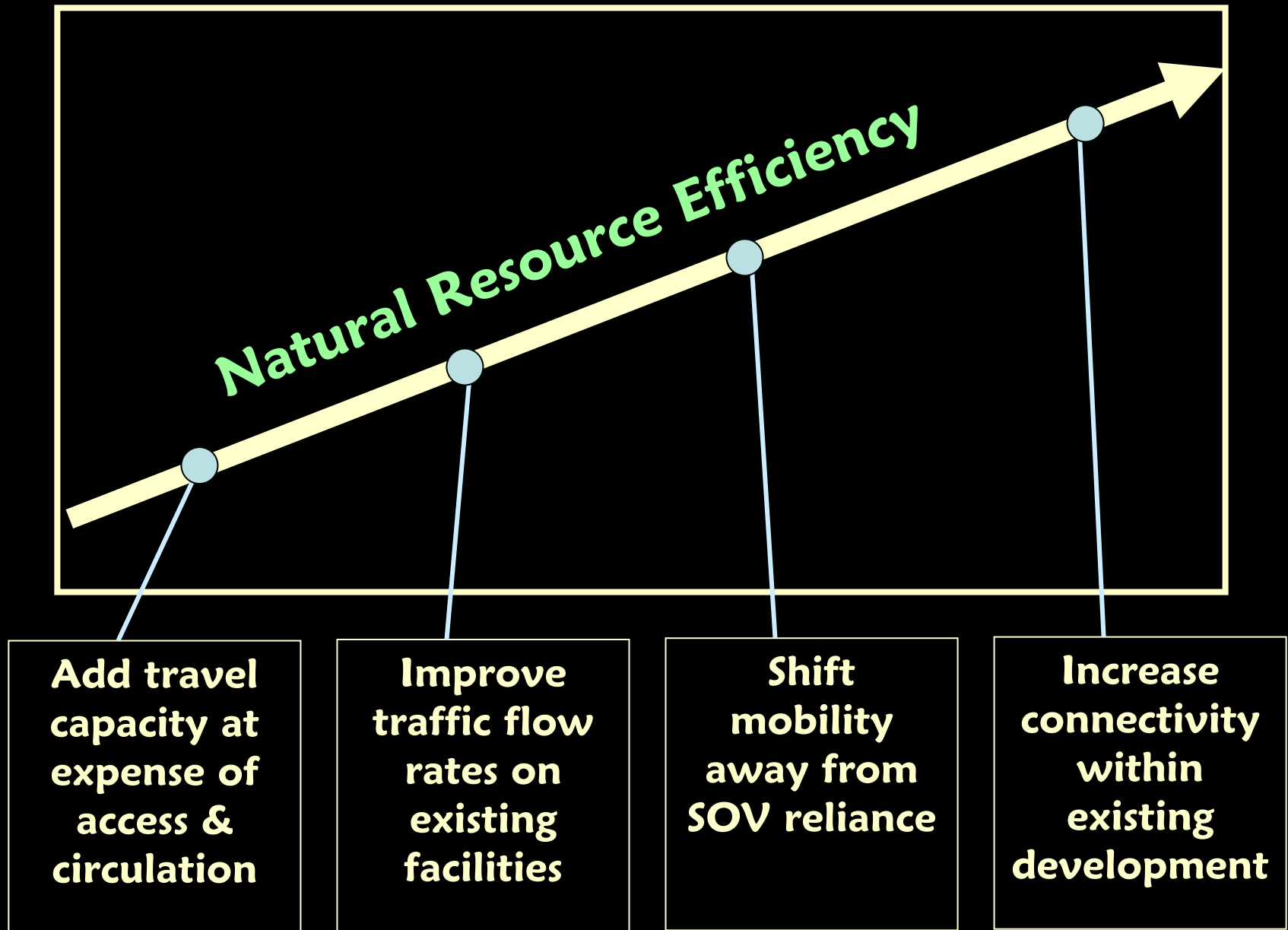
Road Size, Not Congestion is the Choice



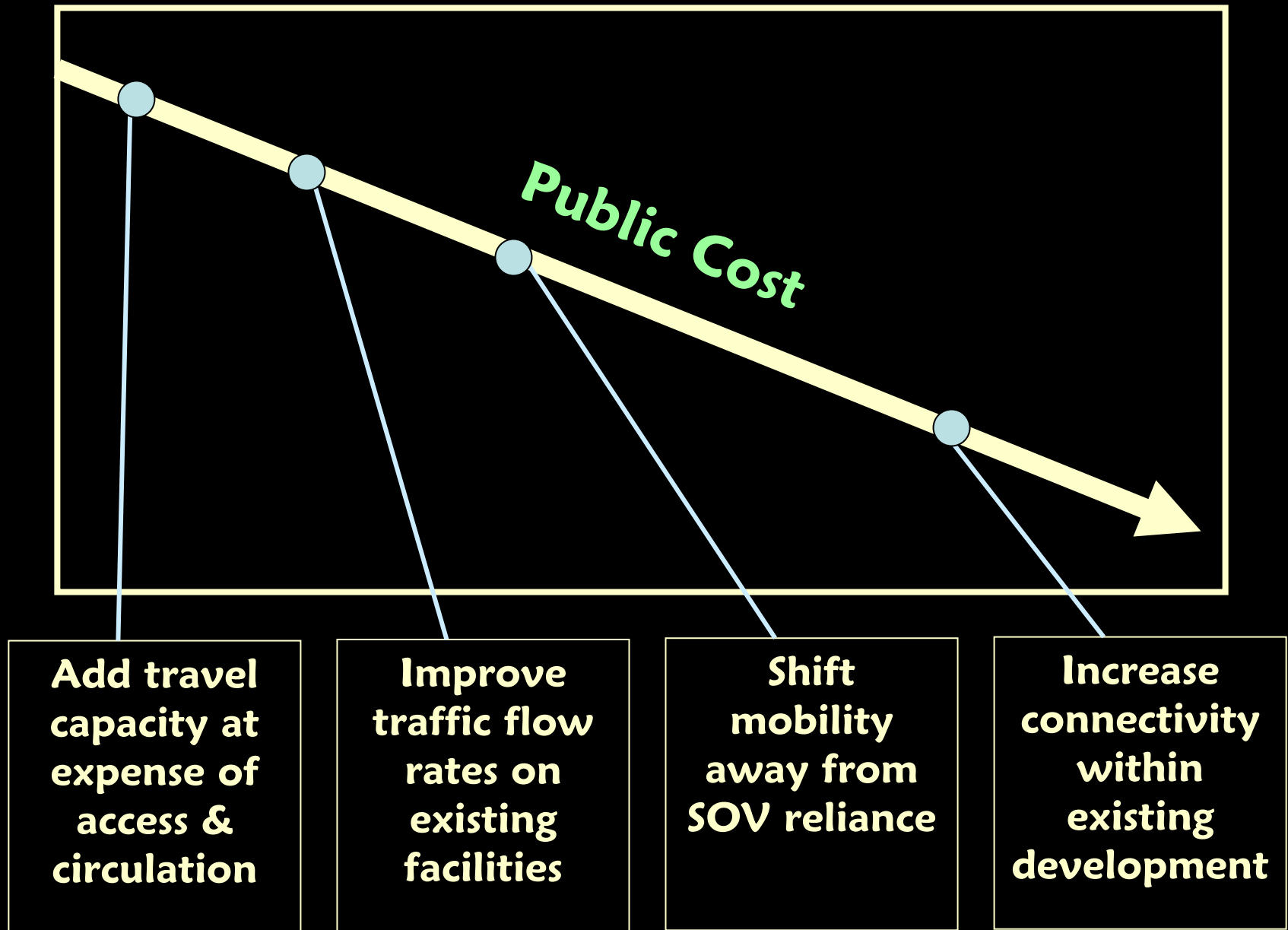
Traffic Engineer's Curse

**Expanding streets to
accommodate traffic growth is
self-fulfilling and self-defeating at
the same time**

Sustainability of Transportation Strategies 1



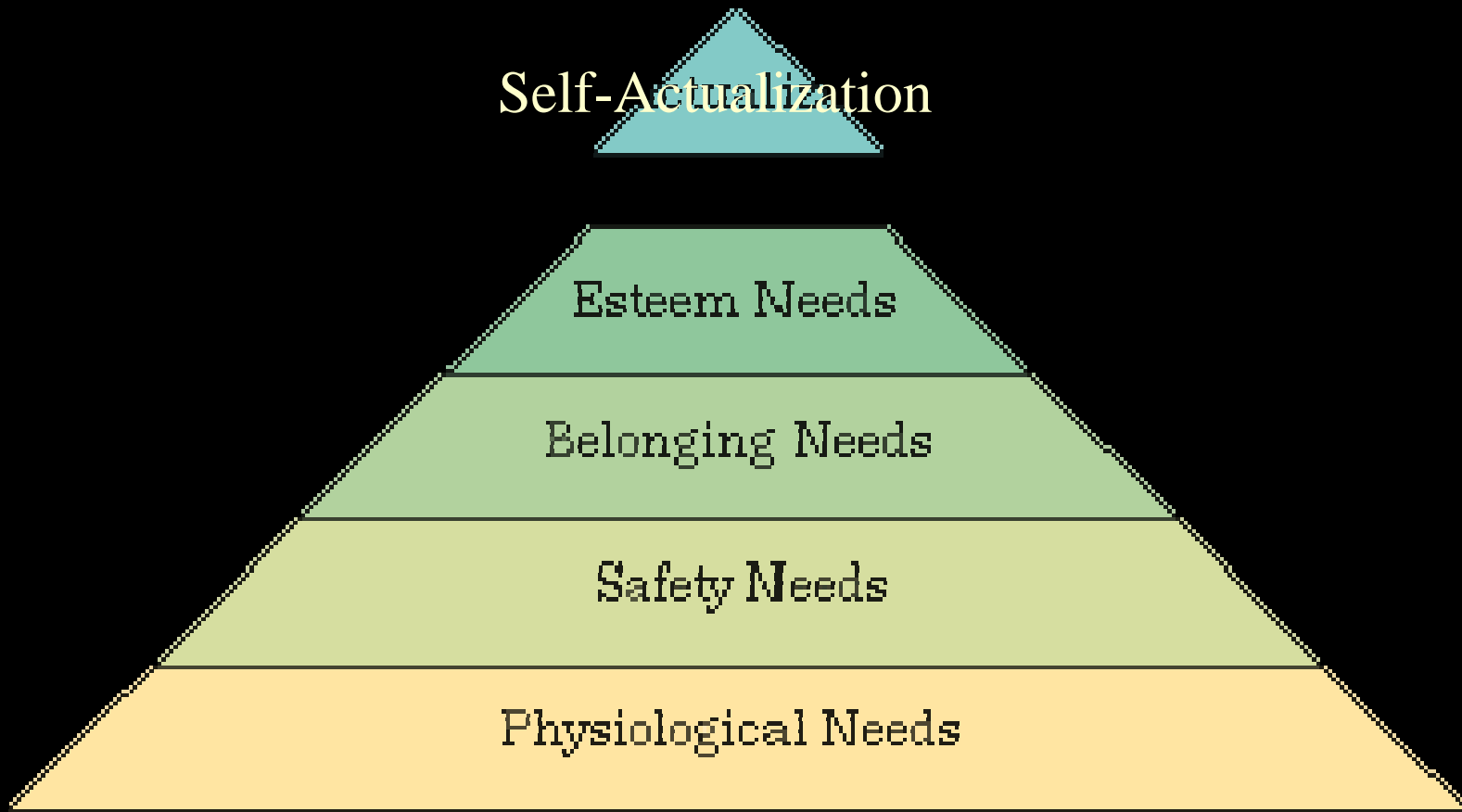
Sustainability of Transportation Strategies 2



**What if we regarded
transportation planning & design
as means rather than as ends?**

What are the ends?

Maslow's Hierarchy of Needs



What matters to us?

- Thriving Family
- Personal Freedom
- Safety
- Physical & Mental Health
- Community Engagement
- Economic Independence

Impact of Transportation on

Thriving Family







Why roads are crowded

From 1970 to 1996, the mileage people drive has grown four times as fast as the population, twice as fast as licensed drivers and 18 times as fast as new roads:

Miles driven: 2.5 billion

Vehicles: 206.4 million

Drivers: 179.5 million

Population: 265.3 million

Miles of roads: 3.9 million

Growth since 1970
+123%

+90%

+61%

+30%

+7%

Source: Road Information Program analysis of December report by the Federal Highway Administration

Moms Become Cab Drivers

Everything is a Drive Away

Suburban mothers spend
17 full days a year
behind the wheel, more than the
average parent spends dressing,
bathing and feeding a child

Source: Surface Transportation Policy Project

Home

Recreation

Workplace











Impact of Transportation on Personal Freedom







my car





Real Families – 3 cars

	Mom	Dad	Daughter
Monday	SOV	SOV	SOV
Tuesday	SOV	SOV	SOV
Wednesday	SOV	SOV	SOV
Thursday	SOV	SOV	SOV
Friday	SOV	SOV	SOV
Saturday	--	SOV	--
Sunday	varies	varies	varies

Real Families – 2 cars

	Mom	Dad	Daughter
Monday	SOV	LRT	SOV
Tuesday	SOV	SOV	Bike
Wednesday	SOV	LRT	SOV
Thursday	SOV	SOV	Bike
Friday	Bike	LRT	SOV
Saturday	--	SOV	--
Sunday	varies	varies	varies





(Exit)
Doc

Debbie Thomas Real Estate

NW 10TH & GILMAN

Portland
Streetcar
to NW 23rd Ave.

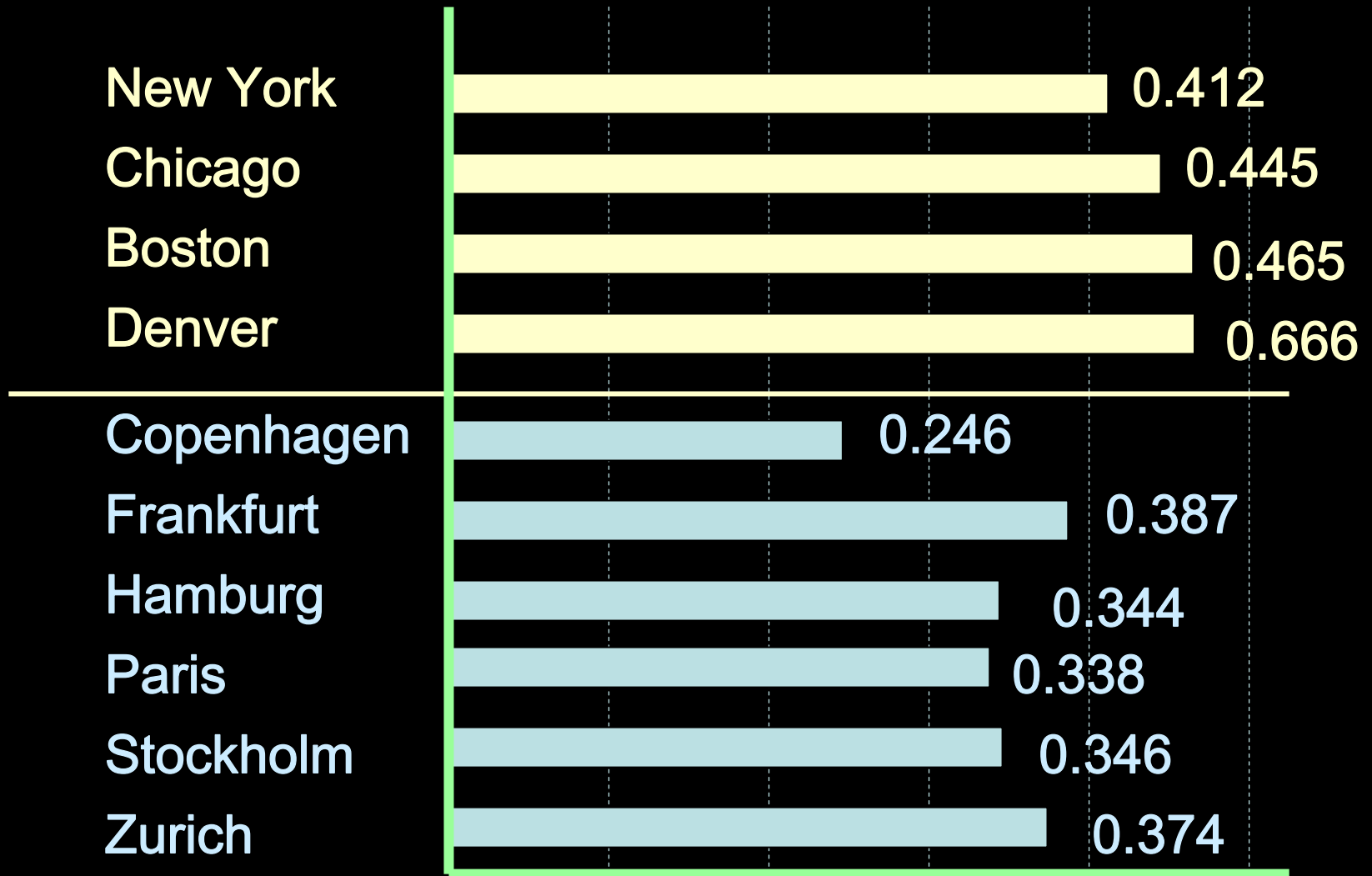
003

NW 23RD AVE.

VICTOR

70

Per Capita Auto Ownership - 1980



Source: Newman/Kenworthy

**One less car: - \$4,000/yr.
(net about \$3,500)***

Up to \$50,000 in additional
mortgage capacity

* assumes 2nd or 3rd car for household

Mobility Enhancement



Mobility Enhancement





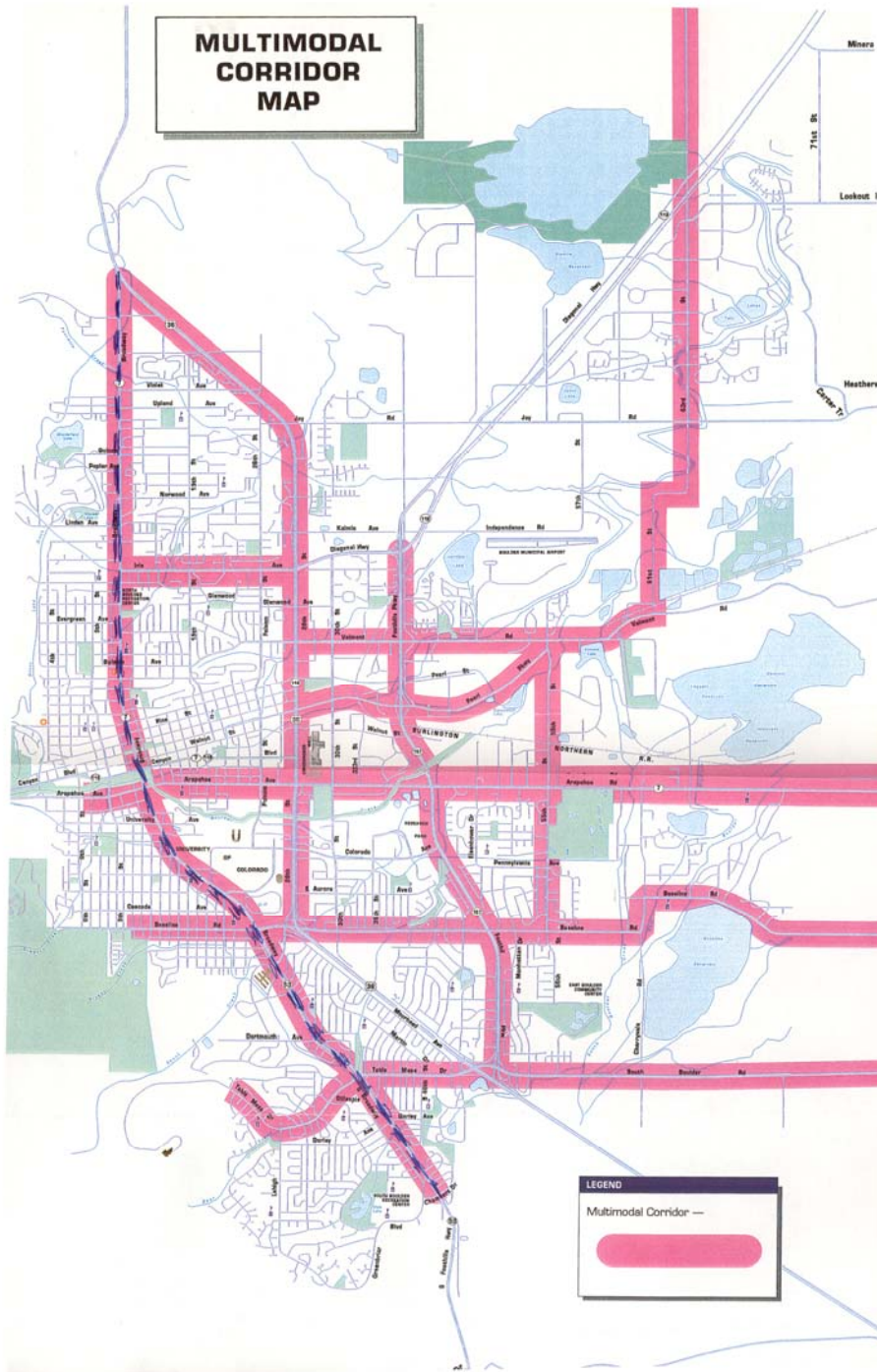
Mobility Enhancement



**Streets are the principal infrastructure
for all modes of travel**



MULTIMODAL CORRIDOR MAP



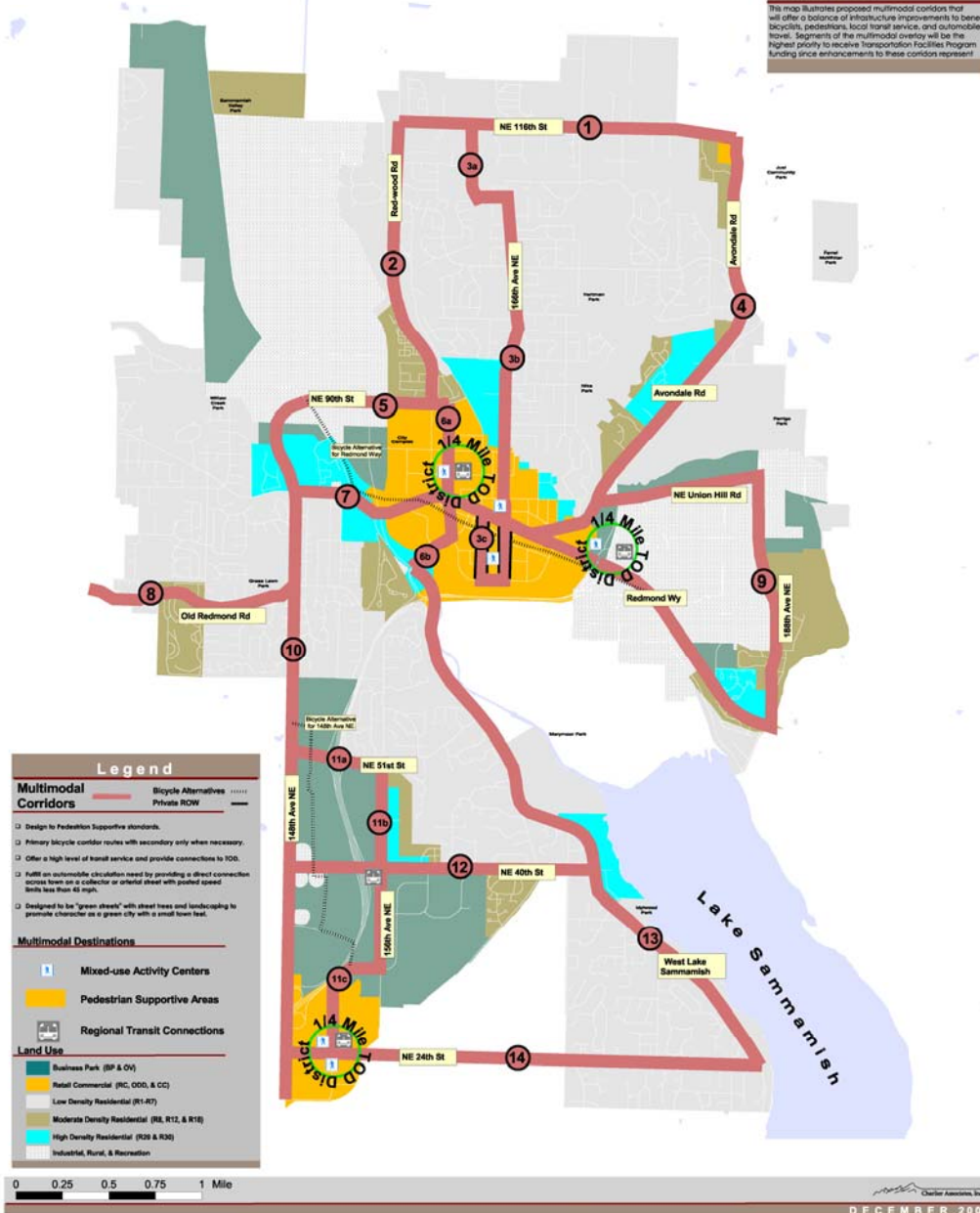
Boulder



Proposed Multimodal Overlay


Figure 5E.7

The map illustrates proposed multimodal corridors that will offer a balance of infrastructure improvements to benefit bicyclists, pedestrians, local transit service, and automobile travel. Segments of the multimodal overlay will be the highest priority to receive Transportation Facilities Program funding since enhancements to these corridors represent



Redmond

Impact of Transportation on Safety



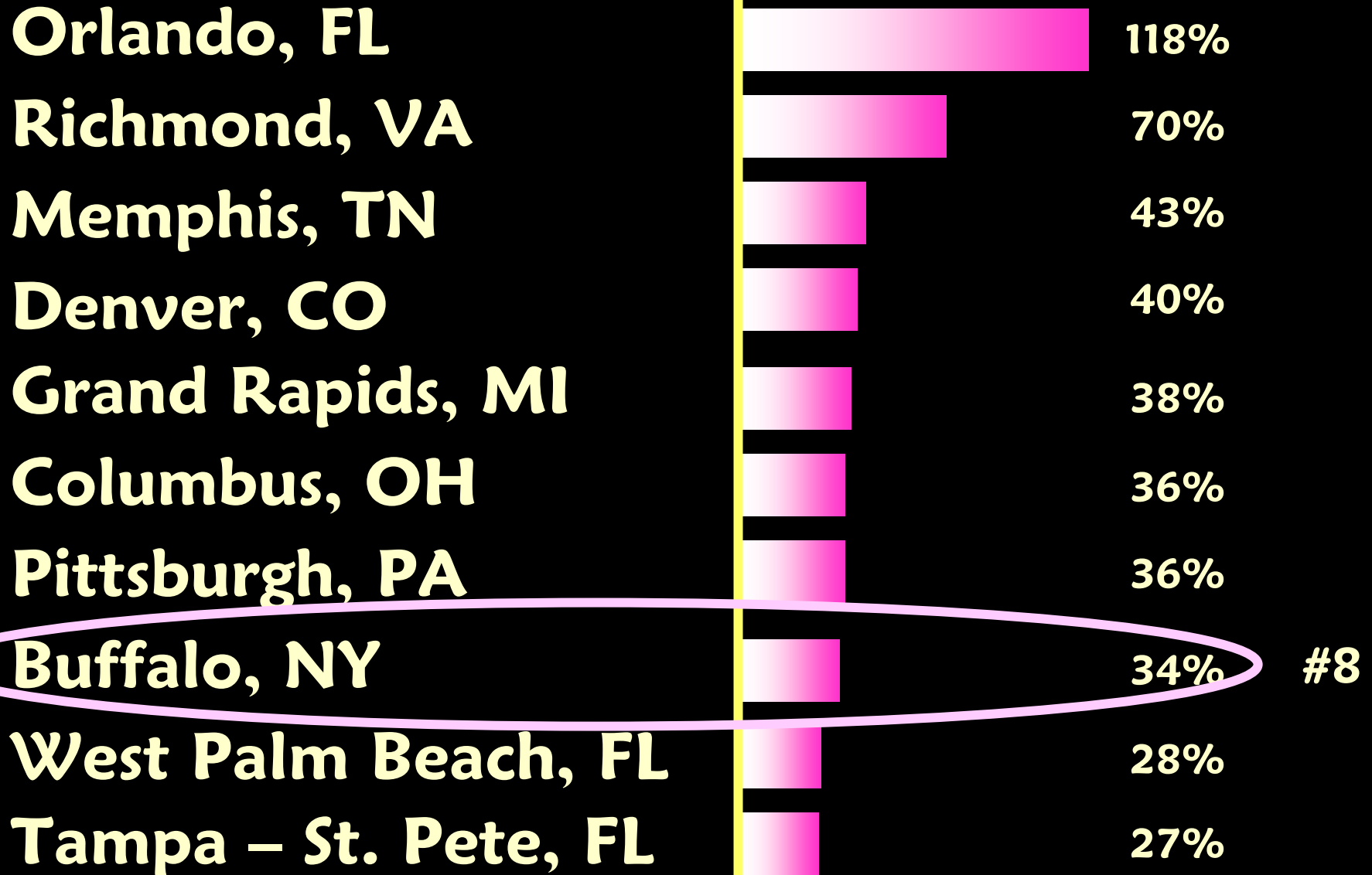
Wider streets are not...
...safer streets.



“Mean Streets – 2004”

Surface Transportation
Policy Project

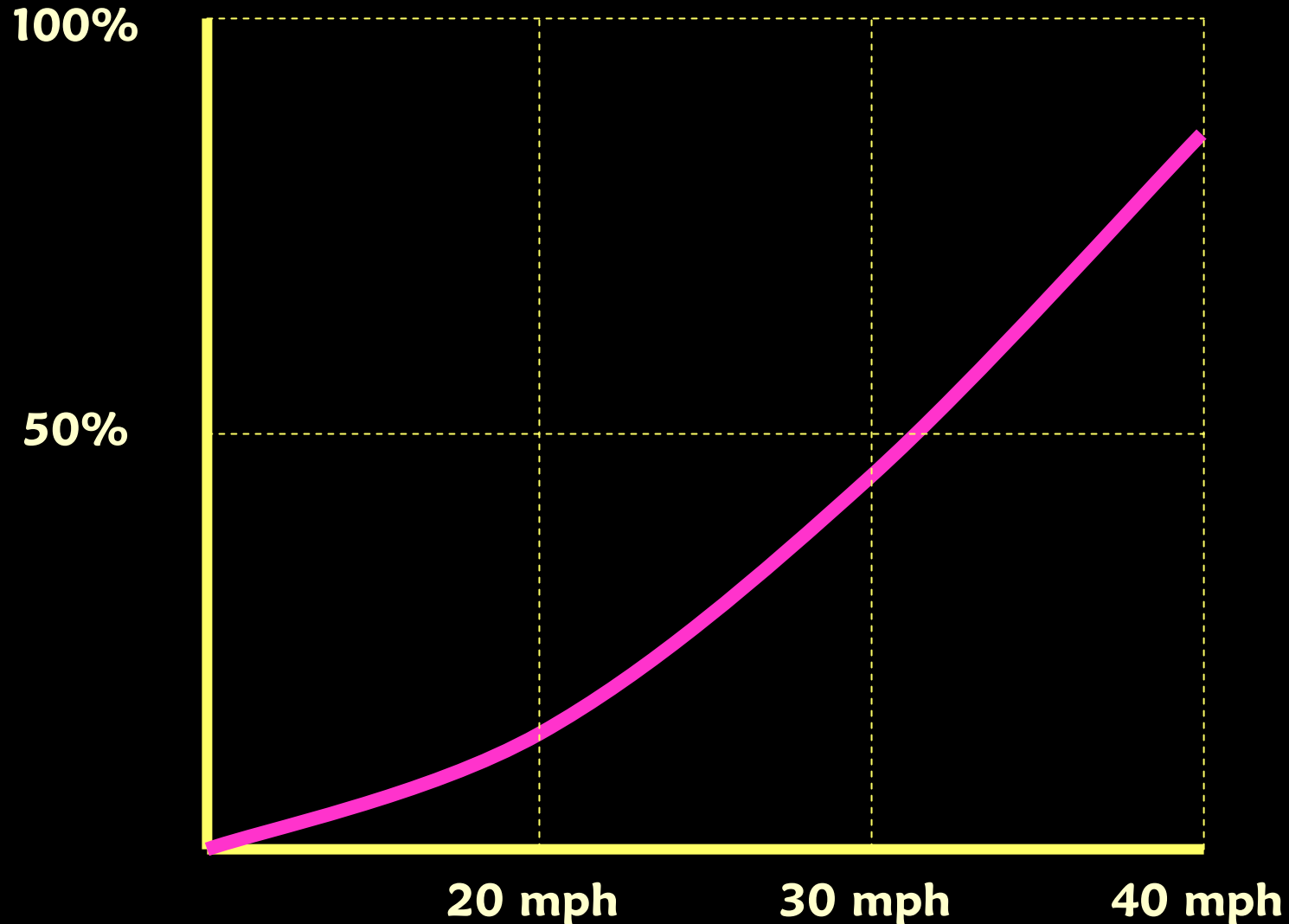
Change: Pedestrian Danger Index (1995 – 2003)



Source: STPP – “Mean Streets”



Probability of Death of Pedestrian as a Function of Vehicle Speed





Impact of Transportation on

Physical & Mental Health

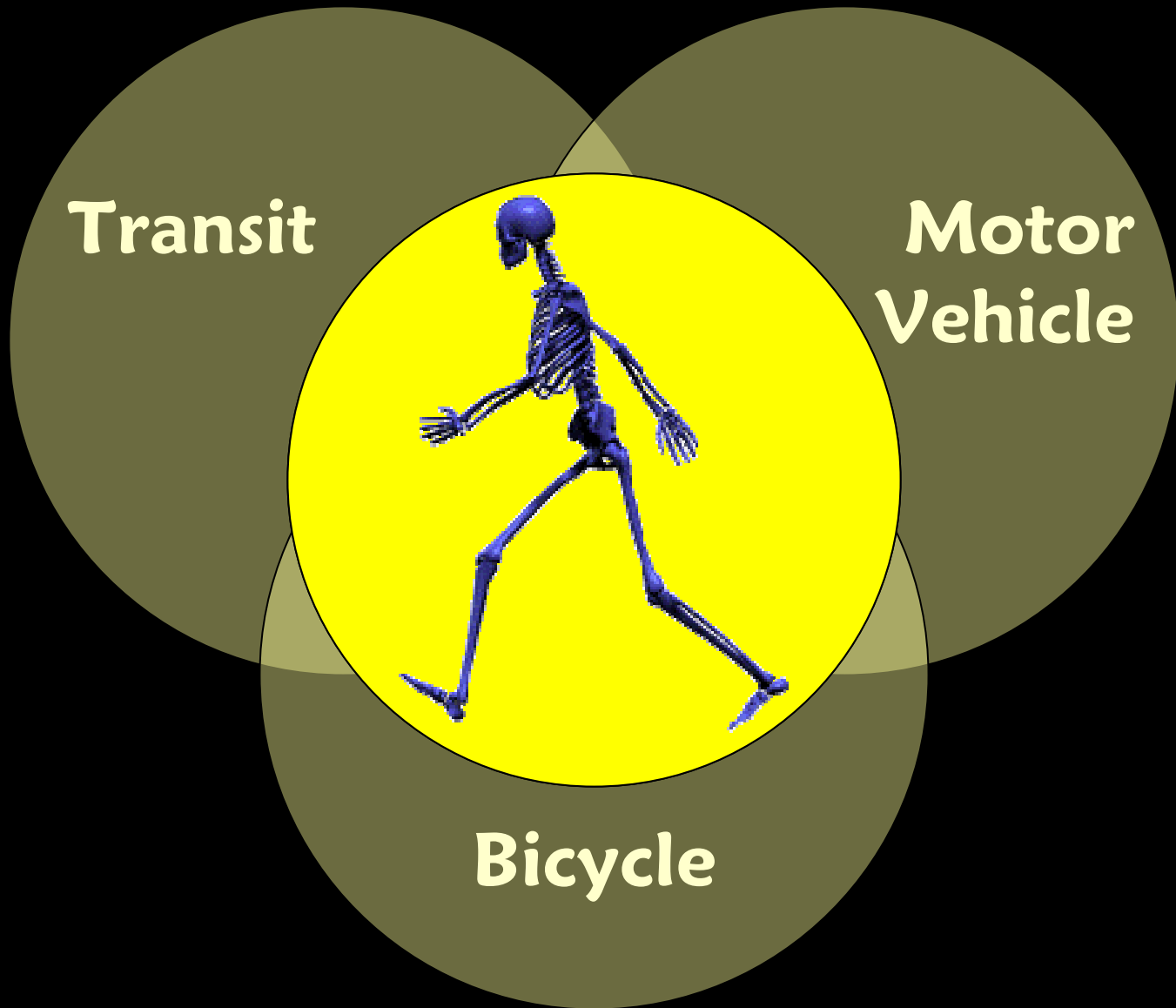


Walking

...is not an “alternate mode”

Walking

...is being human



We Walk Because We are Human



We are Human Because We Walk

Because We Walk...

- We speak
- We sing
- We use tools
- We orient spatially at 3 mph



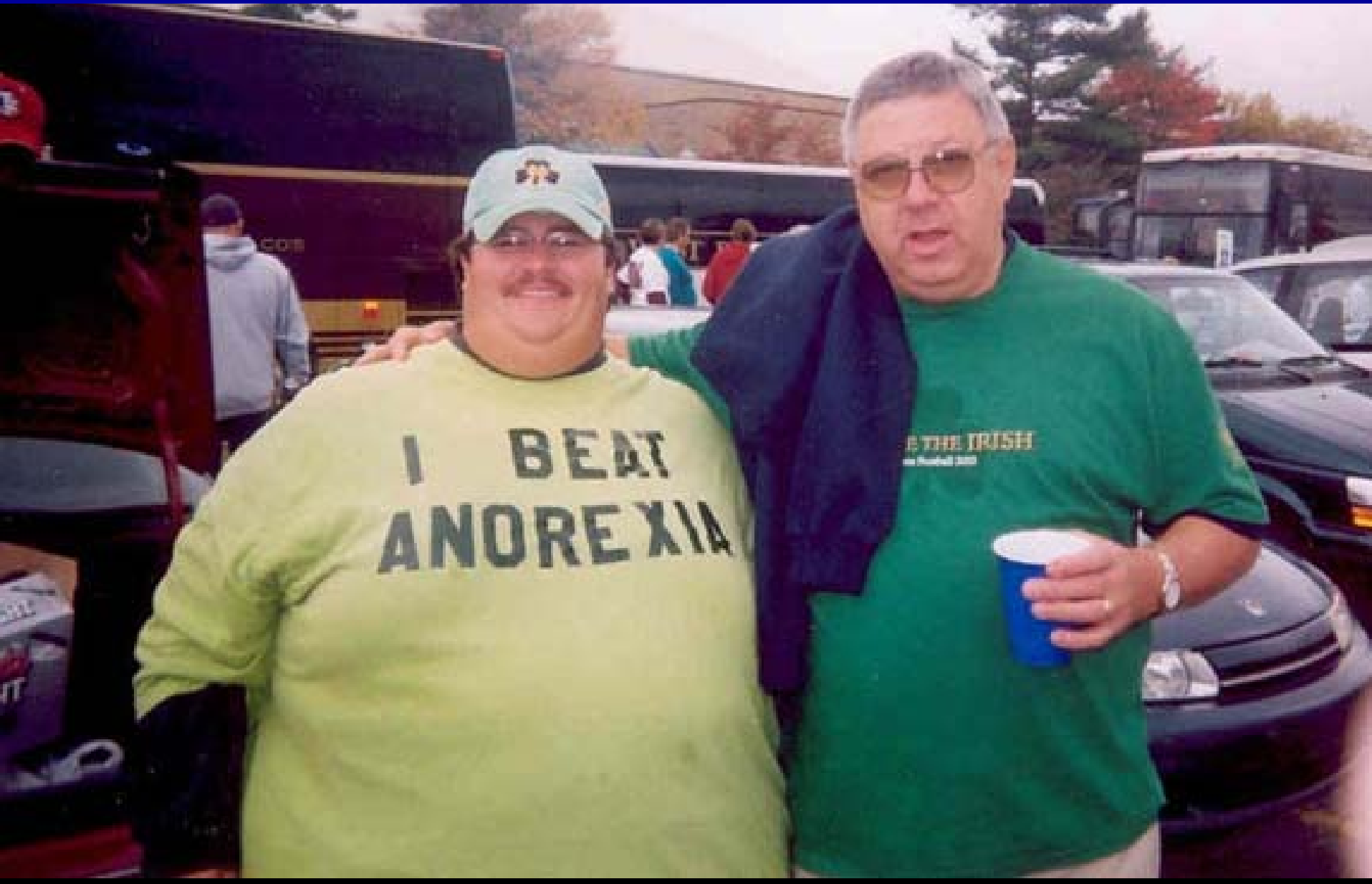
Human History







We cannot escape our DNA...



...no matter how hard we try





Impact of Transportation on Connectedness









Stained Glass

Stained Glass
Custom Glass
Windows & Doors
Stained Glass
Repairs
Supplies
Cleaning
1-800-875-1234



EANS

FAVORITE

RESTAURANT STEAKS

AND



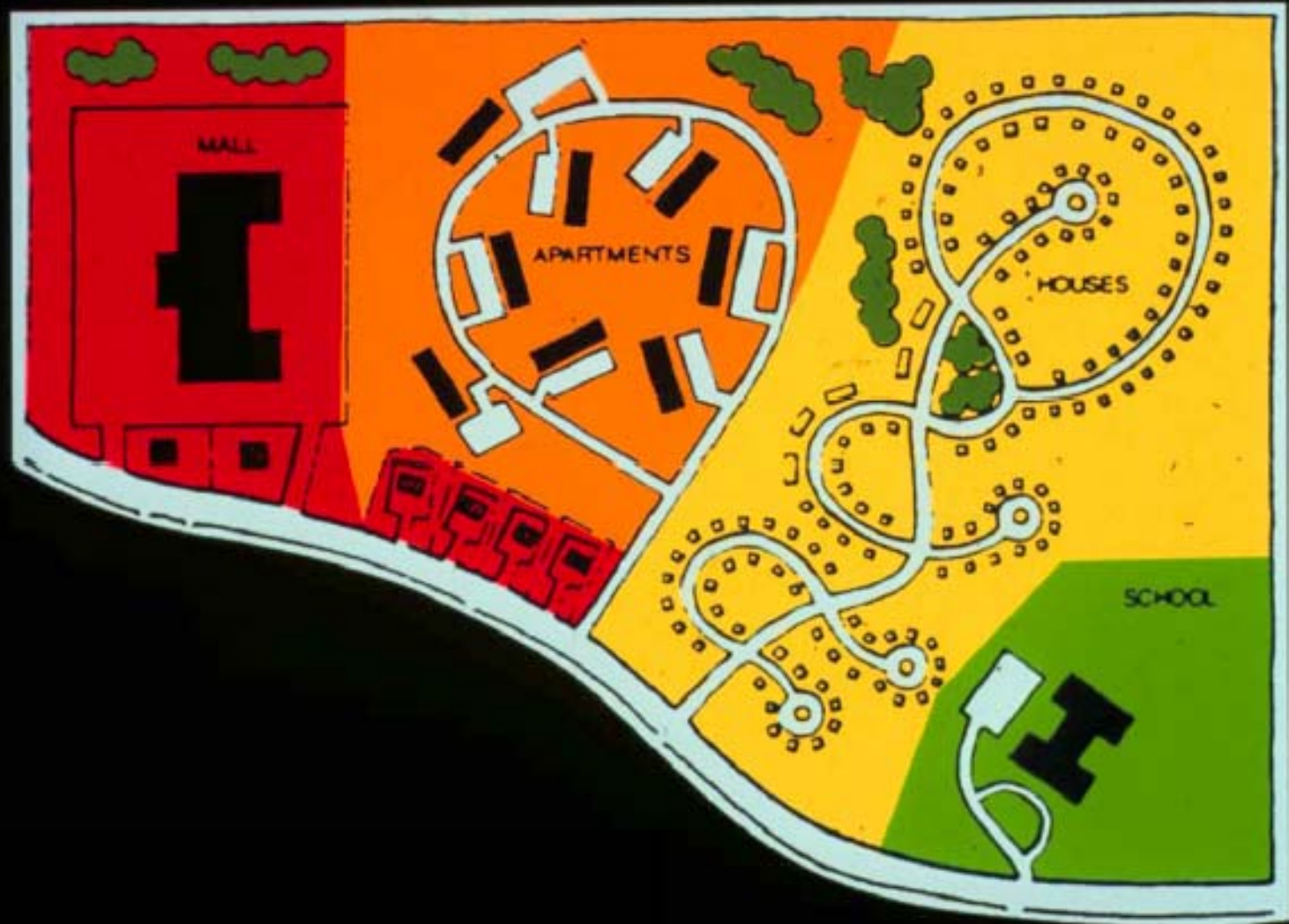
Credit: Dan Burden



Breckenridge

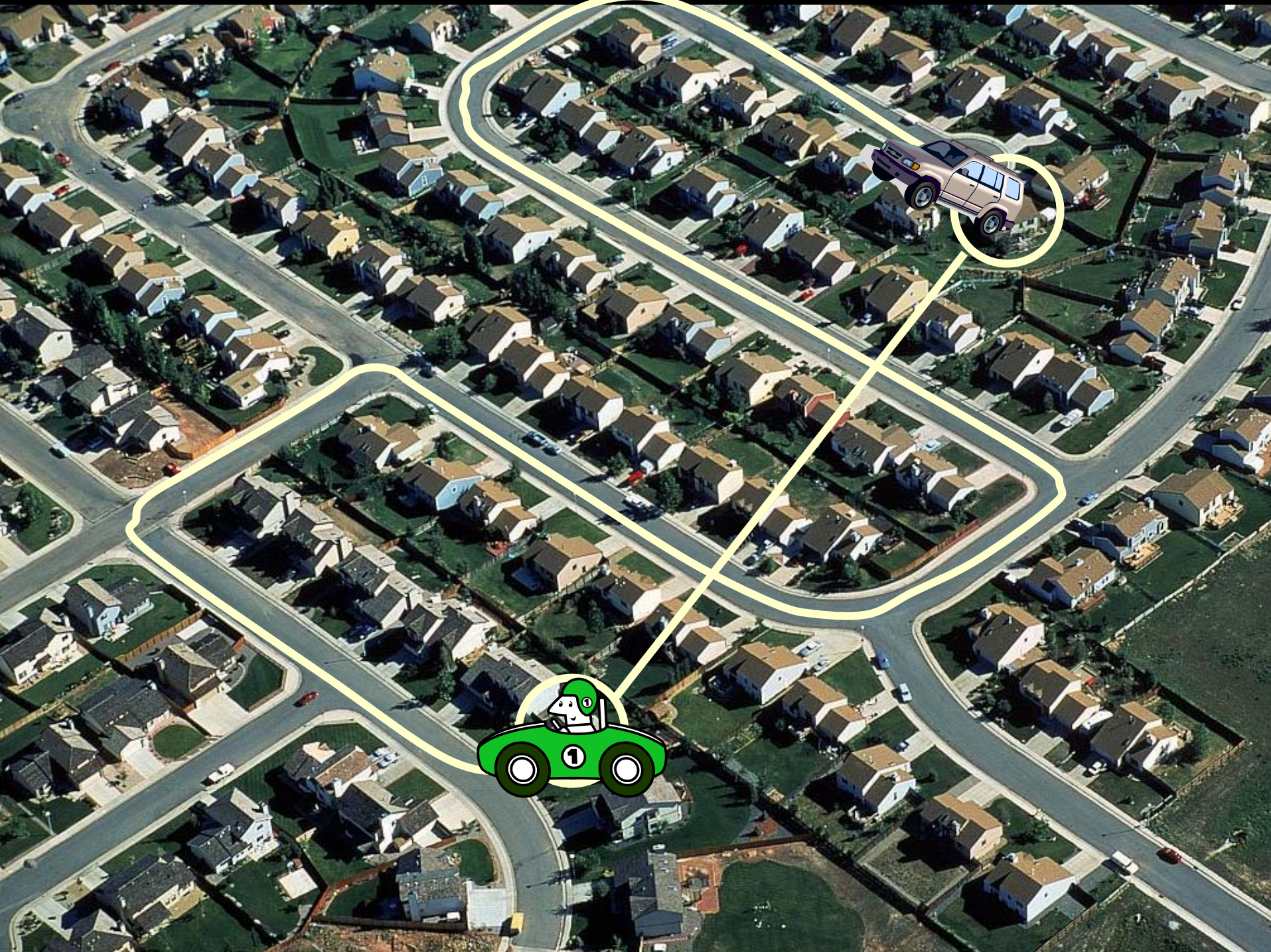


Conventional



Traditional

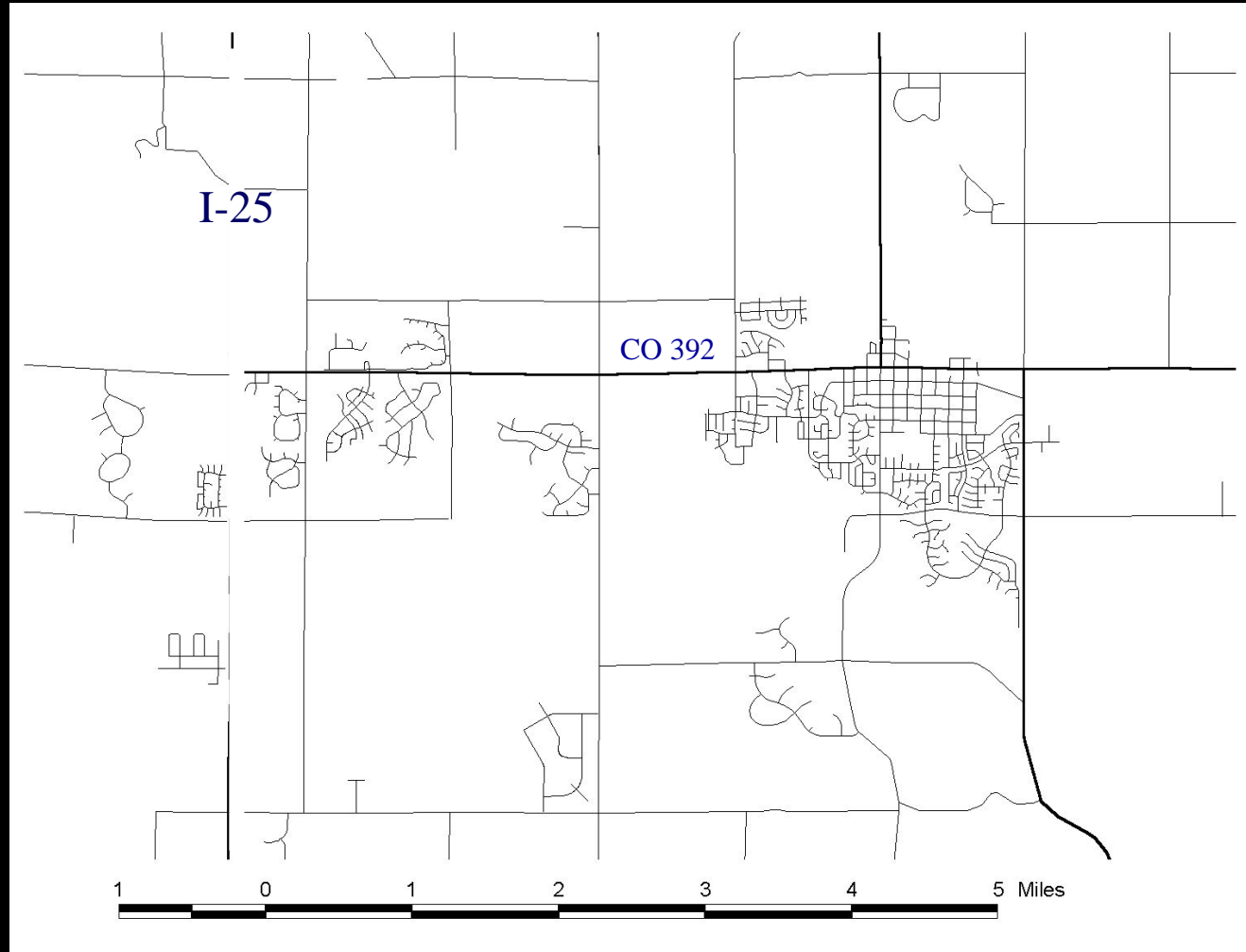






How Does This Happen?

A Colorado Community

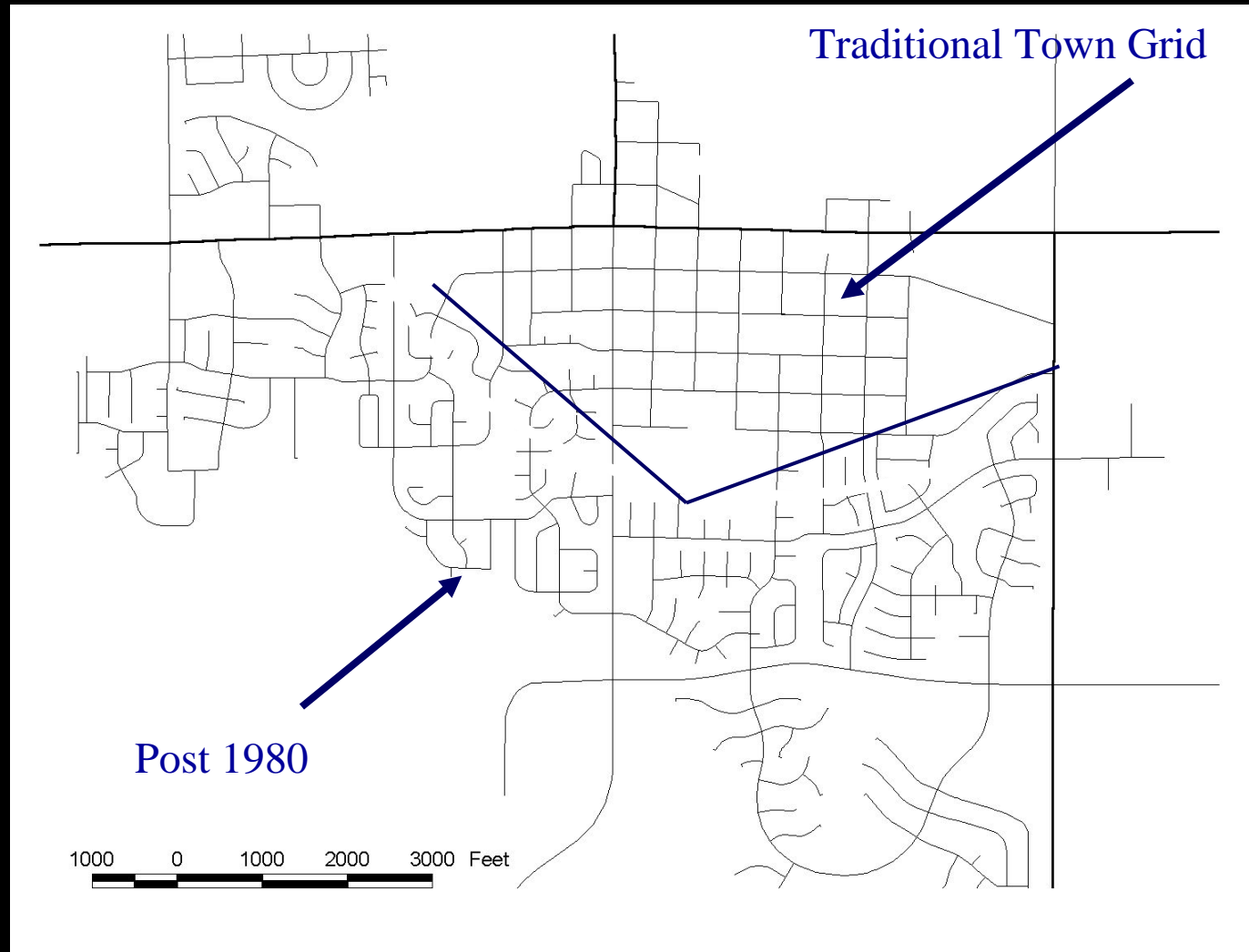


(adapted from GIS files)

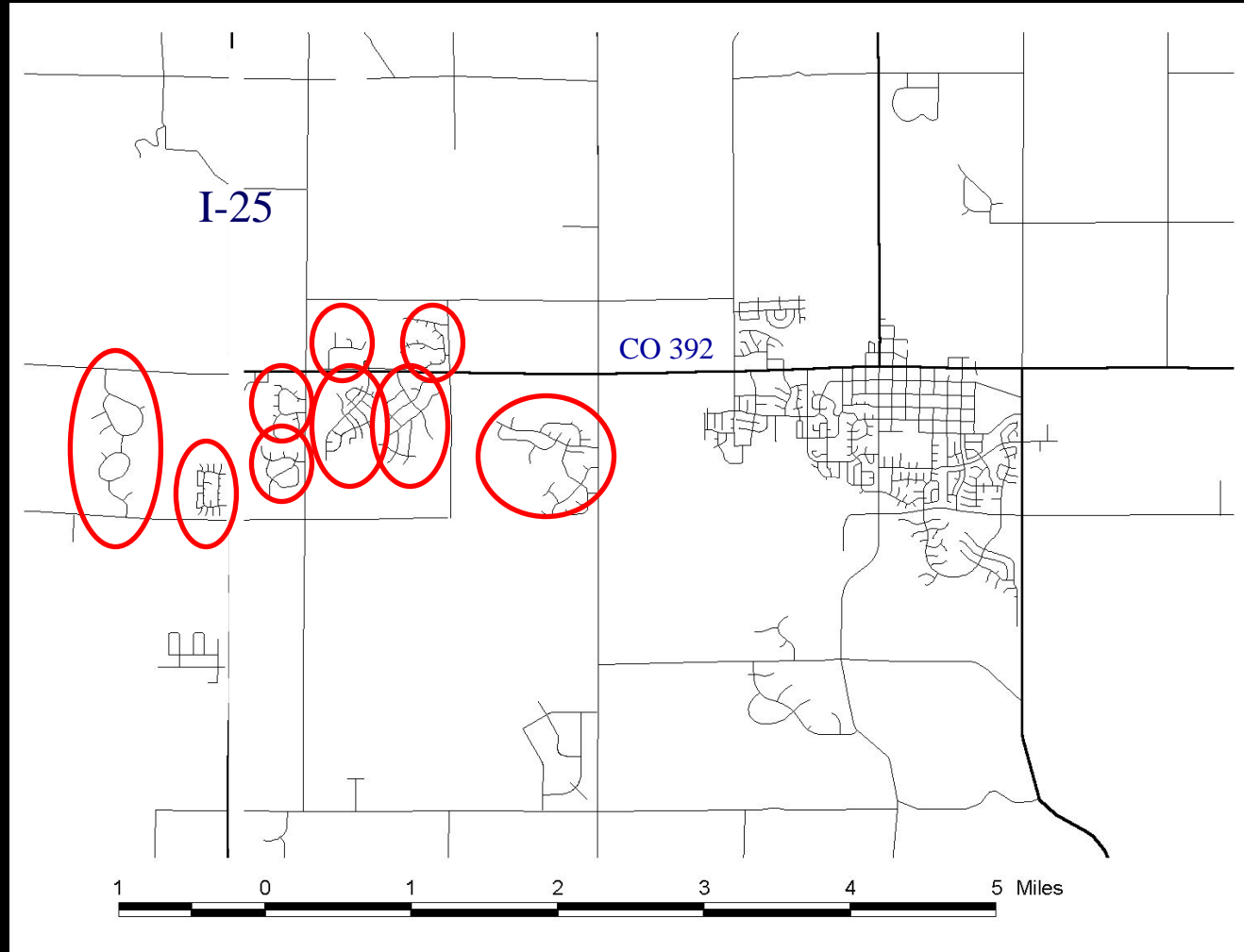
The Original Town



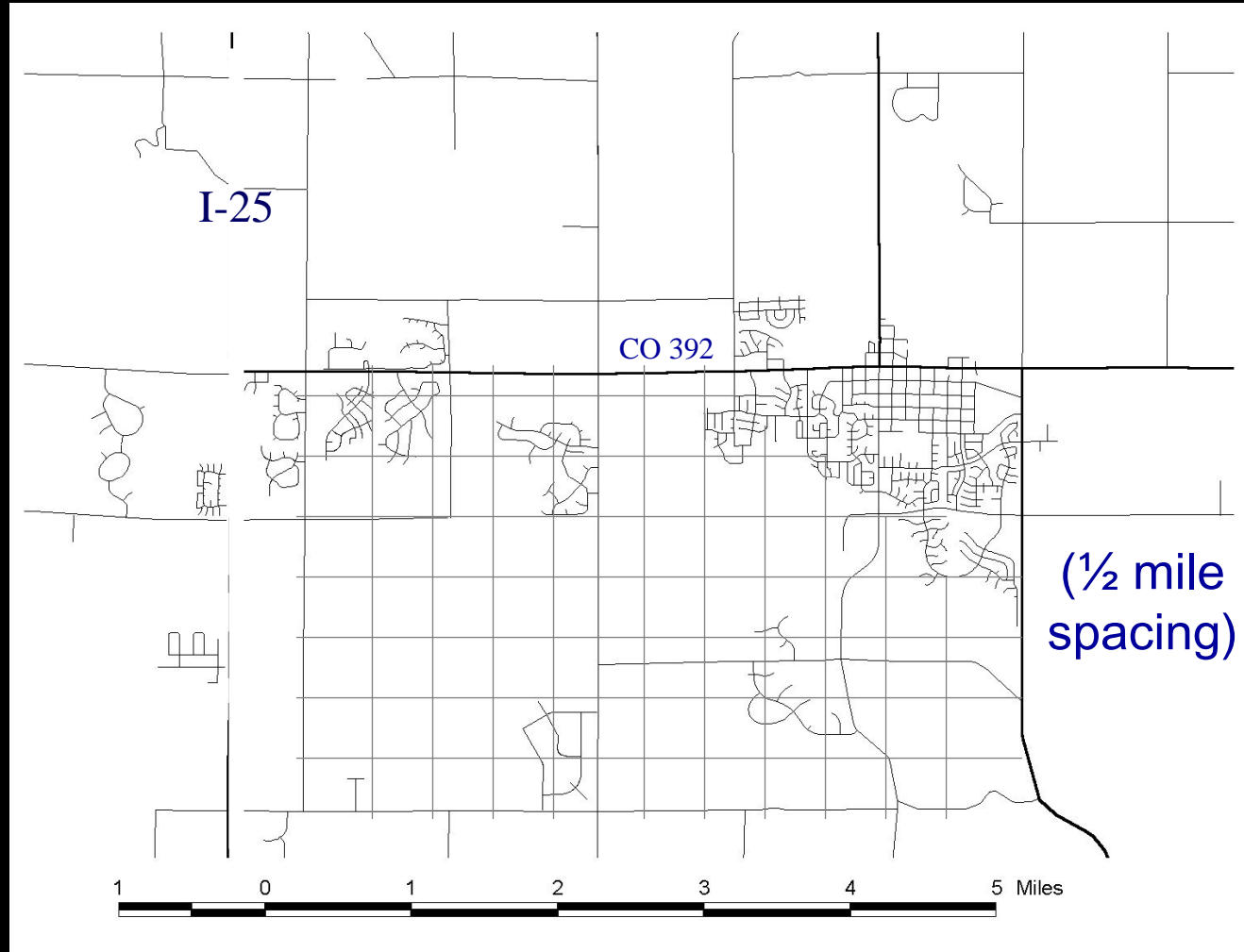
First Tier - New Development



1990s Invasion of the “Pods”

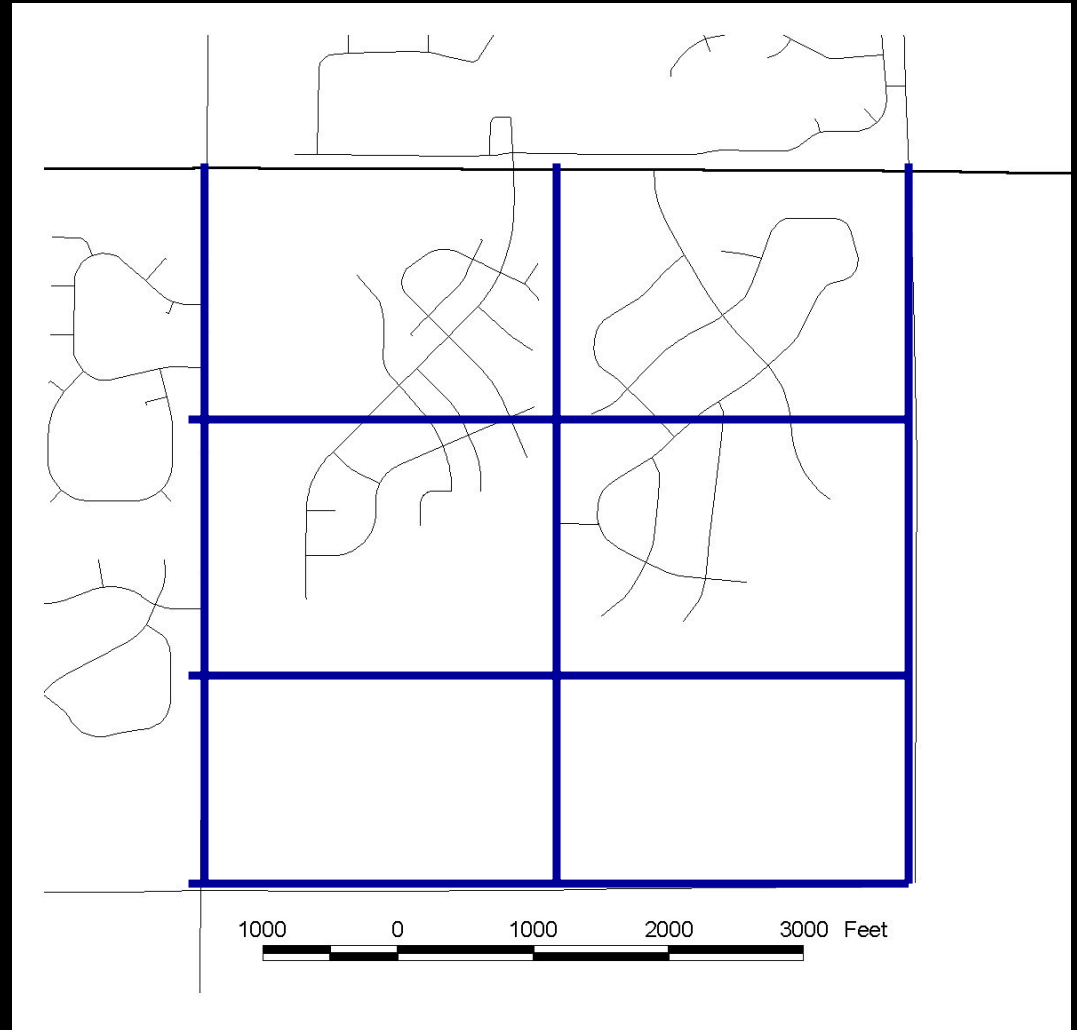


A 40-Year Look: Collectors



Lost Opportunity

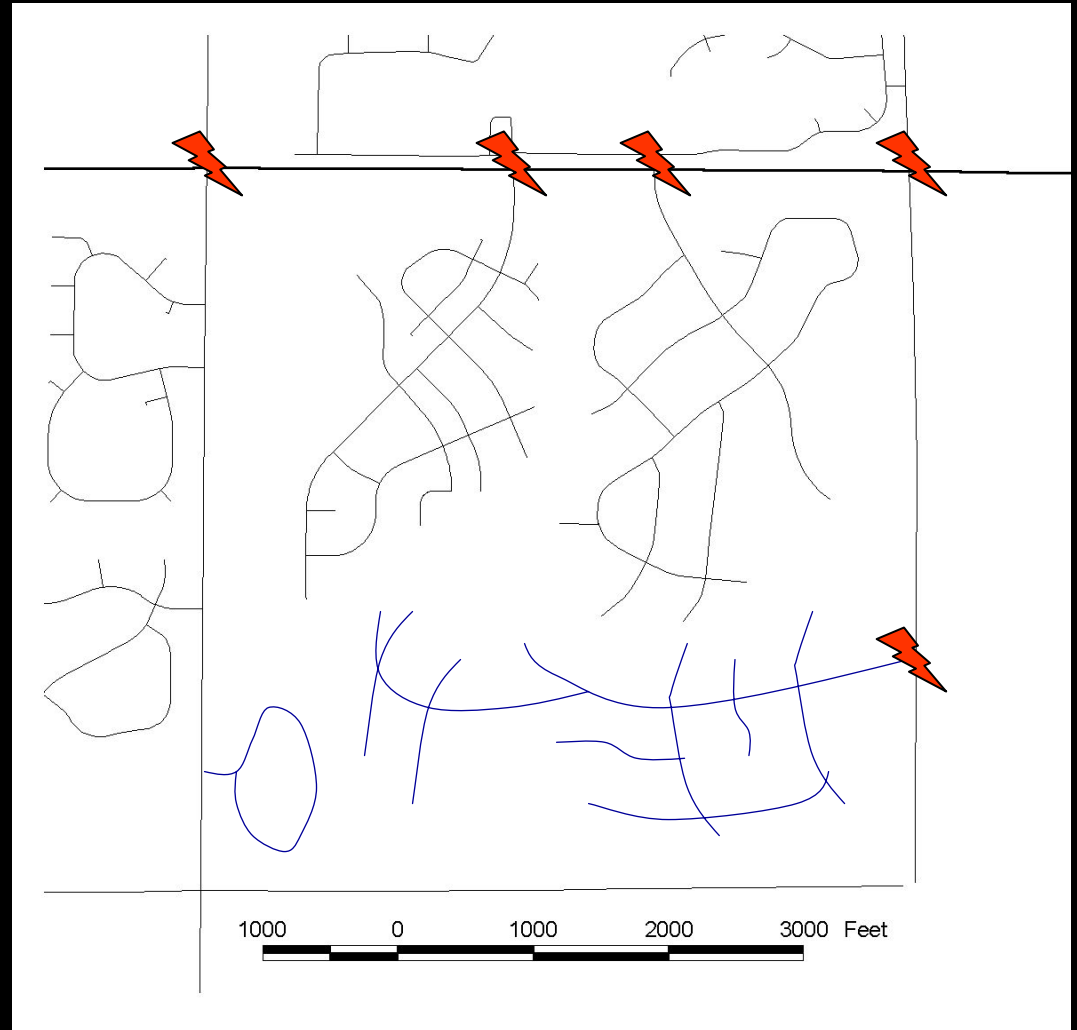
Pods take access from the arterial highway and collectors are no longer feasible.



Build Out

What will
actually
happen . . .

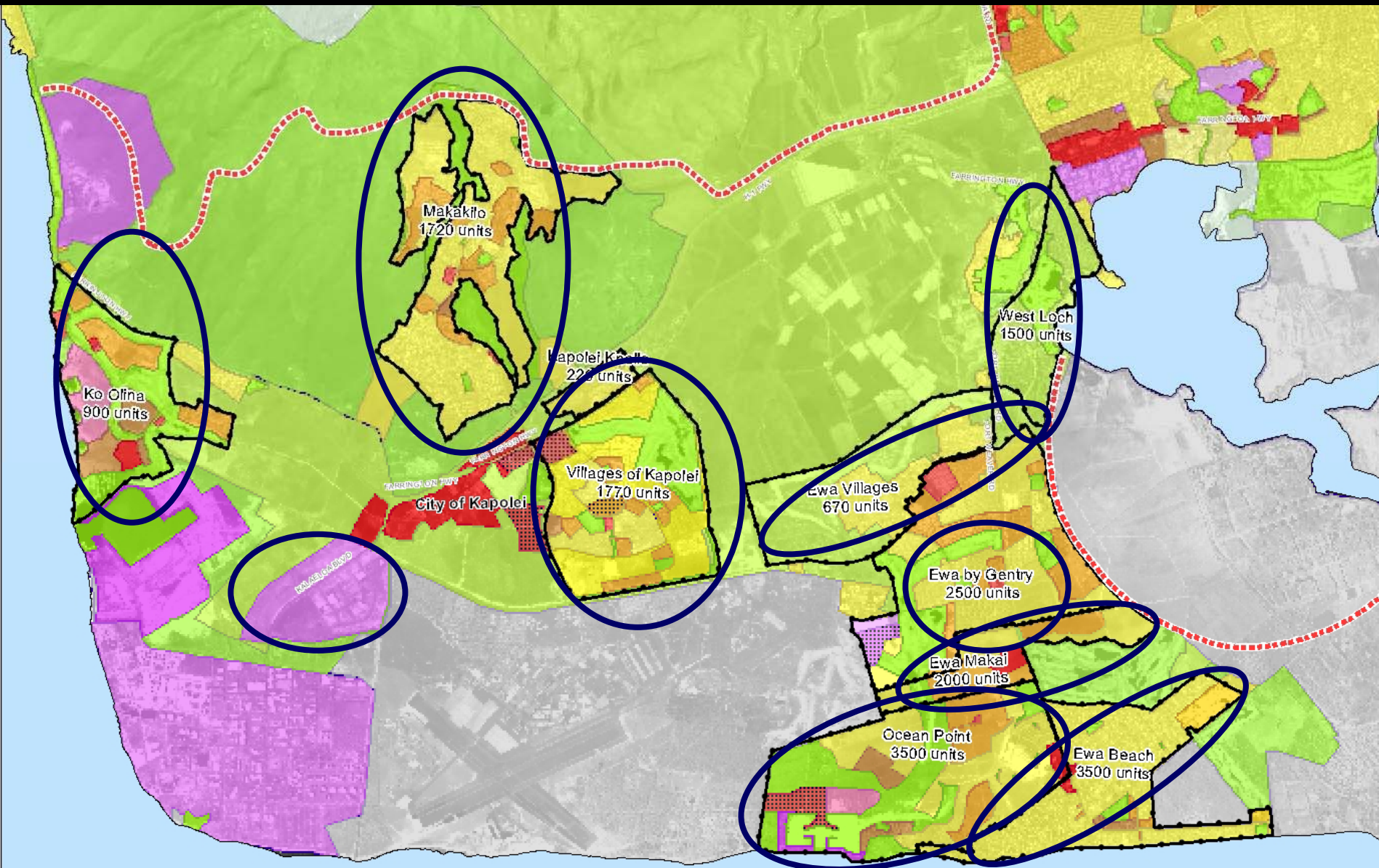
 Trouble
intersections



Honolulu



Honolulu (Ewa)





MAKAIWA
HILLS
(Proposed)

MAKAKILO

KAPOLEI EAST
(Proposed)

WEST
LOCH

KAPOLEI
VILLAGES

EWA
VILLAGES

EWA GENTRY

KO OLINA

KAPOLEI
CITY

EWA MARINA

EWA BEACH

CAMPBELL
INDUSTRIAL
PARK

KALAELOA



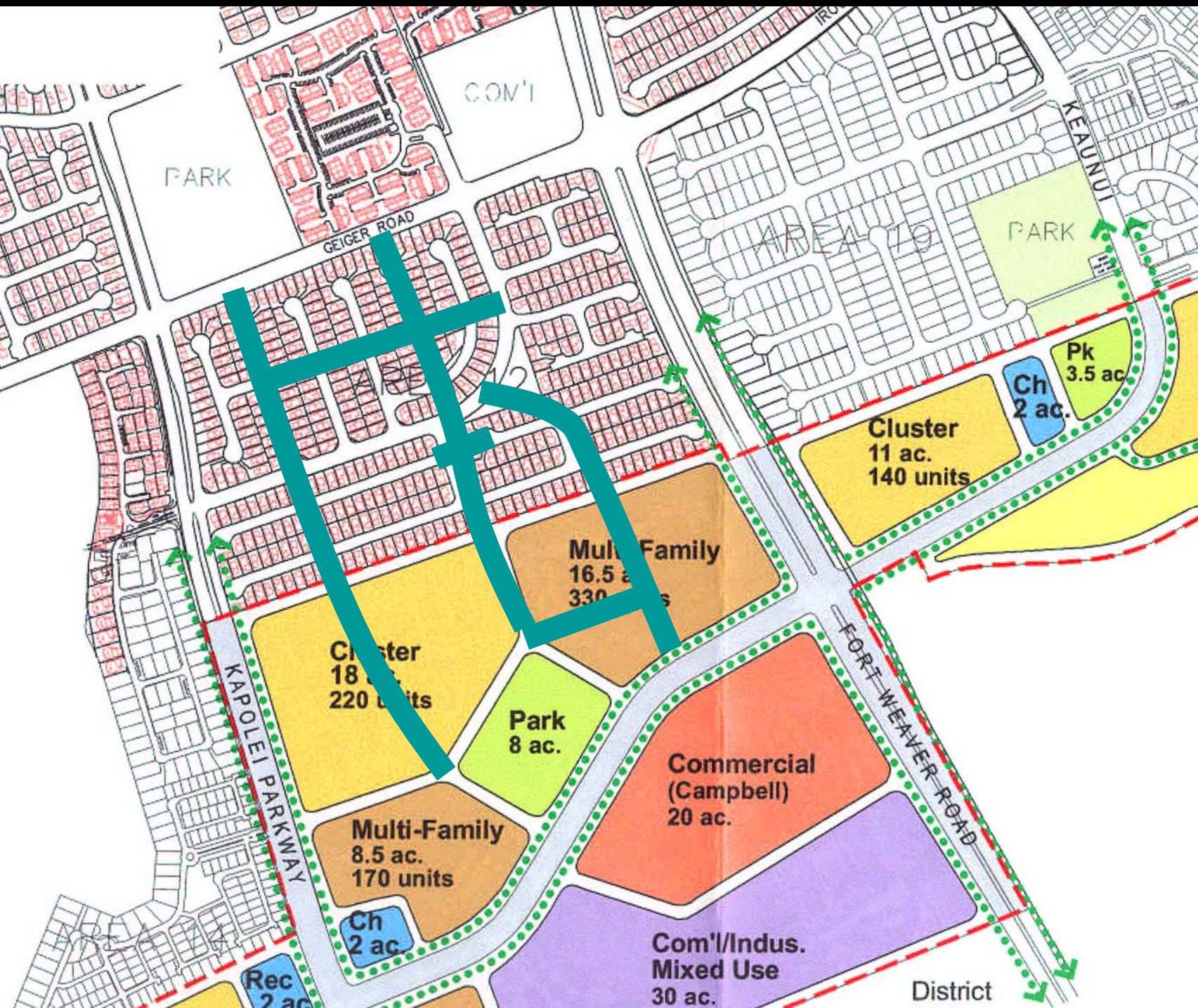
**WEST
LOCH**

Helber Hastert & Fee, Planners

td.

RAINAGE
(COURSE)
G-3

AREA 13



Mobility Impacts of Poor Connectivity

- Massive, congested arterials
- Increased VMT/household
- Transit voids
- Inactive living
- Poor emergency service access
- Reduced travel safety

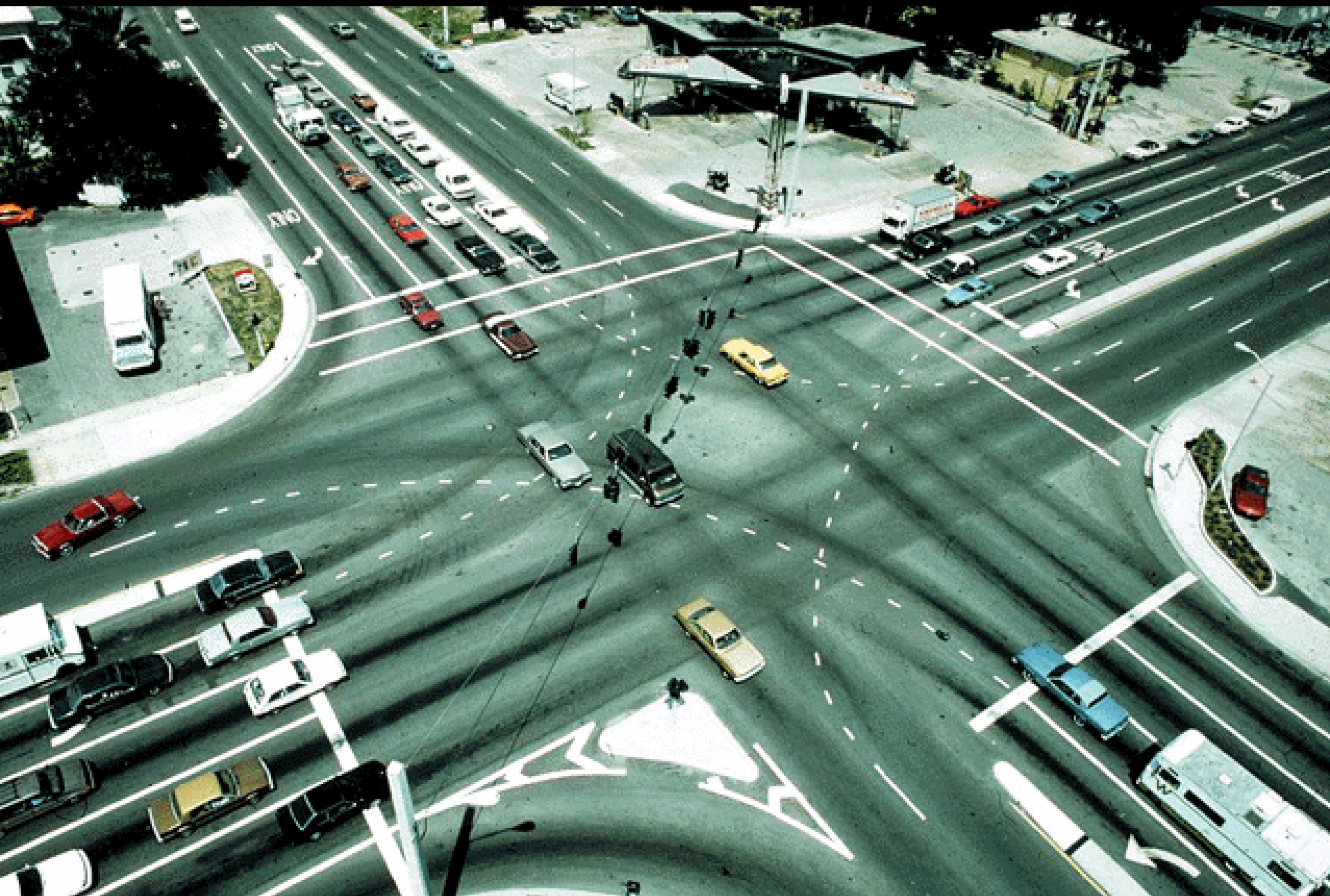


**We are forcing
bad design with
public policy**



To achieve a higher rate of
traffic flow, you plan
corridors

To achieve better mobility,
you plan connected networks



THE URBAN NETWORK: A NEW FRAMEWORK FOR GROWTH

By Peter Calthorpe

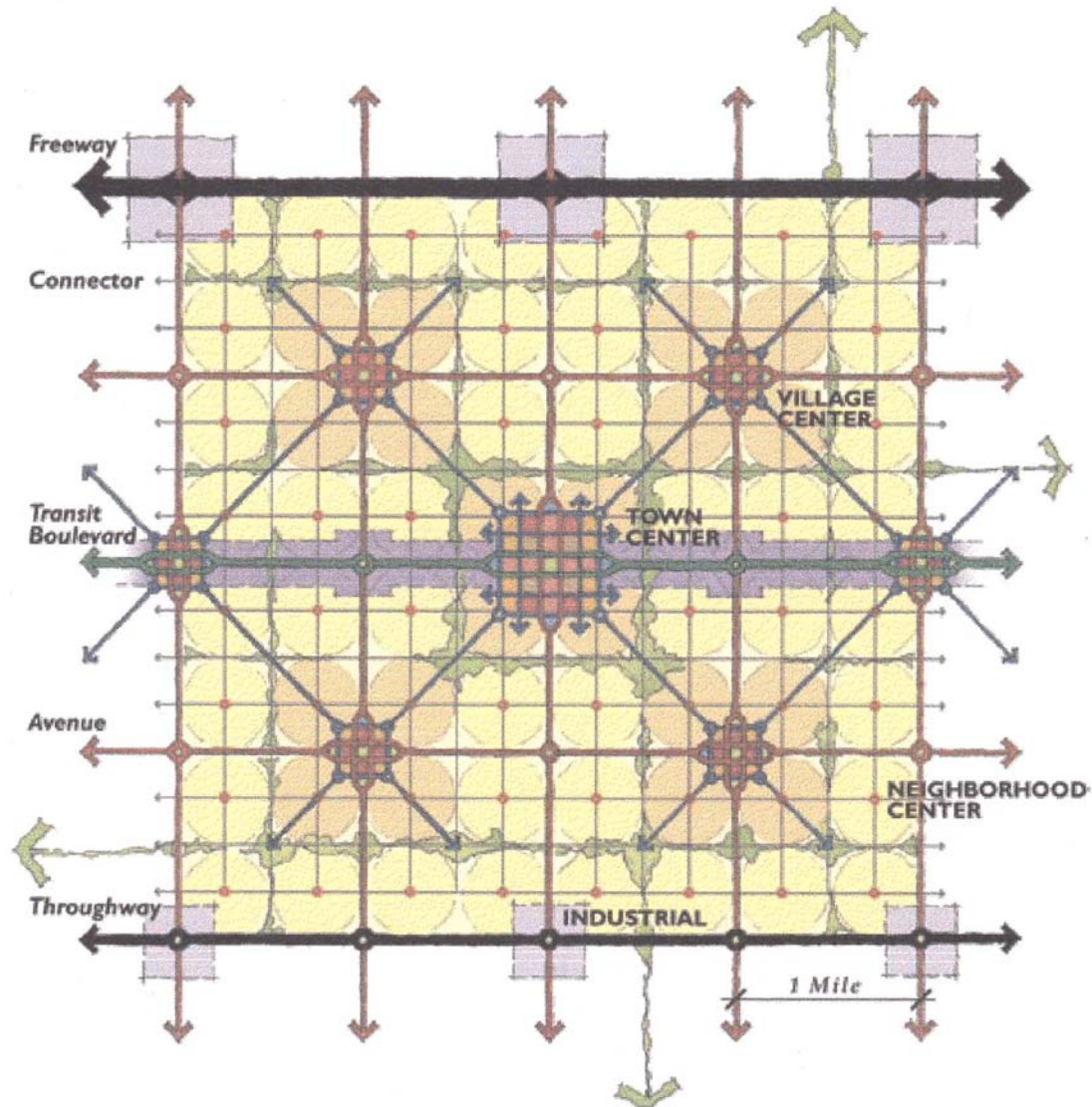


Illustration 1: The Urban Network

Other Impacts of Poor Connectivity

- **Disassociation from community**
- **Reduced economic activity**

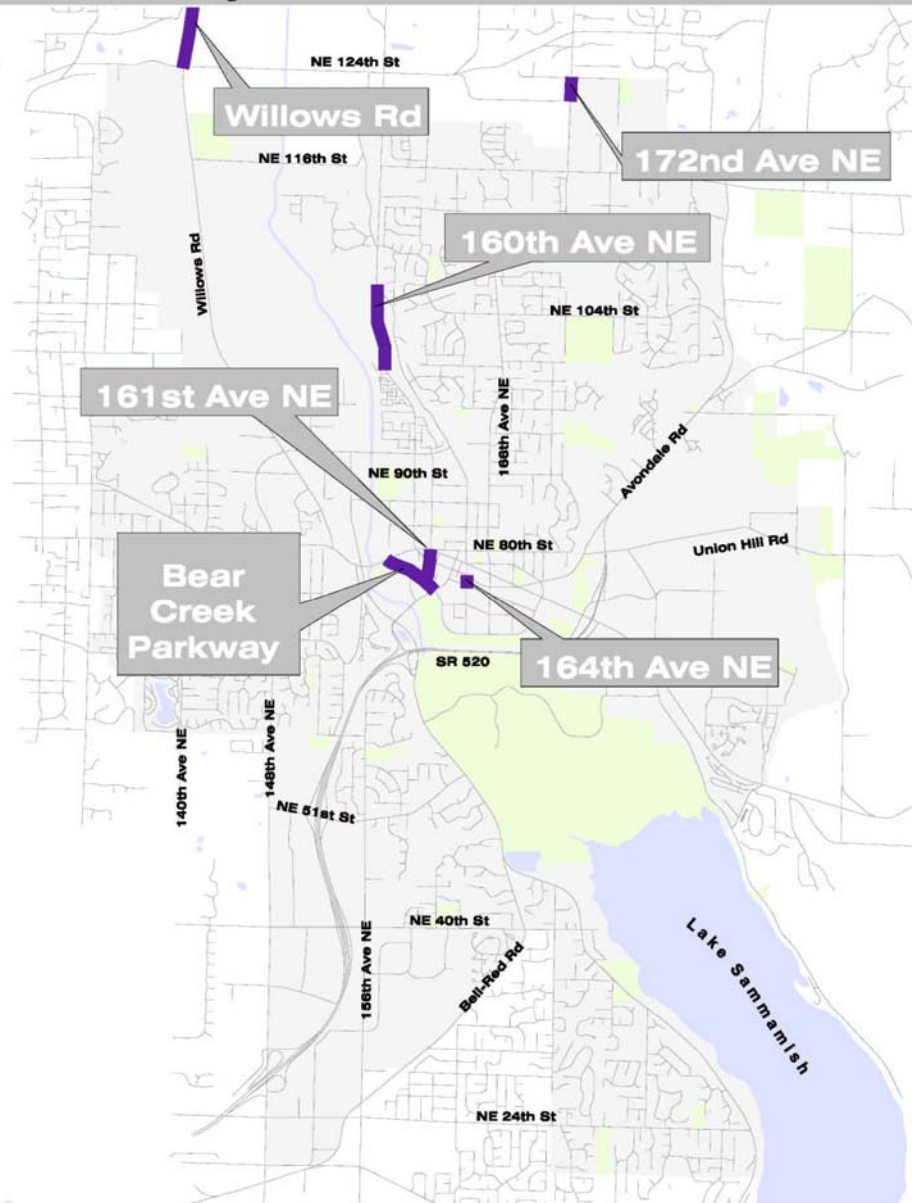
“The Geography of Nowhere”



c o n n e c t i n g
REDMOND



Roadway Connections



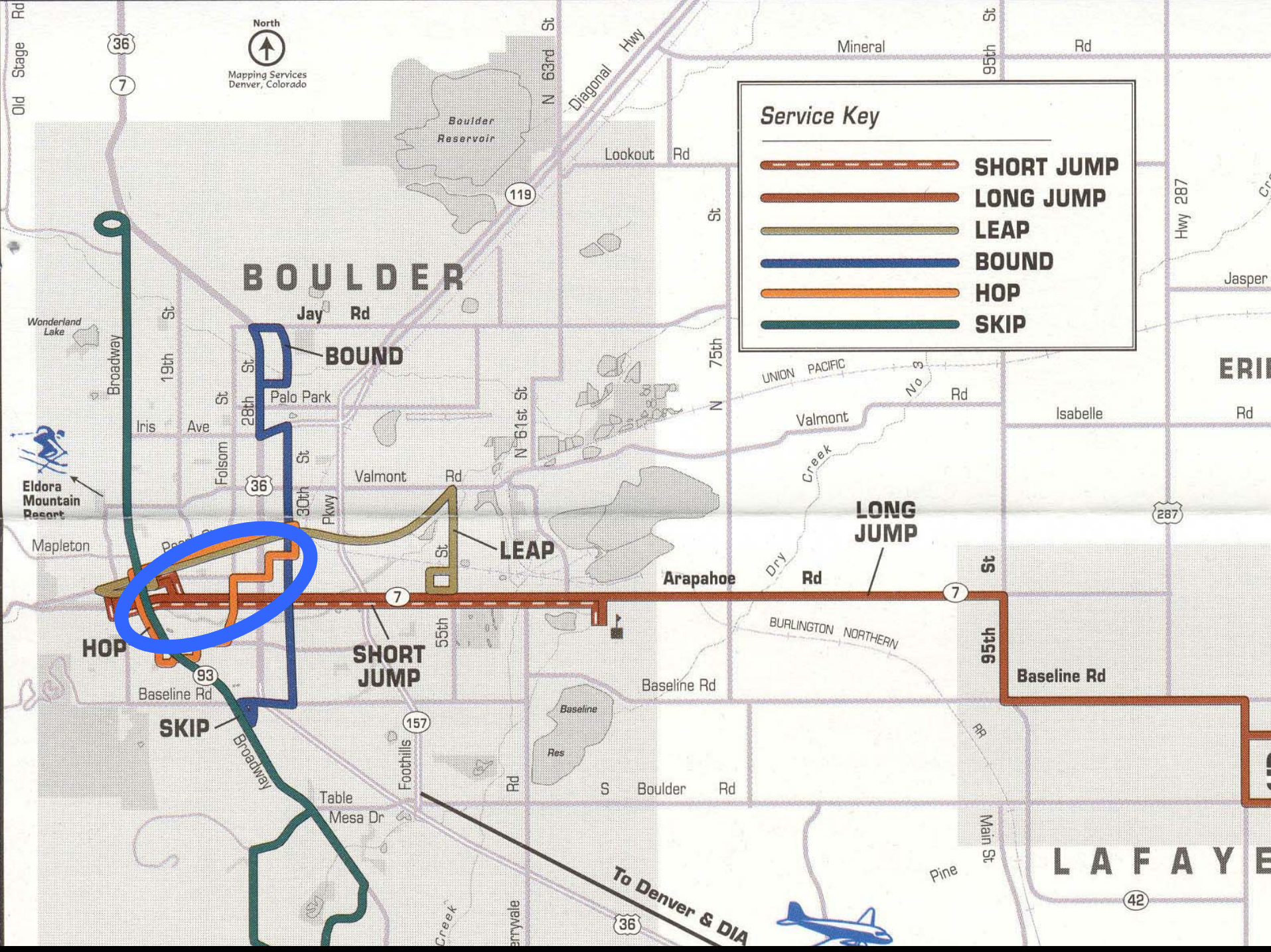


DOWNTOWN
UNIVERSITY - CROSSROADS

447.8282

384-FMH
COLORADO

hop



Service Key

-  **SHORT JUMP**
-  **LONG JUMP**
-  **LEAP**
-  **BOUND**
-  **HOP**
-  **SKIP**

BOULDER

BOUND

LEAP

LONG JUMP

HOP

SHORT JUMP

SKIP

To Denver & DIA

LAFAYETTE

Impact of Transportation on Economic Independence

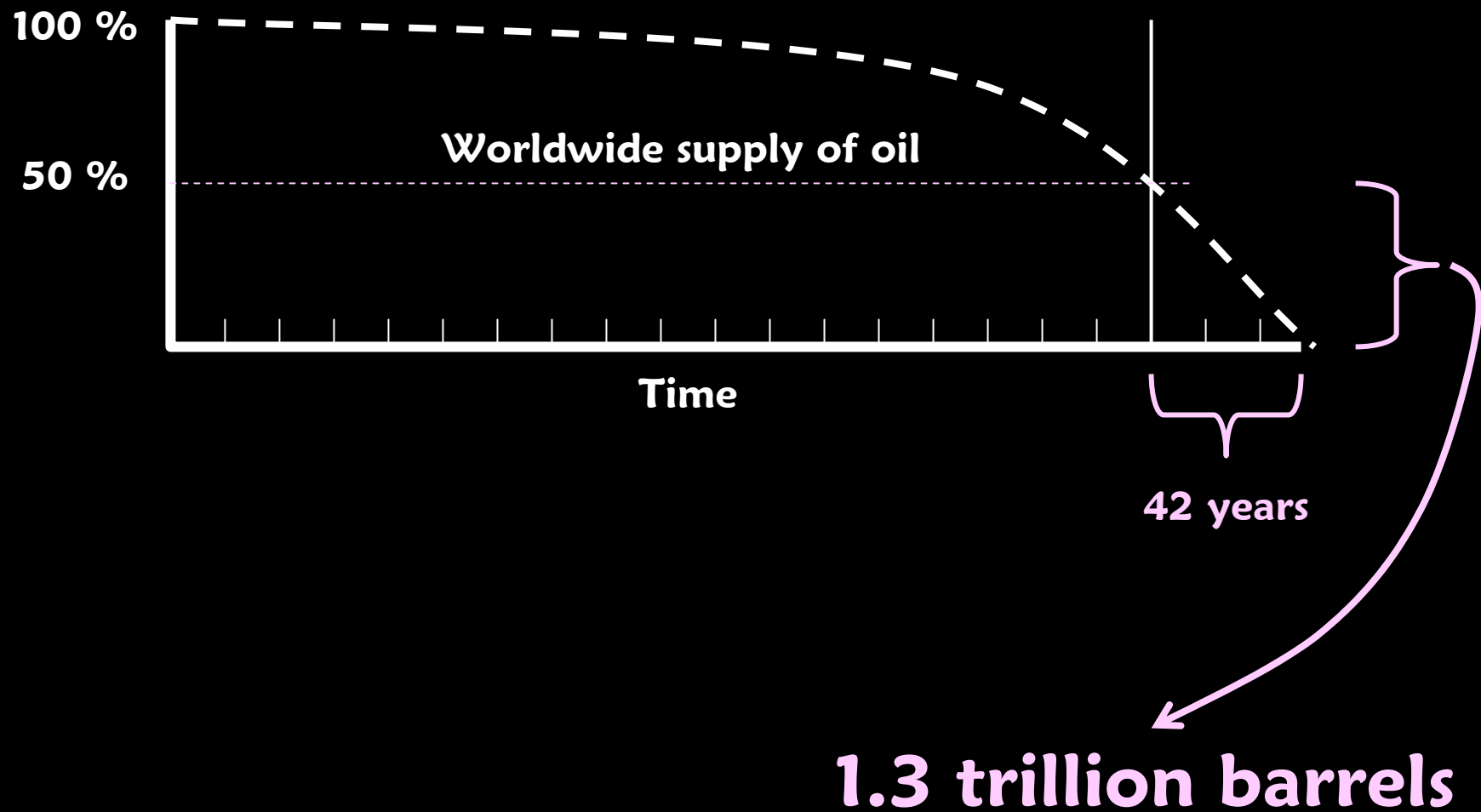






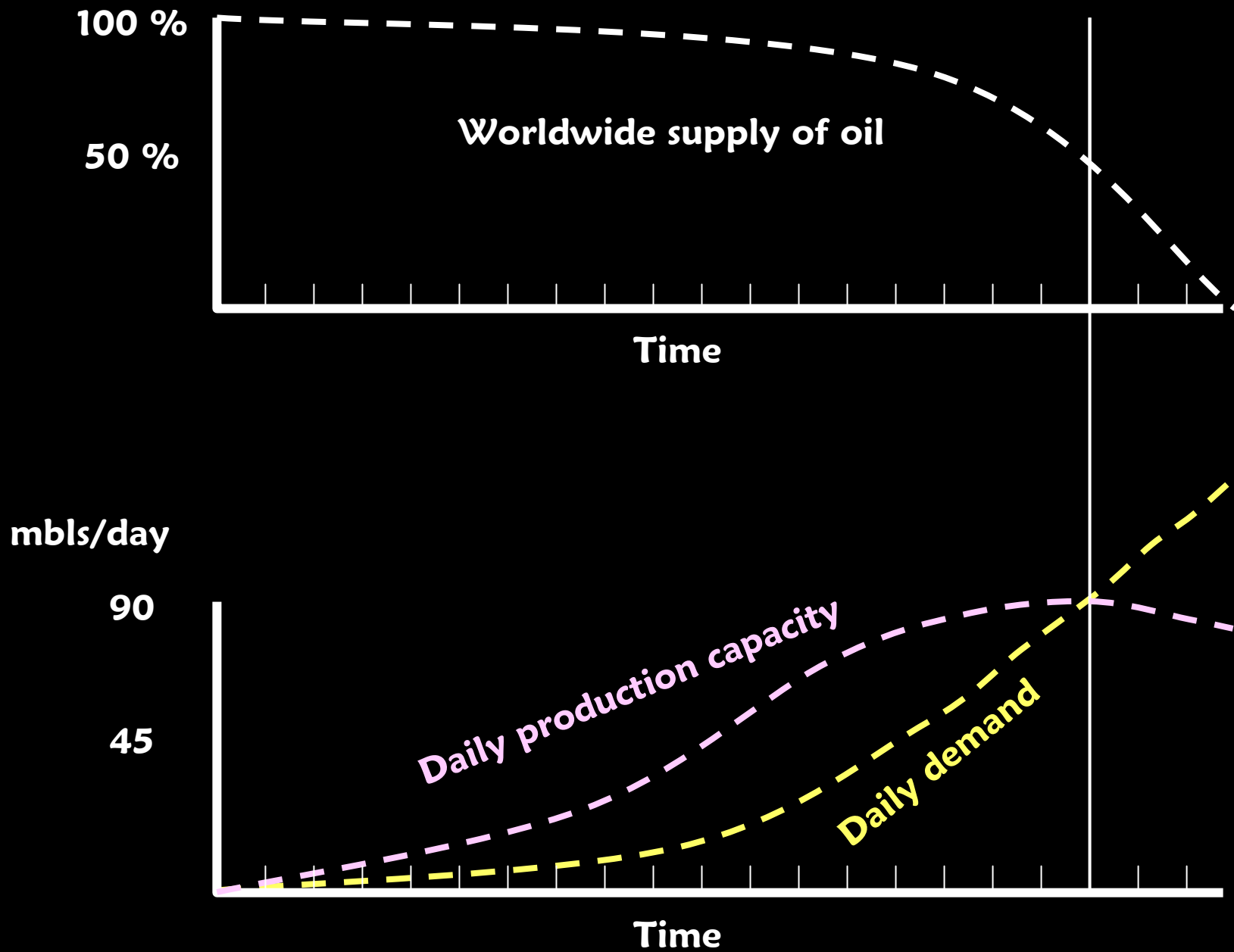
The end of the age of...

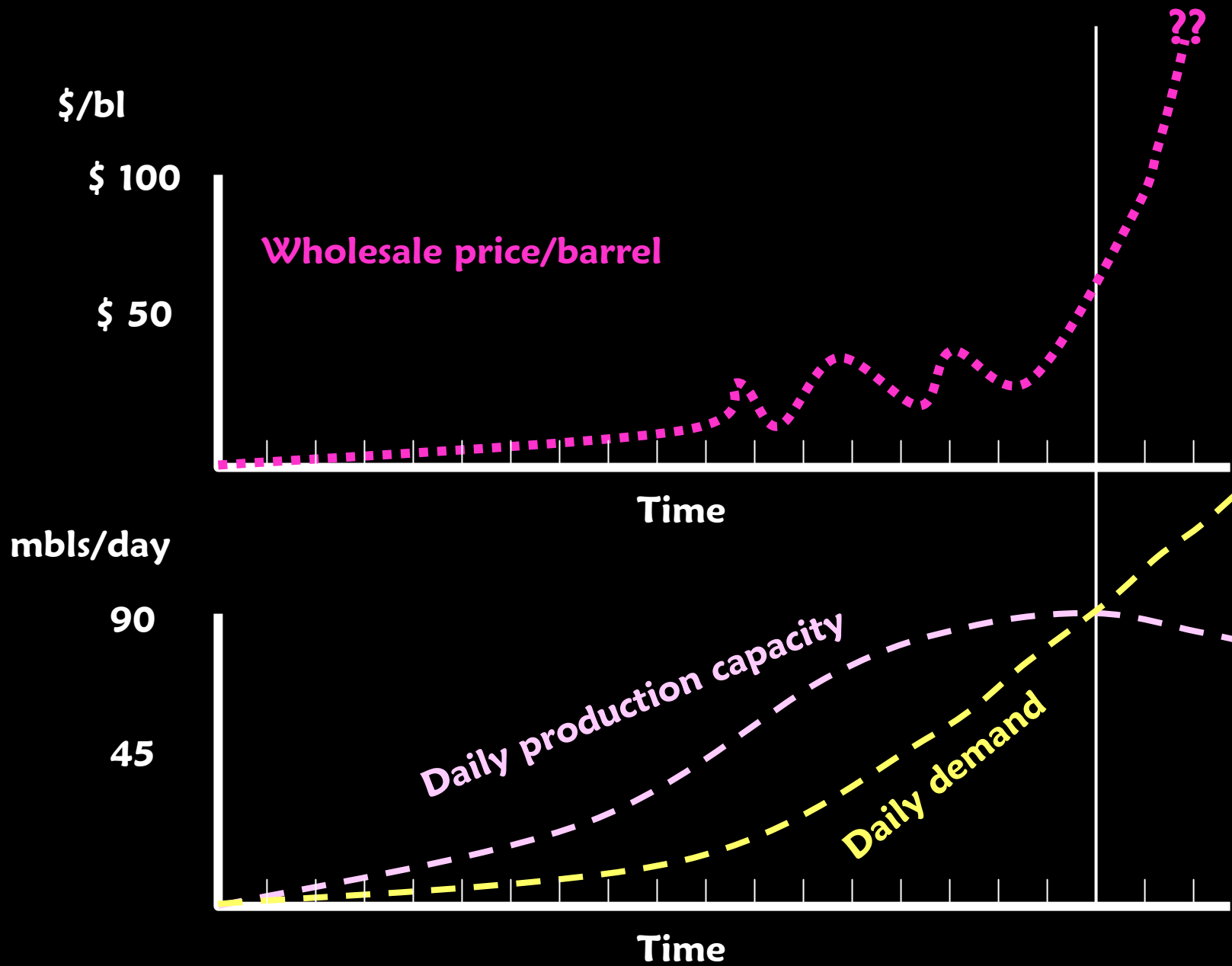
...cheap oil



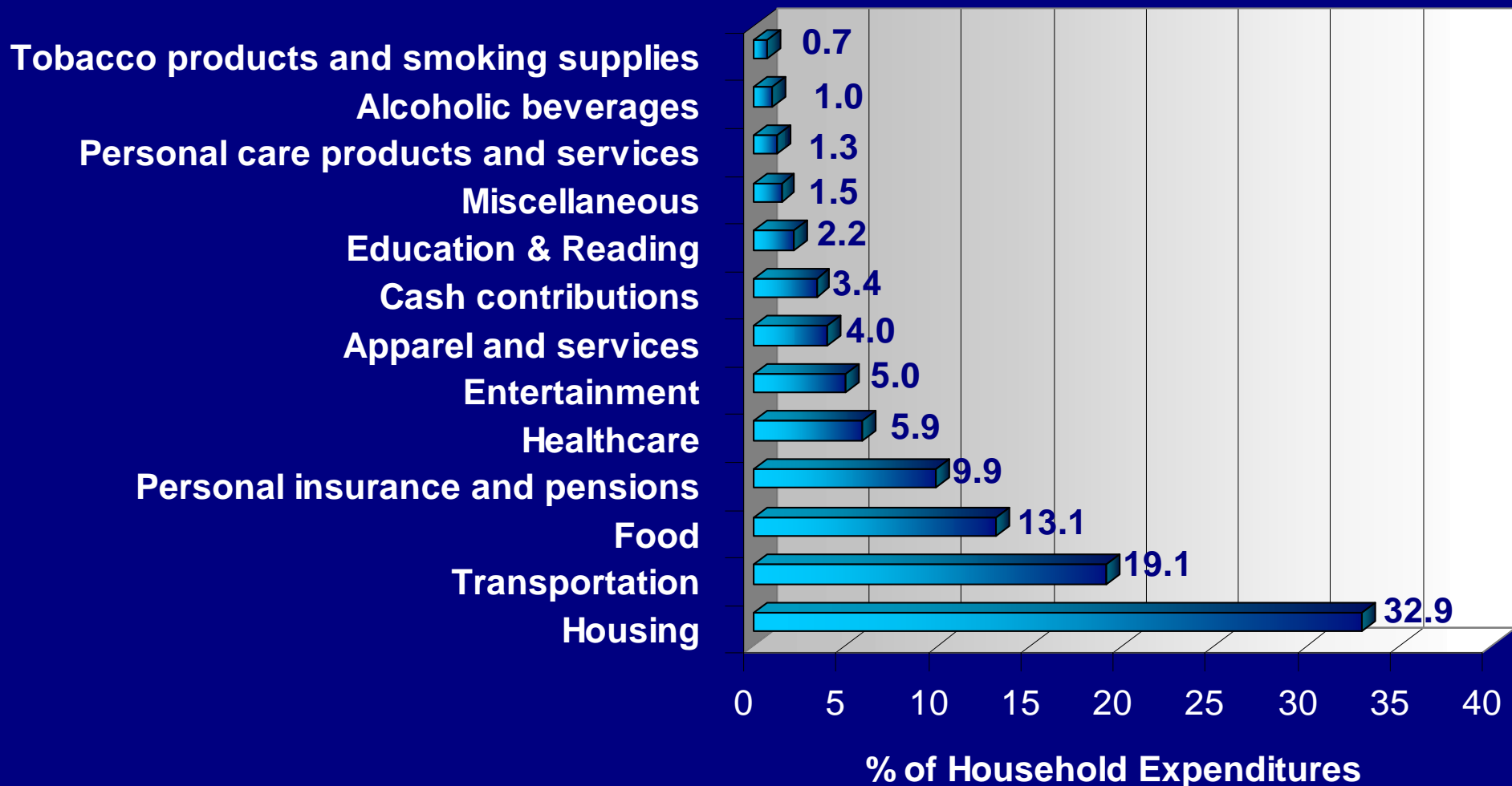
The stone age did not end...

...because we ran out of
stones





U.S Household Expenditures - 2003



Sustainable Transportation Systems:

- Enable families to reduce daily VMT without sacrificing income
- Provide a high degree of choice and flexibility in mode of travel
- Are resilient to economic fluctuations

Things We Are Not Doing to Ensure Future Resiliency

- Providing a collector/connector street network for bus transit & bikes
- Building pedestrian environments into residential & commercial development
- Planning for dense, mixed-use areas as part of local land use planning
- Providing rail envelopes in freeway & major arterial corridors
- Building multimodal streets

Review: what matters to us?

- Thriving Family
- Personal Freedom
- Safety
- Physical & Mental Health
- Community Engagement
- Economic Independence

An aerial photograph of a city skyline, likely New York City, featuring a prominent skyscraper (the Empire State Building) in the center. The image is hazy and serves as a background for the text.

Final Thought

**Great buildings alone cannot
make a great city...
...you must also have great
streets.**

Hundreds of Years:

200

400

600

800

1000

Transportation Corridors

Major Roads

Rail

Pathways

Architecture

Civic

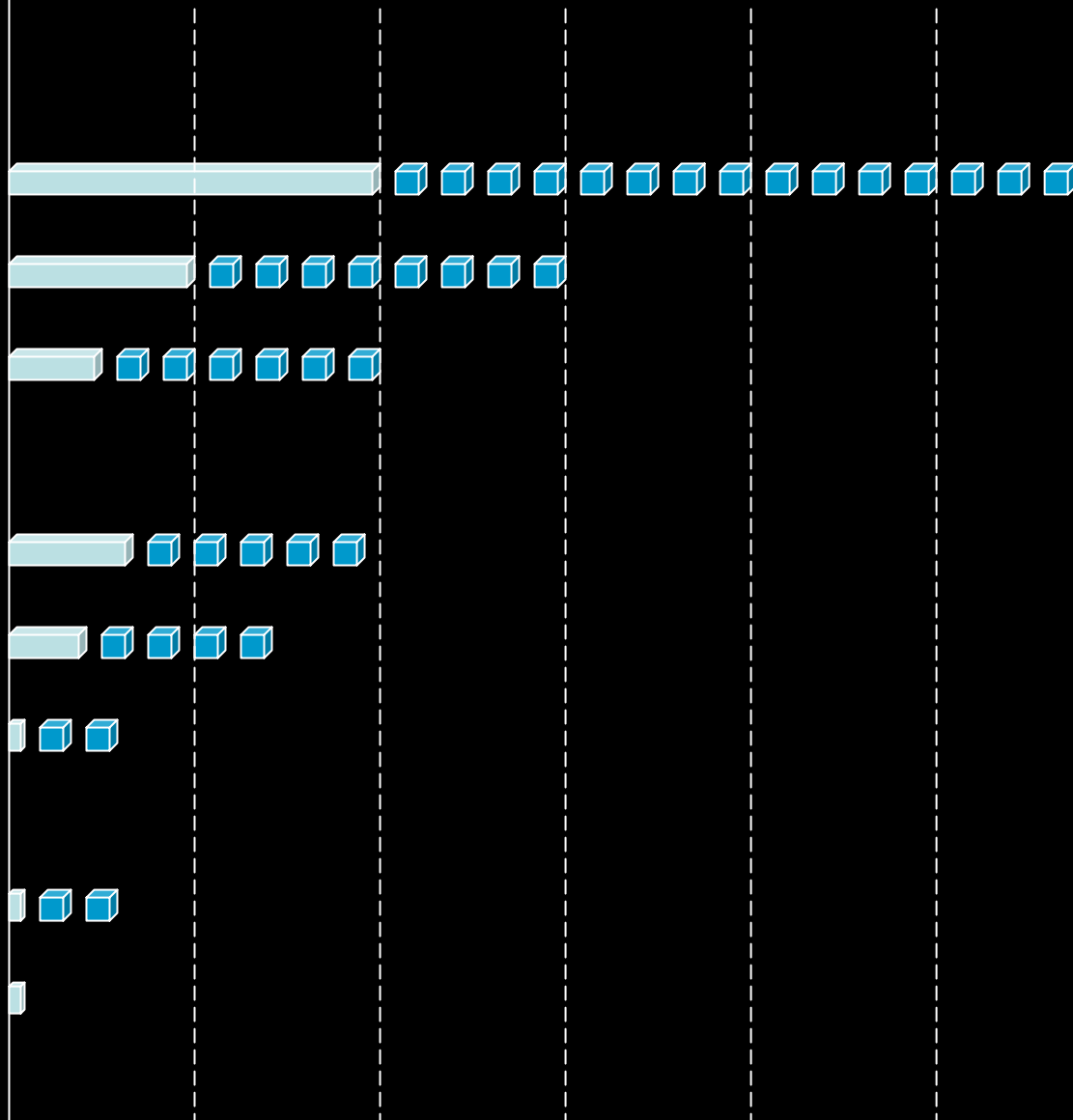
Residential

Commercial

Landscaping

Trees

Other Plantings



Thank You

www.charlier.org