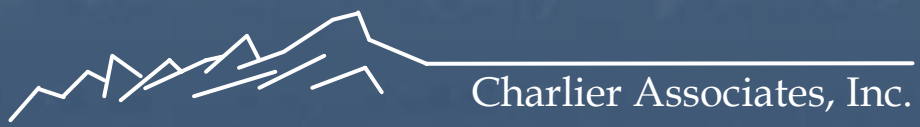
Smart Growth & Mobility

Implementing
Community Networks



Charlier Associates, Inc.

Outline

- Smart Growth Mobility Principles
- Concepts and Ideas
  - "memes"
  - "networks" "connectivity"
  - "choice" "multimodal streets"
- Case Studies
- Follow-up Information

10 Principles

1. Balanced Mobility
2. Dense, Connected Networks
3. Scale & Character of Streets
4. Limited Value of Traffic Demand Forecasts
5. Public Transit = Choice, Not Congestion Relief
6. Walking & Biking = Major Markets
7. Multimodal = Multimodal Streets
8. Sustainable = Flexible
9. Public Empowerment
10. Accountability, Monitoring & Reporting

10 Principles

1. Balanced Mobility
2. Dense, Connected Networks
3. Scale & Character of Streets
4. Limited Value of Traffic Demand Forecasts
5. Public Transit = Choice, Not Congestion Relief
6. Walking & Biking = Major Markets
7. Multimodal = Multimodal Streets
8. Sustainable = Flexible
9. Public Empowerment
10. Accountability, Monitoring & Reporting

Why are these principles so difficult to implement?

misinformation

disinterest

malfeasance

evil

misinformation

disinterest

malfeasance

evil

how does misinformation propagate and become universal?

First Four Principles

1. Balanced Mobility
2. Dense, Connected Networks
3. Scale & Character of Streets
4. Limited Value of Traffic Demand Forecasts

1

Transportation systems should serve all three elements of mobility:

- Access;
- Circulation; and,
- Travel.

Mobility Elements

Travel –	Ability to move over distances, connecting regions
Circulation –	Ability to move about within areas, connecting land uses
Access –	Ability to enter and make use of specific sites

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…

…travel

Built for…

…circulation

Built for…

…access

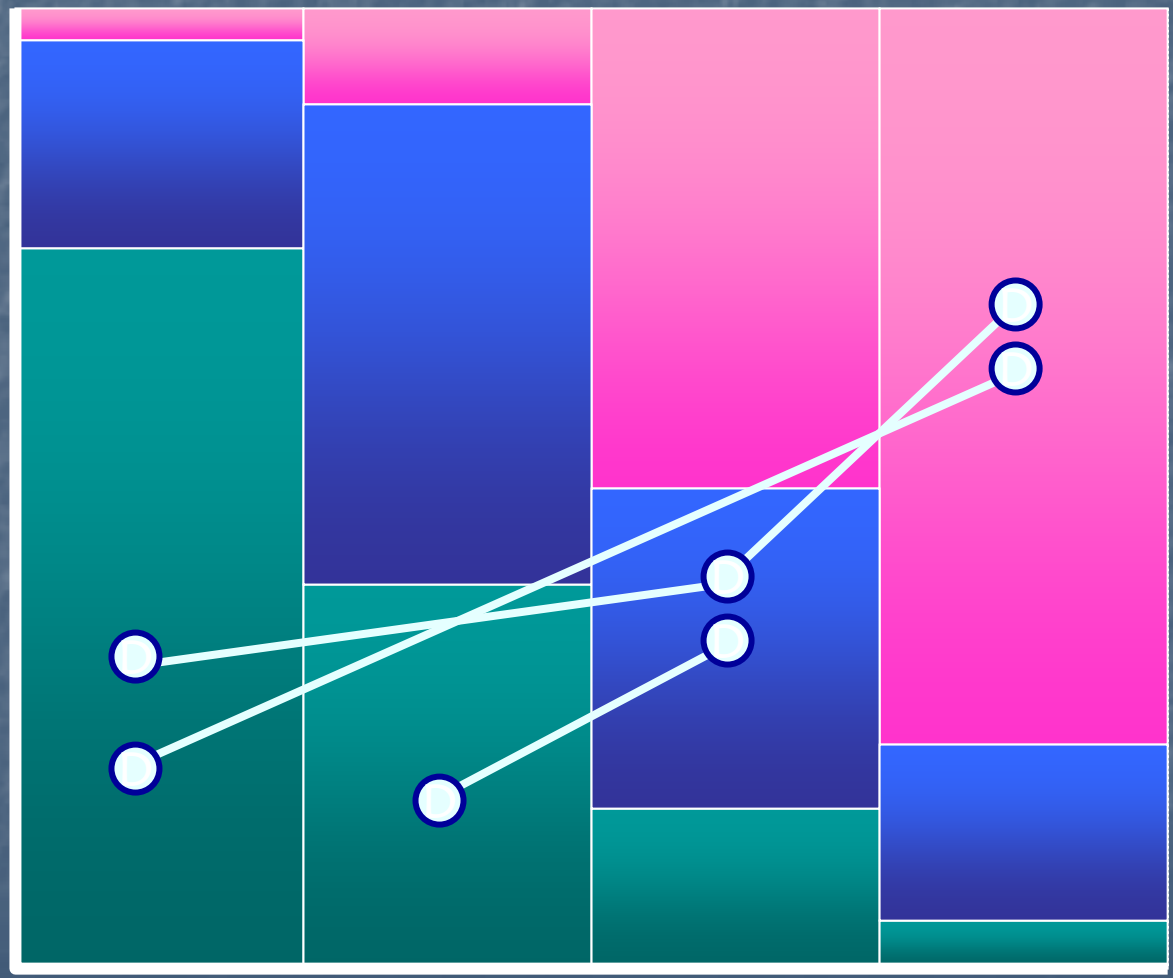
We build
too much for travel,
and
too little for
circulation and access.

Strategic Balance

TRAVEL

CIRCULATION

ACCESS



2

A well-connected network of narrow streets provides better mobility and is safer and more efficient than a poorly-connected network of wide streets. The inexorable widening of arterials represents a bad investment. Freeways have a role to play; multi-lane arterials (more than four general purpose lanes) normally do not.

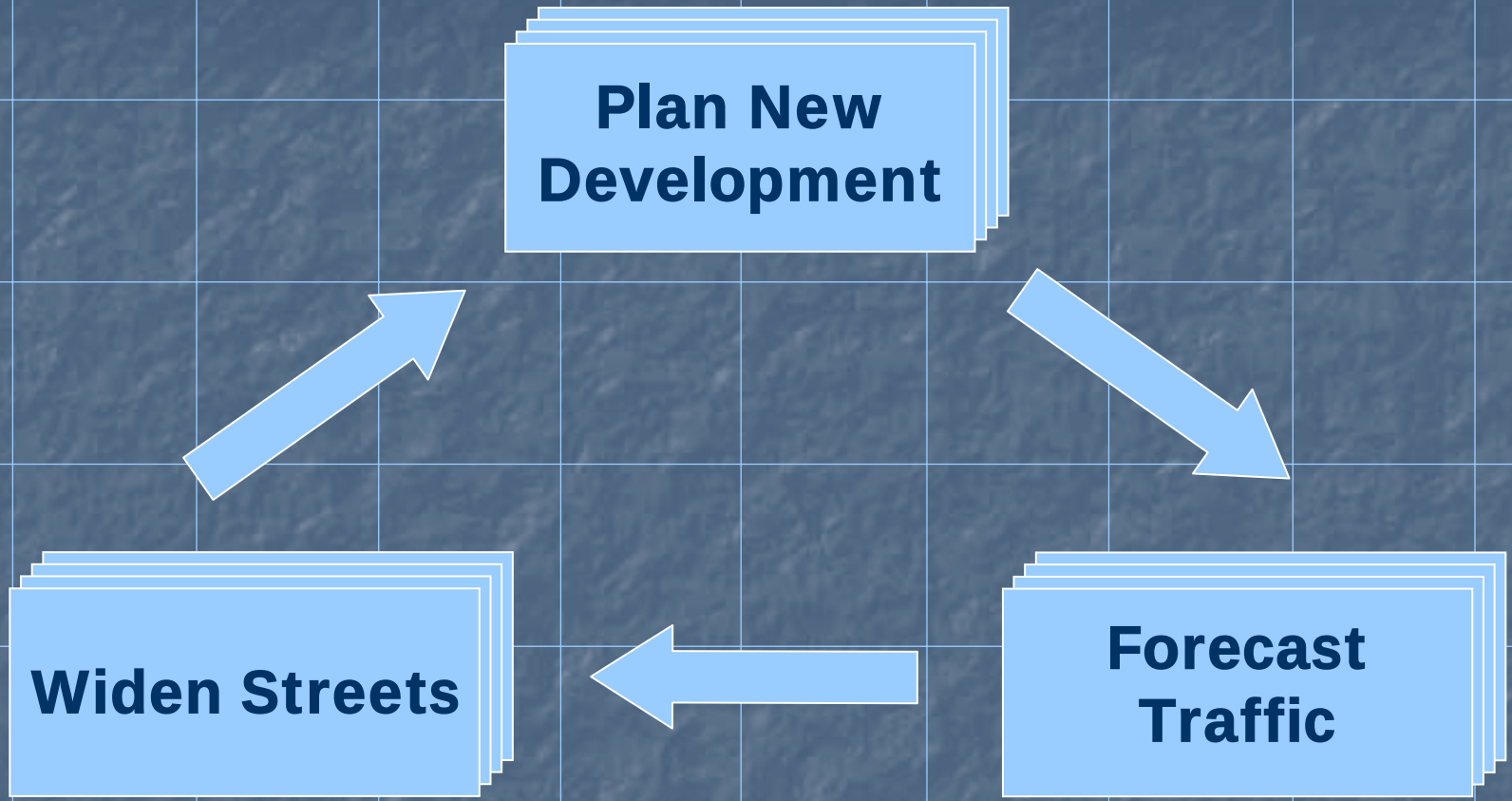
…why is bad design so popular?

3

The design of streets should reflect the scale and character of abutting and nearby land uses. It is rarely justifiable to build a street or roadway that detracts from the value of, or forces undesirable changes in, abutting land uses.

4

Traffic forecasting is of limited value in designing streets. Virtually all of the details of street network and facility design should be based on planned community form and desired character of abutting land uses. Basing street design on traffic demand forecasts is self-fulfilling and self-defeating.


Plan New Development
Forecast Traffic
Widen Streets

First Four Principles

1. Balanced Mobility
2. Dense, Connected Networks
3. Scale & Character of Streets
4. Limited Value of Traffic Demand Forecasts

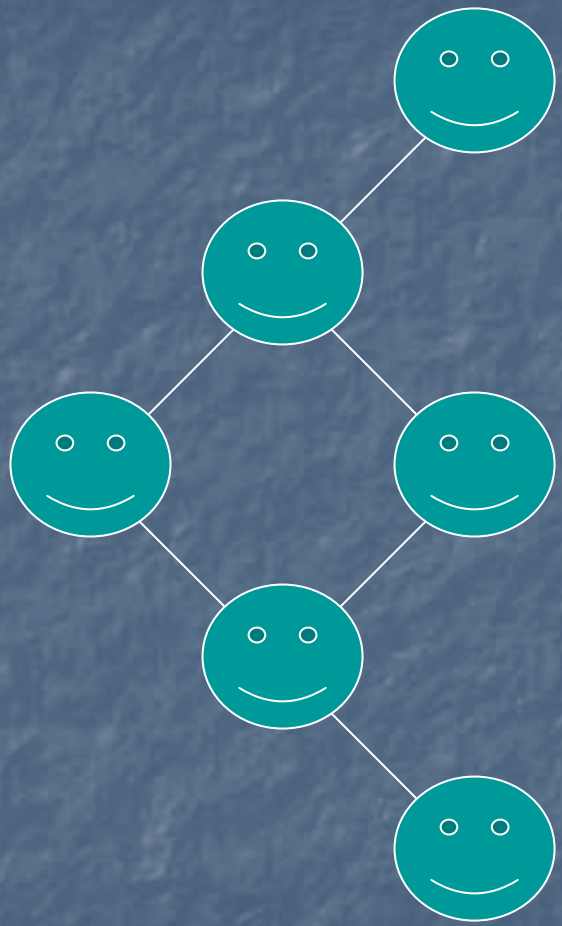
Clear Objectives + Good Techniques = Desired Outcomes

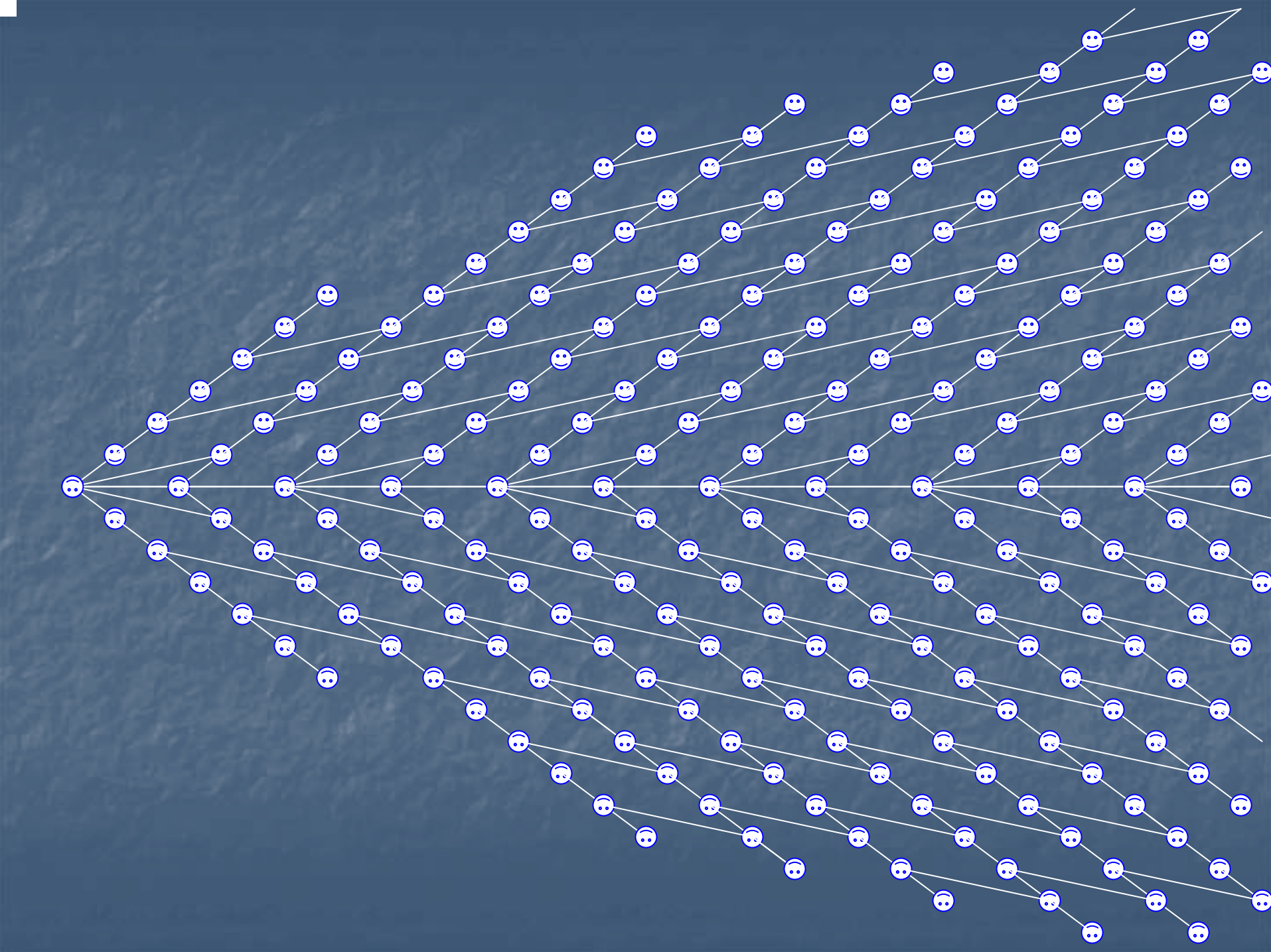
Why are we destroying our communities with our streets?

“memes”

def.
"meme" -- A unit of cultural information, such as a cultural practice or idea, that is transmitted verbally or by repeated action from one mind to another.

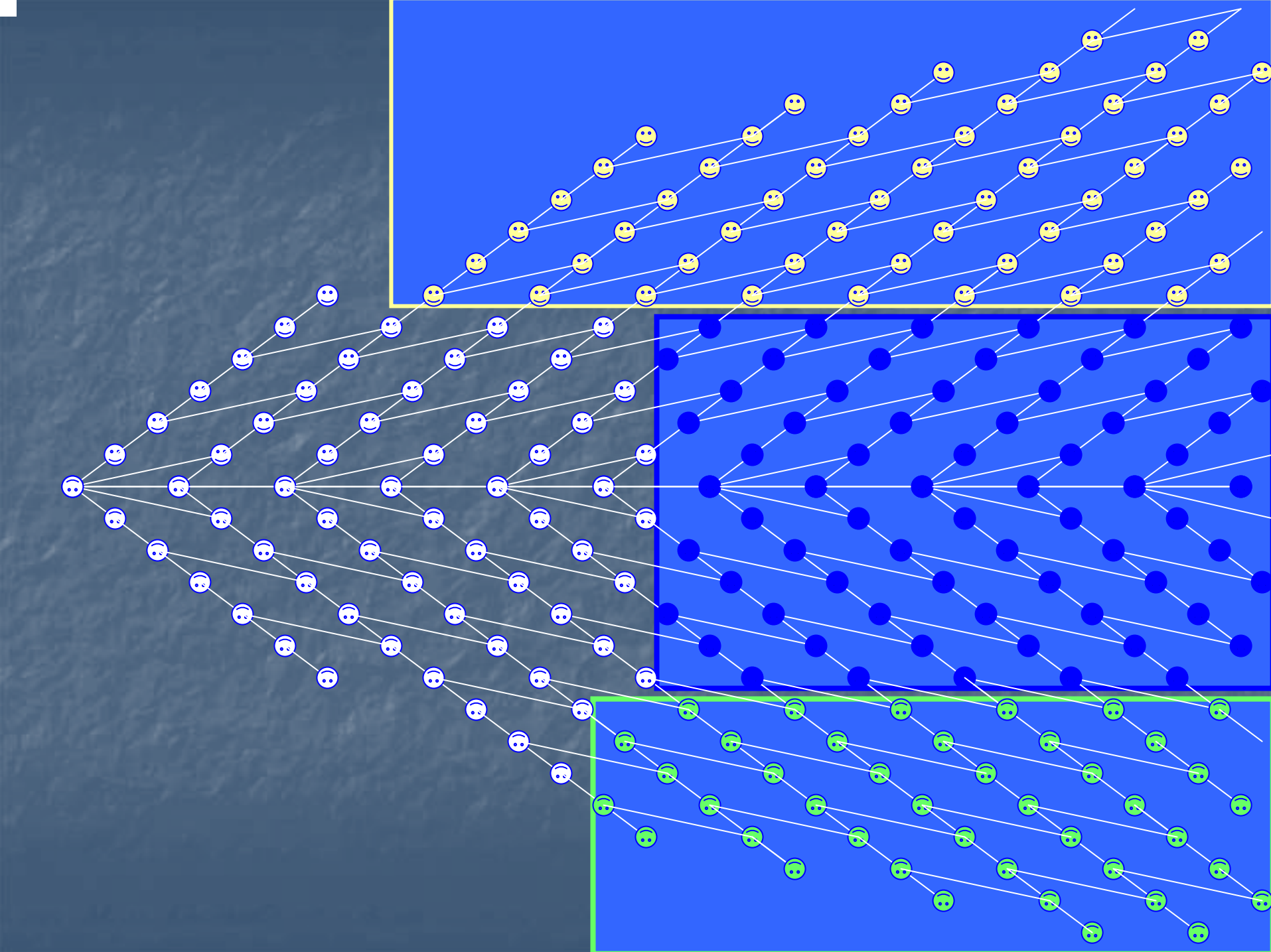
Propagation and evolution of memes





Memes Can Be…

- Accurate and useful
- Accurate in some situations, wrong in others
- Carried over from a time when they were relevant – to a time when they are not



Example

A Good Meme

(it's true)

"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

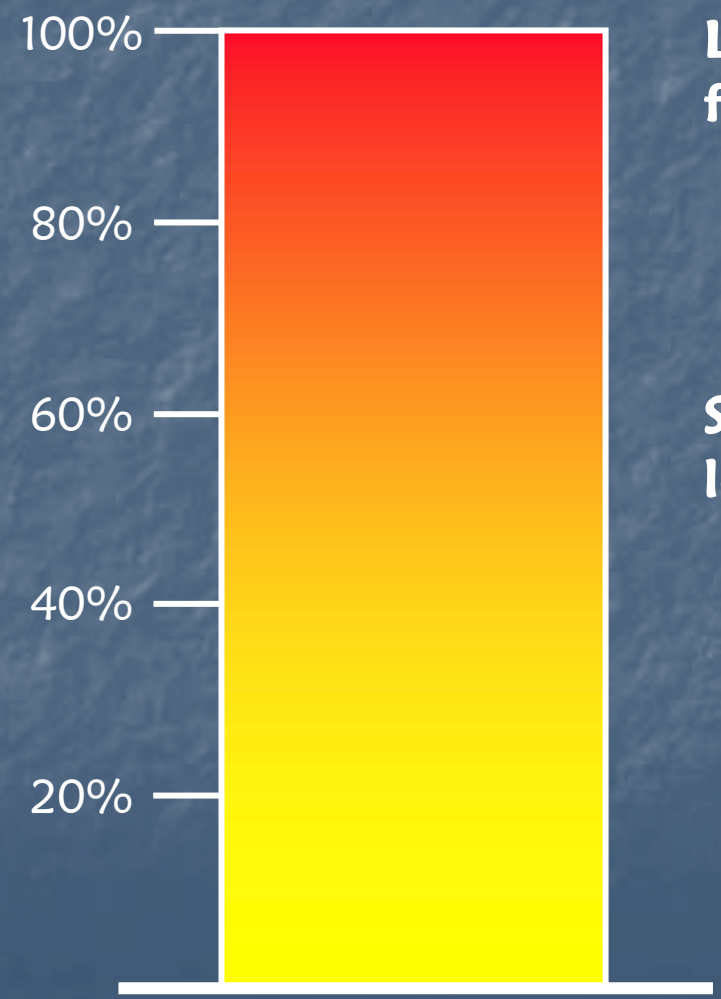
Changes in mode of travel ..... < 6 months

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…



Long Term:
five to 10 years

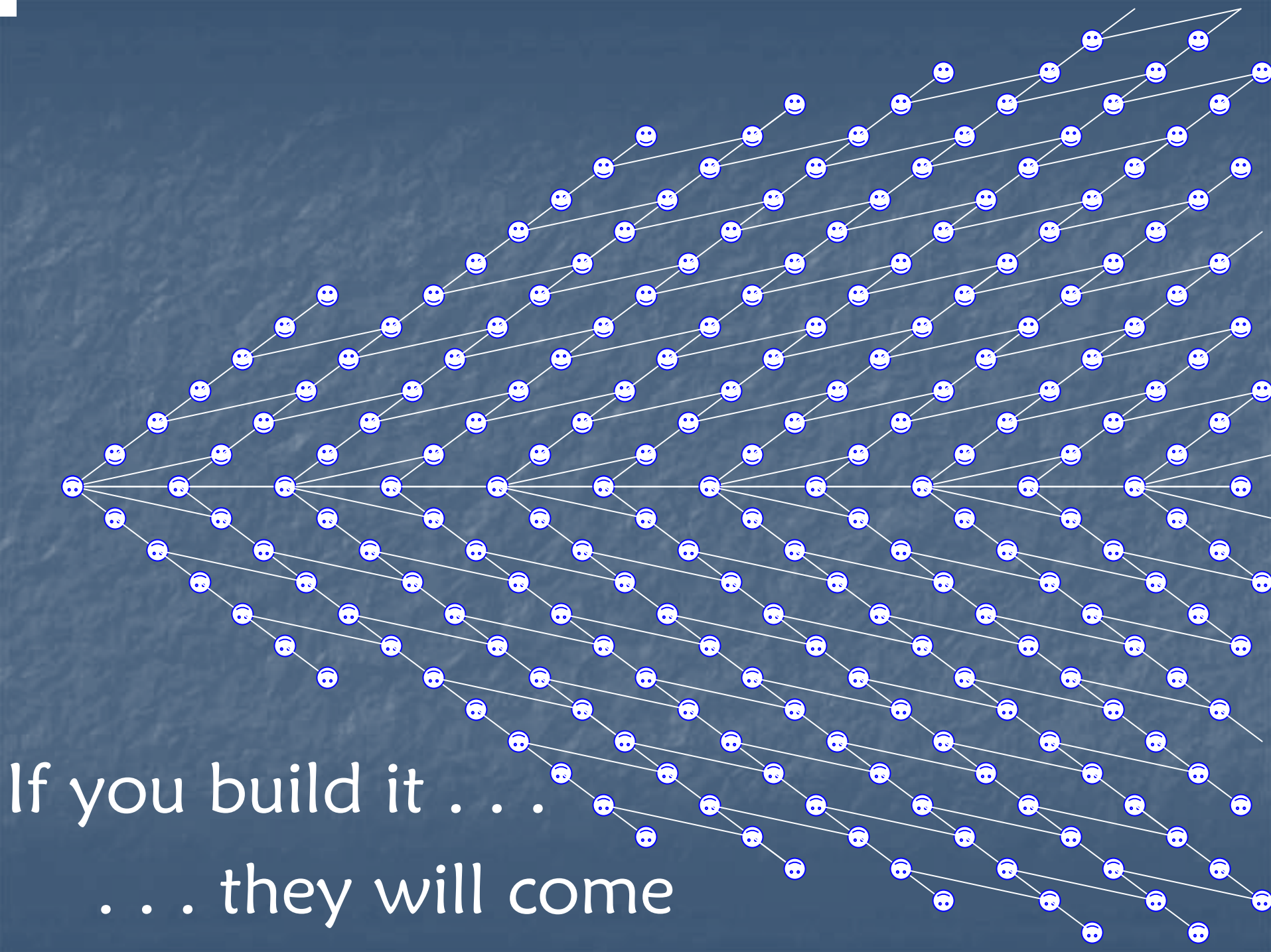
Short Term:
less than five years

What widely-shared meme is used to describe this phenomenon?

(hint: it's from a movie)

If you build it . . .

. . . they will come


If you build it . . .
. . . they will come


BAD MEMES

1. Street design should be based on traffic demand forecasts
2. We must choose between investing in streets or investing in “alternative modes”
3. The purpose of transportation investment is “congestion relief”
4. Your city should be “pedestrian friendly”

Street design should be based on traffic forecasts

Corollary A: increased traffic demand requires bigger streets

Nothing useful is achieved by the inexorable widening of community streets.

THE URBAN NETWORK:
A NEW FRAMEWORK FOR GROWTH

By Peter Calthorpe

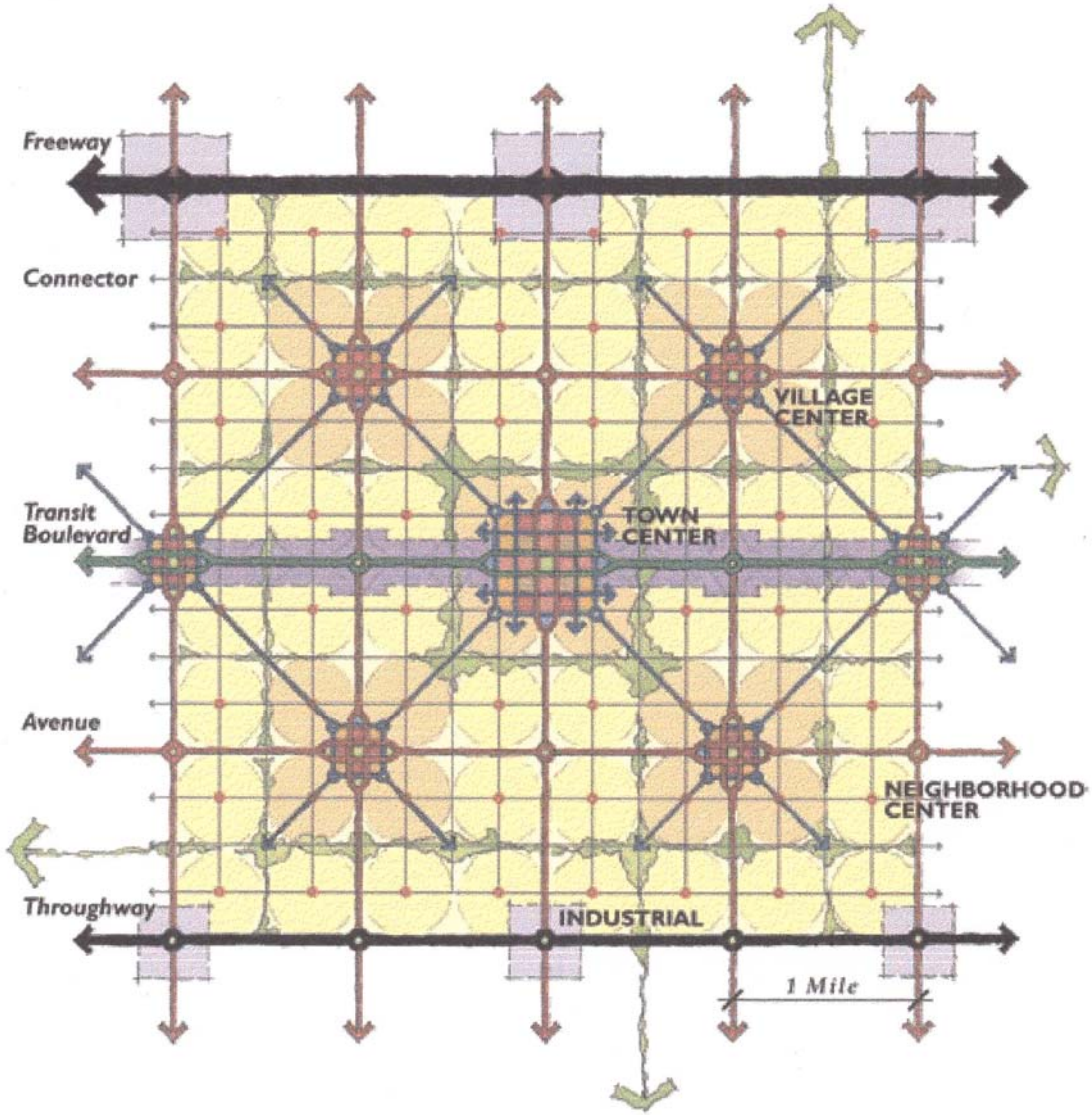
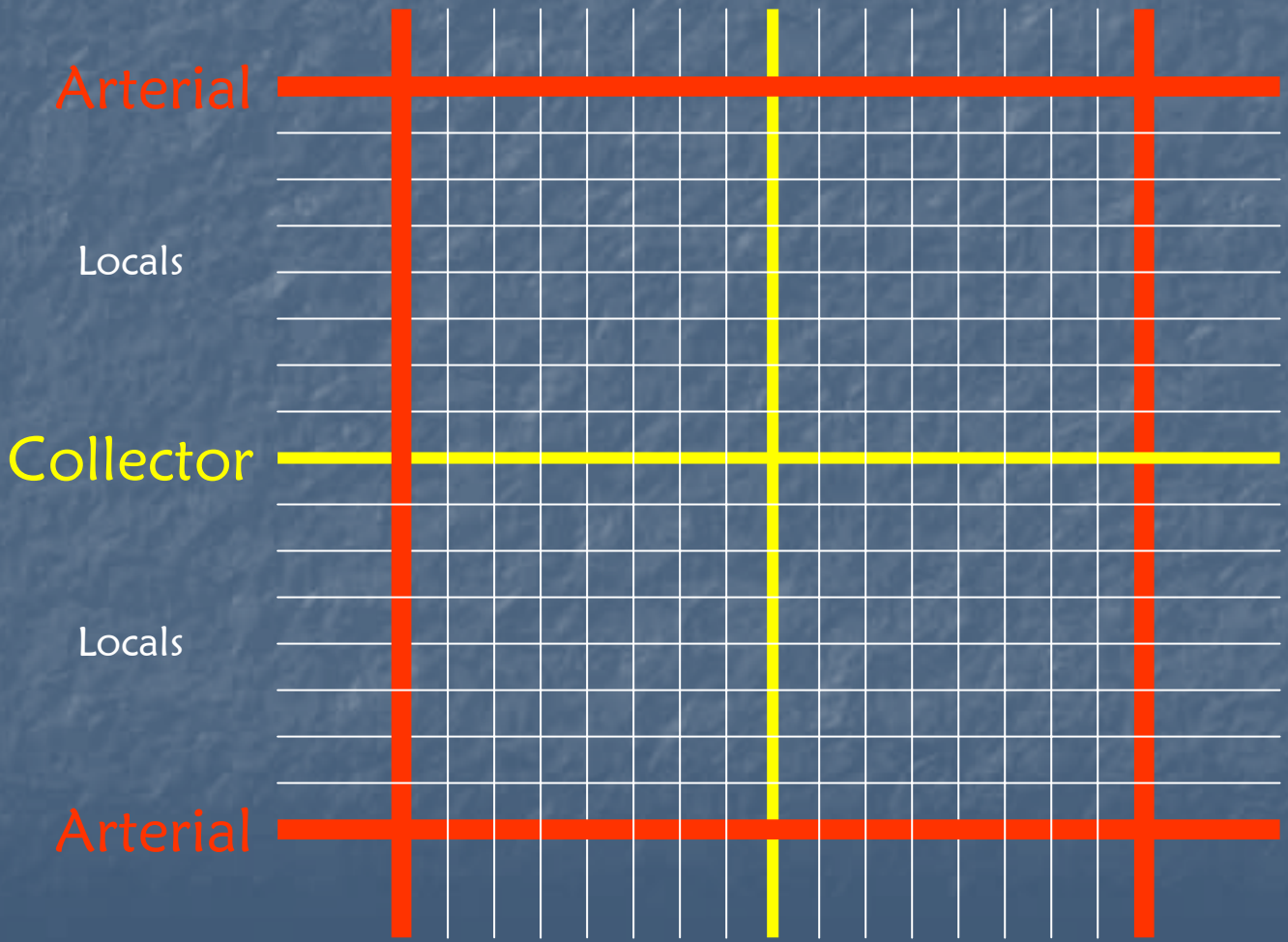


Illustration 1: The Urban Network

Traditional One Mile Grid

(oversimplified)



Street design should be based on traffic forecasts

Corollary B: a street with a higher LOS rating is a better street

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

The design of transportation corridors has a profound effect on the character of abutting land uses.

Street design should be based on traffic forecasts

Corollary C: the purpose of transportation investment is congestion relief

Average End-to-End Travel Speed (Origin to Destination)

- Before Widening: 22mph
- After Widening: 22 mph

Good corridor planning is based on network planning.

~~Street design should be based on traffic demand forecasts~~.

- Nothing useful is achieved through the inexorable widening of community streets.
- Expanding streets to accommodate traffic growth is self-fulfilling and self-defeating at the same time.
- Street size should be a function of community form.
- Good corridor planning is based on network planning.

We must choose between investing in streets or investing in "alternative modes"

Corollary A: people *want* to drive but *should* walk, bike or take transit

There is latent demand for access and circulation as well as for travel – all modes (no need to eat spinach).

We must choose between investing in streets or investing in "alternative modes"

Corollary B: smart growth means reduced spending on streets

Smart growth requires significant investment in streets.

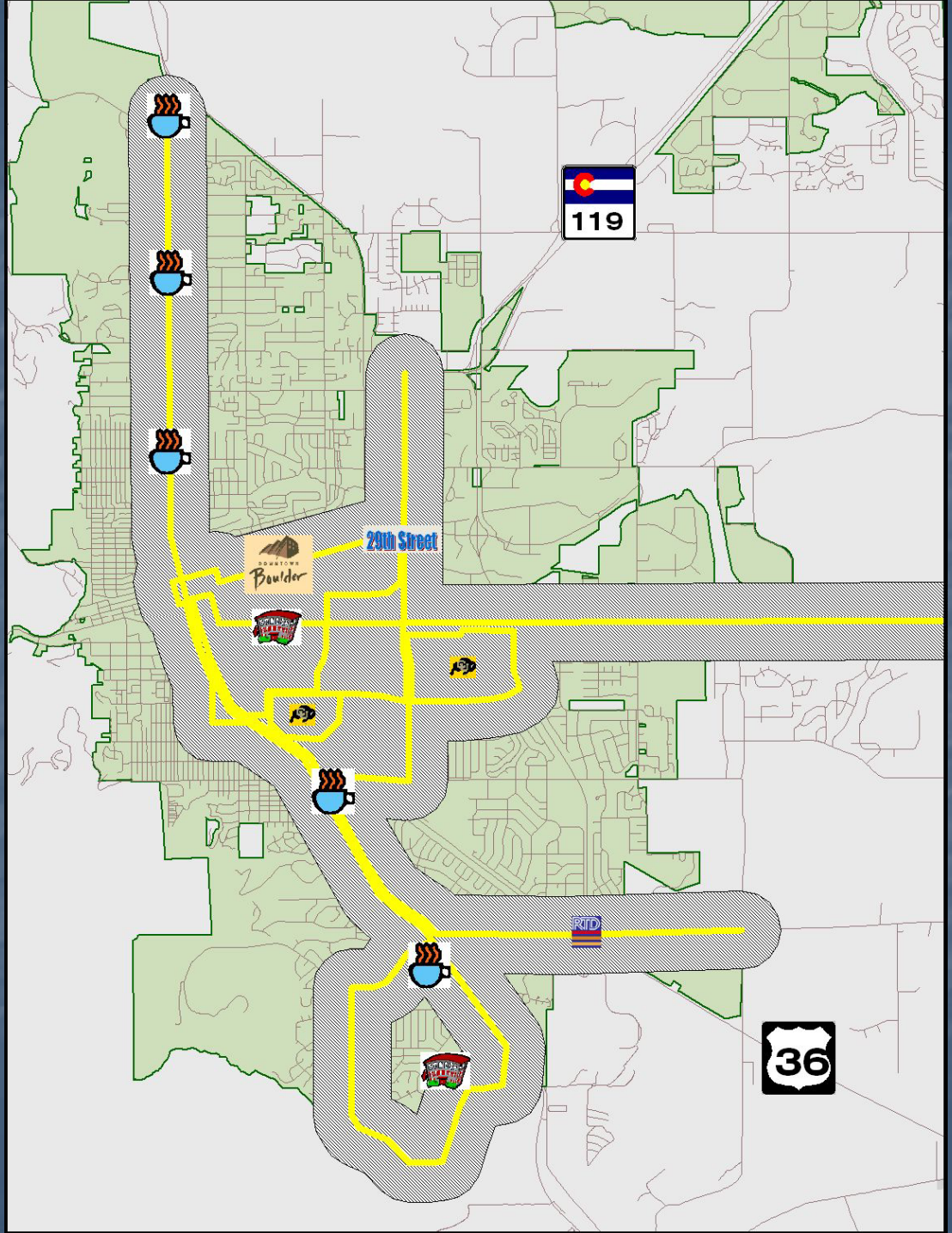
We must choose between investing in streets or investing in "alternative modes"

Corollary C: we should help people get over their "love affair with the automobile"

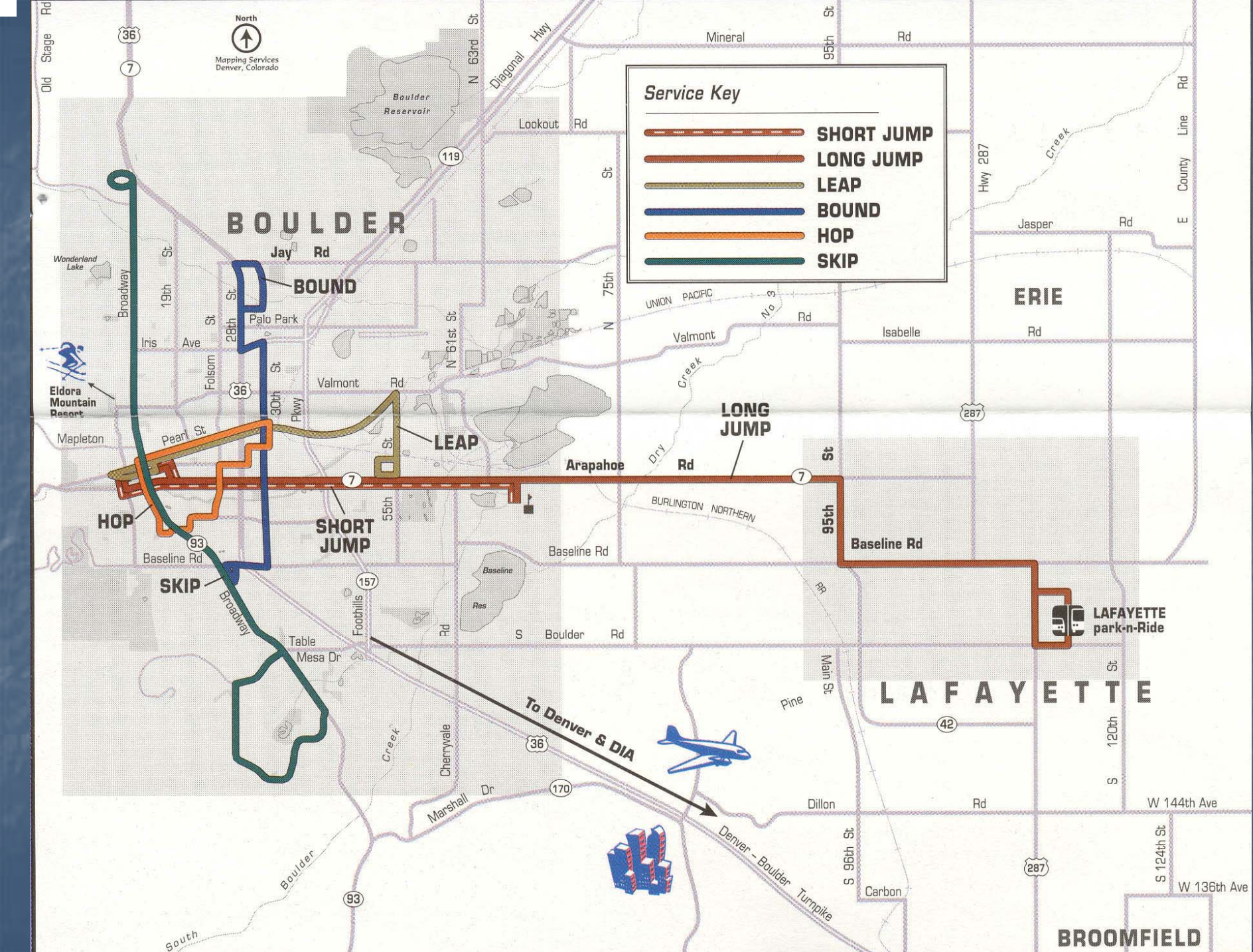
We do not need to end any love affairs … including with our cars.

We must choose between investing in streets or investing in "alternative modes"

Corollary D: we should invest in public transit to relieve traffic congestion


119
29th Street
Downtown Boulder
RTD
36


Now playing at a bus stop near you!
2001: A Bus Odyssey
hop around town
skip along Broadway
JUMP on Arapahoe
Leap along Pearl
BOUND on 30th


Service Key
SHORT JUMP
LONG JUMP
LEAP
BOUND
HOP
SKIP
BOULDER
ERIE
LAFAYETTE
BROOMFIELD
BOUND
LEAP
LONG JUMP
HOP
SHORT JUMP
SKIP
LAFAYETTE park-n-Ride
To Denver & DIA
Denver – Boulder Turnpike
Eldora Mountain Resort
Jay Rd
Arapahoe Rd
Baseline Rd
Valmont Rd
Lookout Rd
Mineral Rd
Jasper Rd
Isabelle Rd
Pearl St
Mapleton
Palo Park
Table Mesa Dr
Marshall Dr
Dillon Rd
Carbon
W 144th Ave
W 136th Ave
Broadway
Foothills
Cherryvale
Diagonal Hwy
Boulder Reservoir
Wonderland Lake
Baseline Res
Valmont Creek
Dry Creek
UNION PACIFIC
BURLINGTON NORTHERN
RR
North
Mapping Services
Denver, Colorado

Good Reasons to Invest in Public Transit:

- Improve mobility (travel, circulation and access) in the face of growth.
- Avoid over-building roads and streets and destroying character.
- Improve personal travel choice and family flexibility.
- Maintain economic vitality and viability.

~~We must choose between investing in streets or investing in "alternative modes".~~

- There is latent demand for access and circulation as well as for travel – all modes.
- Smart growth requires significant investment in streets.
- We do not need to end any love affairs … including with our cars.
- There are good reasons to invest in public transit; congestion relief is not one of them.

Your city should be "pedestrian-friendly"

Corollary A: this is something we love to talk about but do not expect to achieve

Pedestrian Science

- Pedestrians
- Walking Environments

Types of Walking

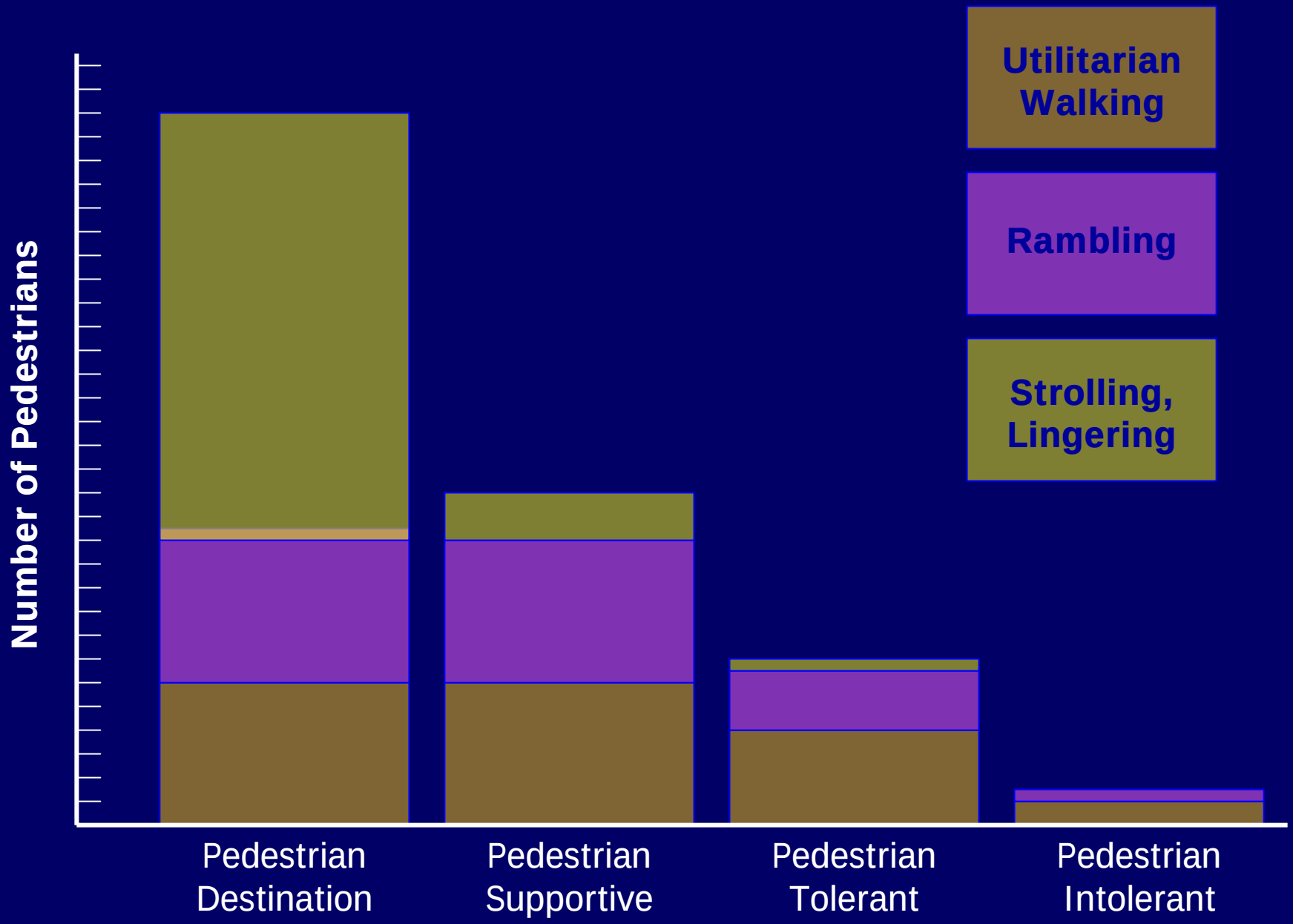
- Rambling
- Utilitarian Walking
- Strolling, Lingering
- Promenading
- Special Events

Pedestrian Environments

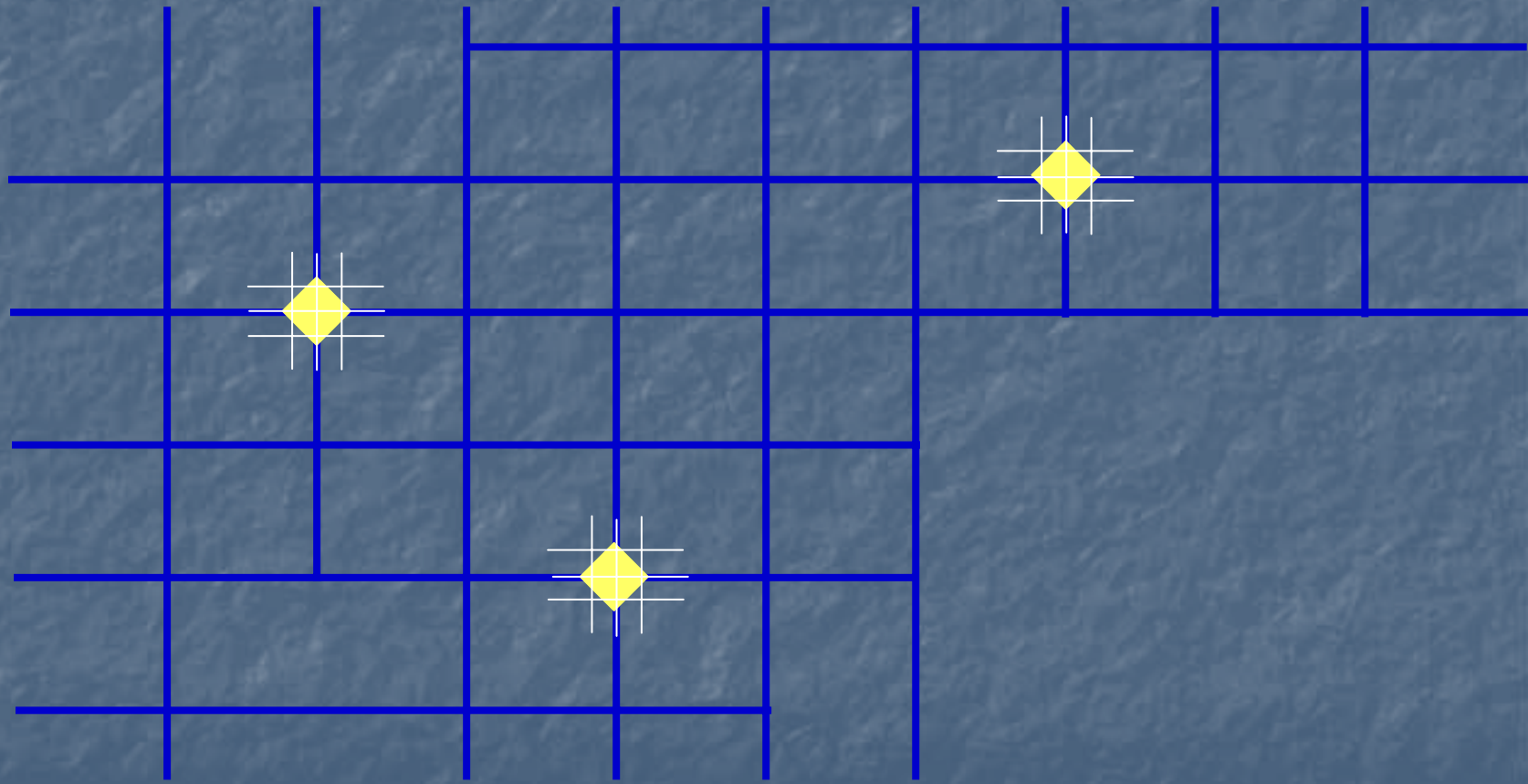
“Pedestrian Friendly”

Pedestrian Environment Hierarchy

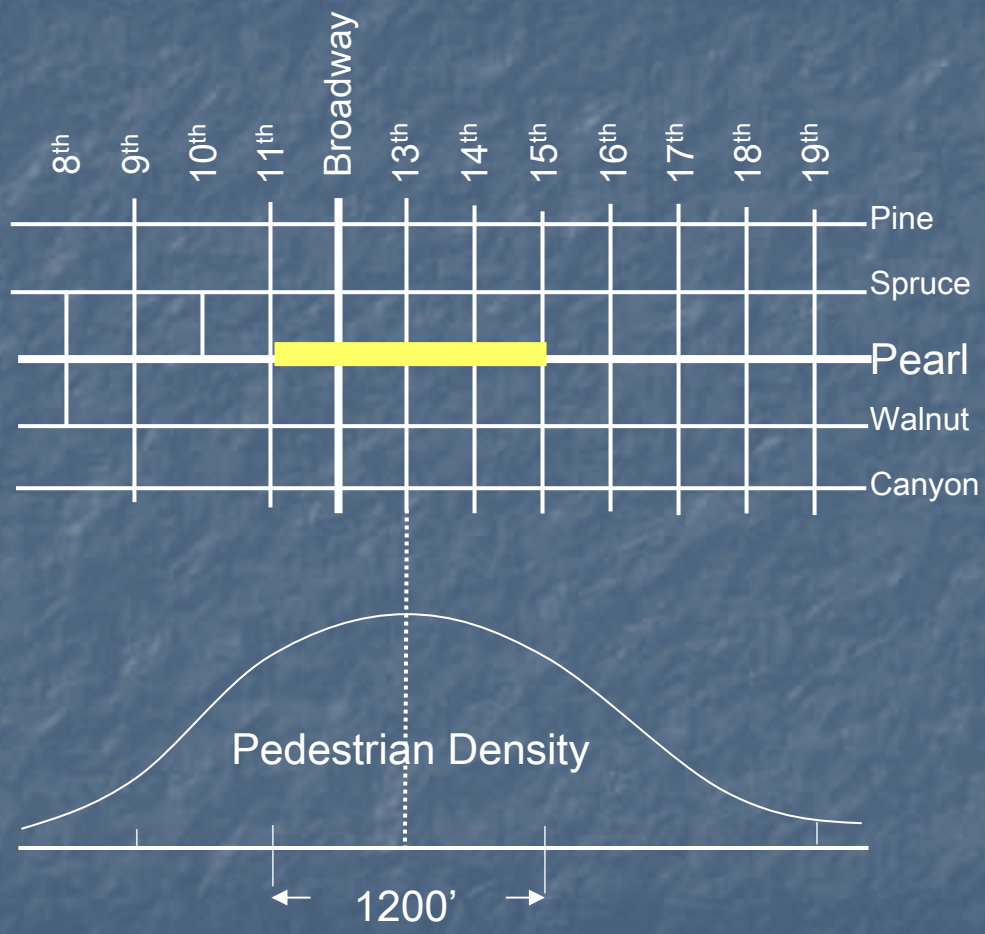
Walk Environments and Types of Walking



Pedestrian Macro Structure (Nodes and Corridors)



Downtown Boulder Pedestrian Mall



Pedestrian Districts

- Entire city ≠ pedestrian district
- People are drawn to the center
- The center will have an axis
- Walk range from the axis is limited
- Sources of pedestrians are:

Parked cars	Nearby residential
Transit	Lodging

so...

10 Principles

1. Balanced Mobility
2. Dense, Connecte[illegible]
3. Scale &
4. [illegible]orecasts
5. Publ[illegible]gestion Relief
6. W[illegible]
7. M[illegible]odal Streets
8. Sustaina[illegible]e = Flexible
9. Public Empowerment
10. Accountability, Monitoring & Reporting

Developing Good Memes

- Connectivity
- Networks
- Choice
- Multimodal Streets

People seek connections…

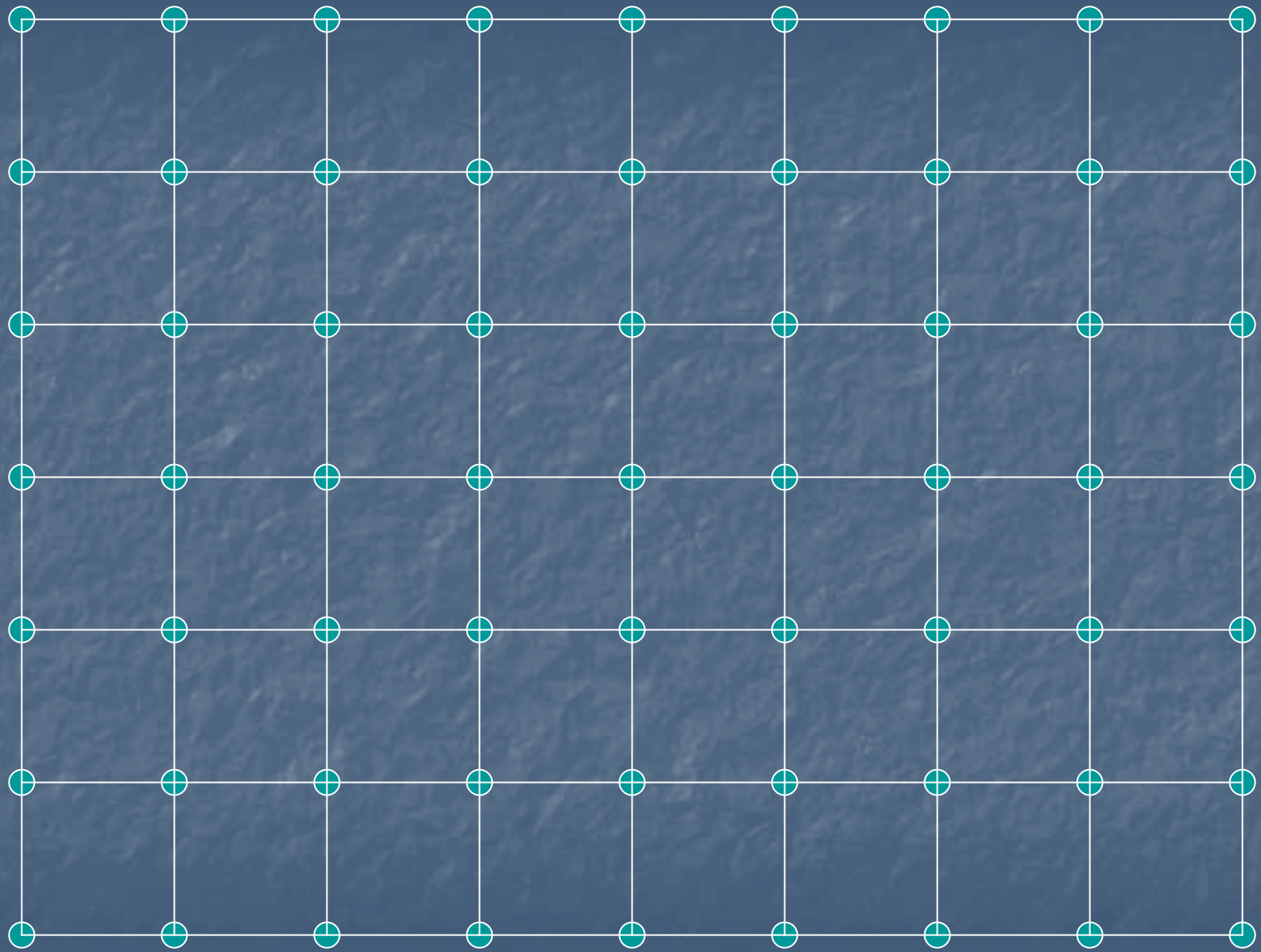
Why not connect your community?

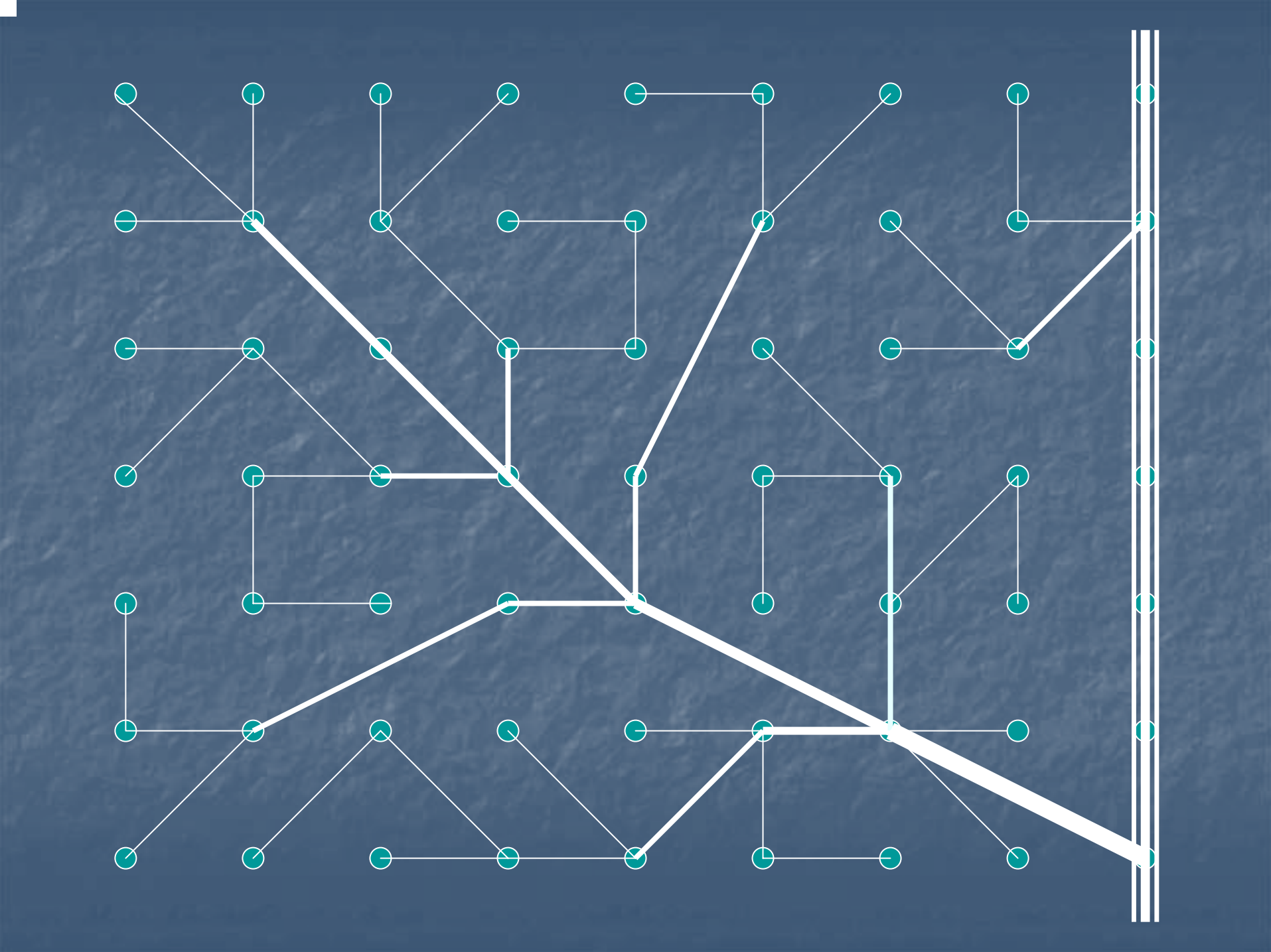
"You can't get there from here . . ."

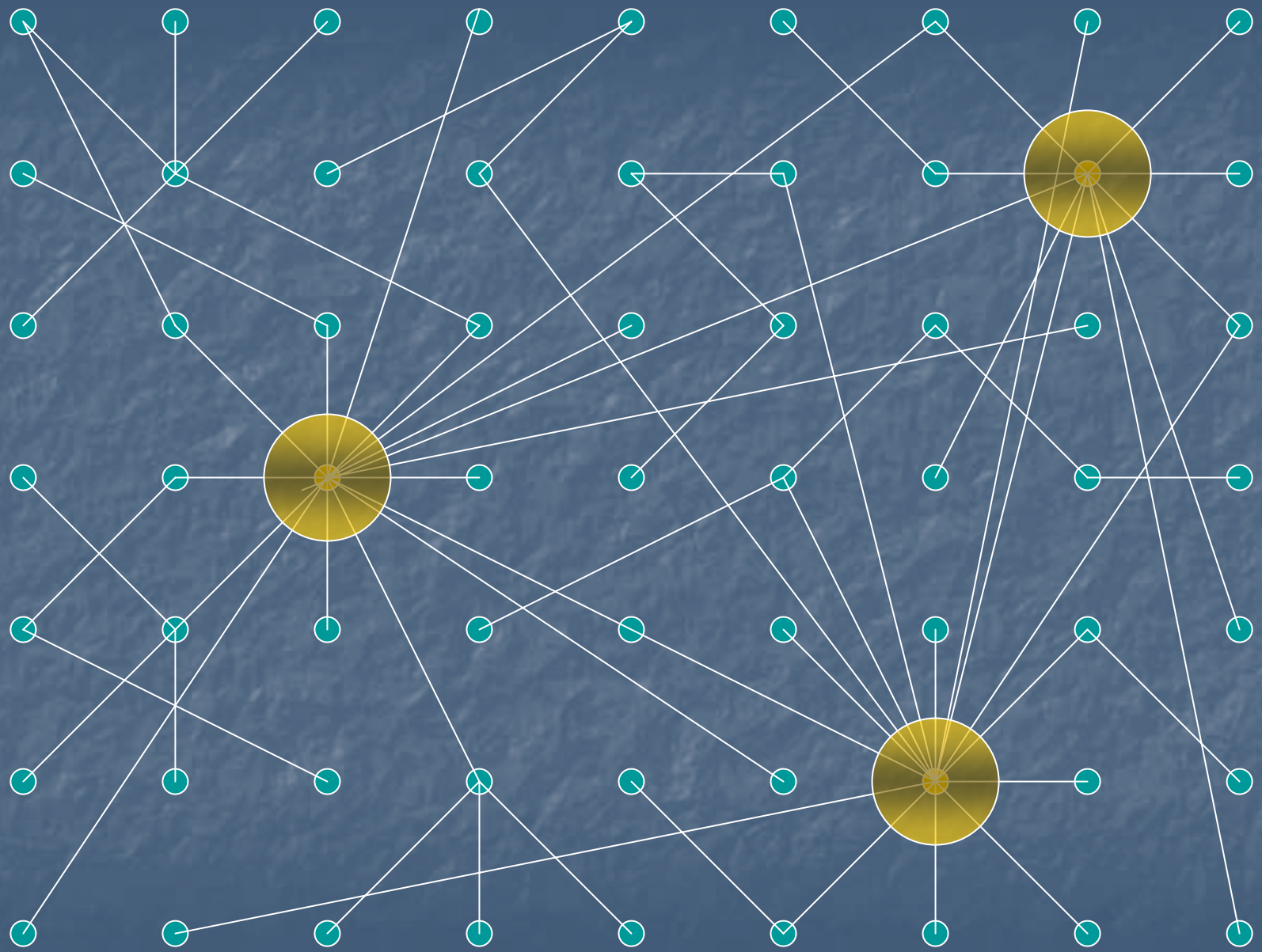
(without driving)

Networks…

Why don't we understand them better? (They are interesting.)







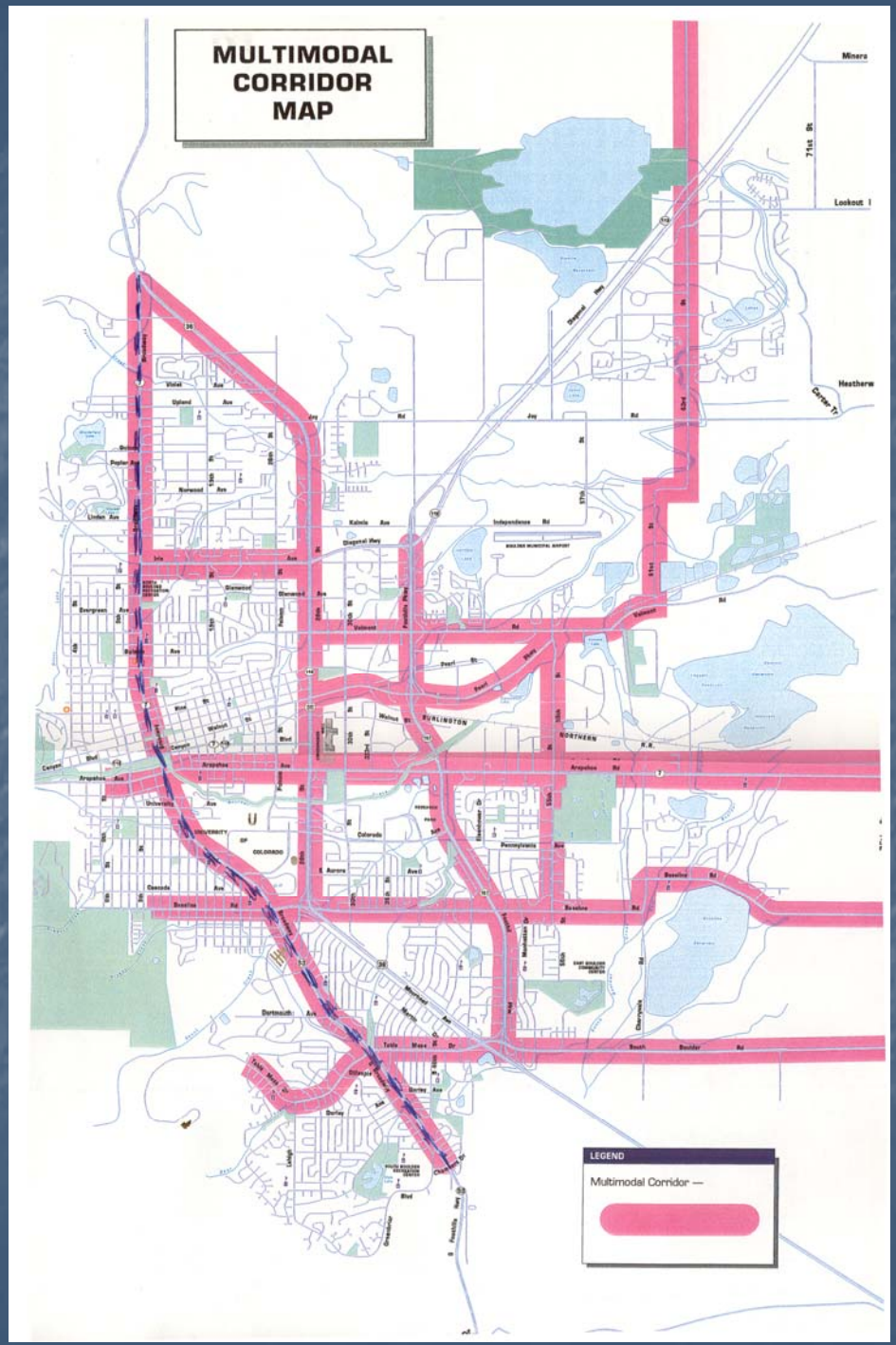
Choice.

Why not a flexible transportation system?

Multimodal Streets.

Why not have convenient corridors?

Boulder 1996 TMP



We prefer:

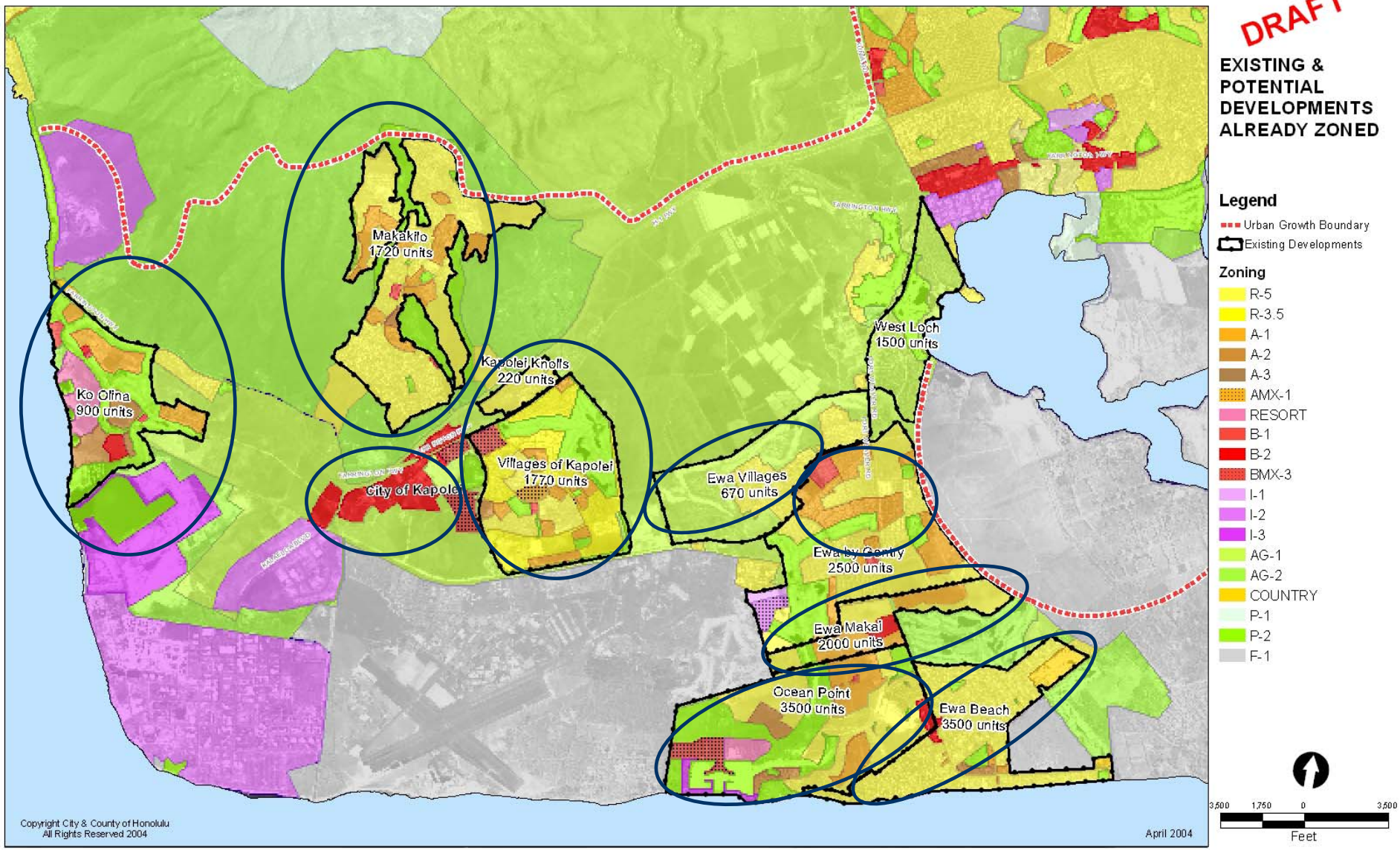
- Action to inaction
- Simplicity to complexity
- Decisiveness to nuance

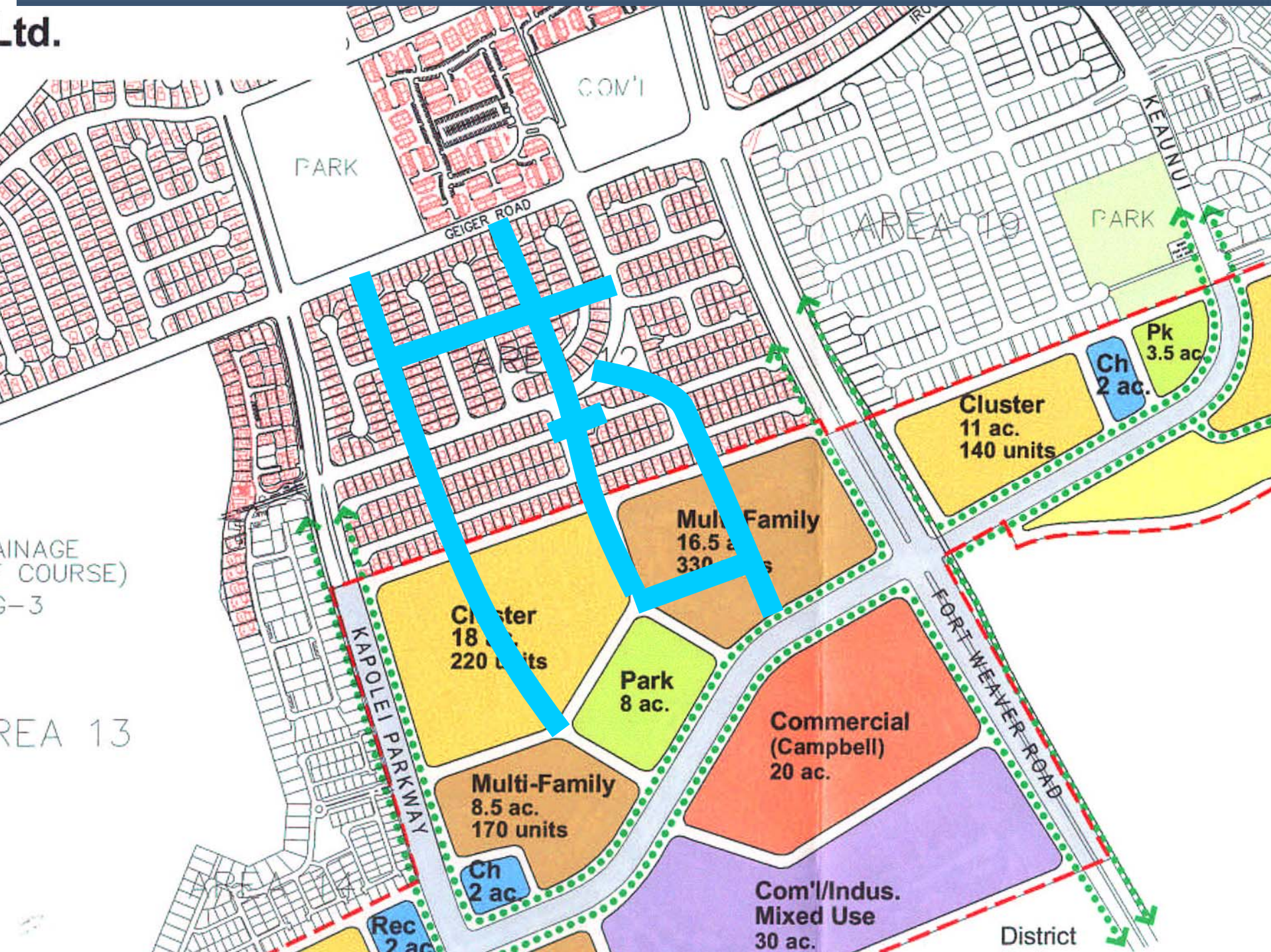
Case Studies

Honolulu – Ewa Plain (2nd City)

Case Study

Pod Style Development




Ltd.
COM'I
PARK
GEIGER ROAD
AREA 12
AREA 13
AREA 19
PARK
KEAUNUI
Pk
3.5 ac.
Ch
2 ac.
Cluster
11 ac.
140 units
Multi-Family
16.5 a
330
Cluster
18
220 units
Park
8 ac.
KAPOLEI PARKWAY
FORT WEAVER ROAD
Commercial
(Campbell)
20 ac.
Multi-Family
8.5 ac.
170 units
Ch
2 ac.
Com'l/Indus.
Mixed Use
30 ac.
Rec
2 ac
District
AINAGE
COURSE)
G-3
REA 13

Our Recommendation: Ensure Connectivity

- Set connectivity standards
- Supply collector & connector system
- Require extensions
- Carefully plan perimeters
- Improve emergency service access
- Address design standards
- Address funding systems

Redmond Transportation Master Plan

Case Study

Public Priorities

- Community character
- Green city
- "Real choices" for mobility
- Internal connectivity

TRANSPORTATION MASTER PLAN PRIORITIES

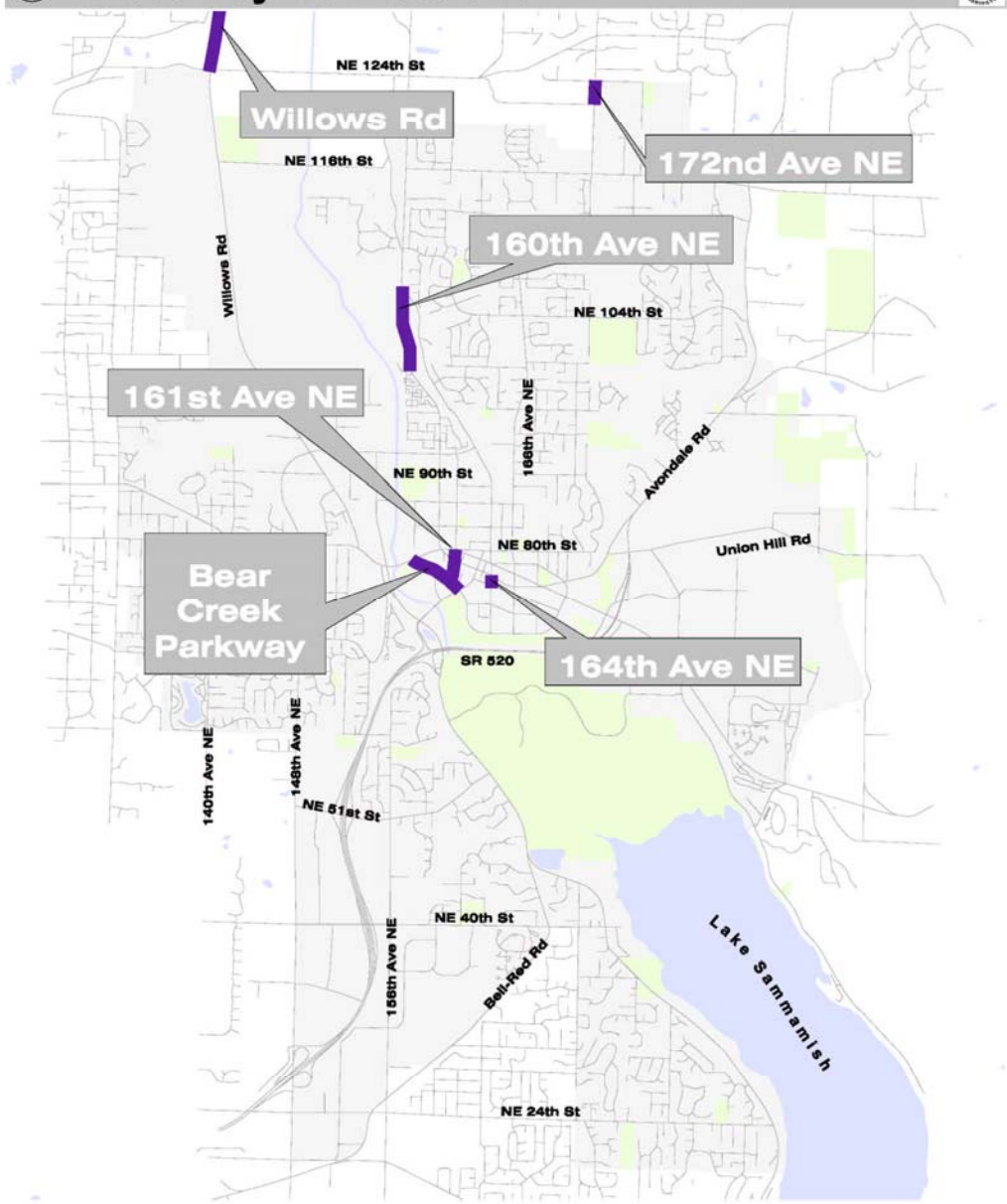
1. Address Public Health and Safety	2. Ensure Adequate Maintenance	3. Ensure Plan-Based Concurrency
• Safety program • Neighborhood traffic calming • Sidewalk program	• Ongoing routine maintenance program • Pavement Management Program	• Support centers • Build multimodal corridors • Make connections within Redmond • Prepare for HCT

(as of January draft)

City of Redmond

Transportation Master Plan

Roadway Connections

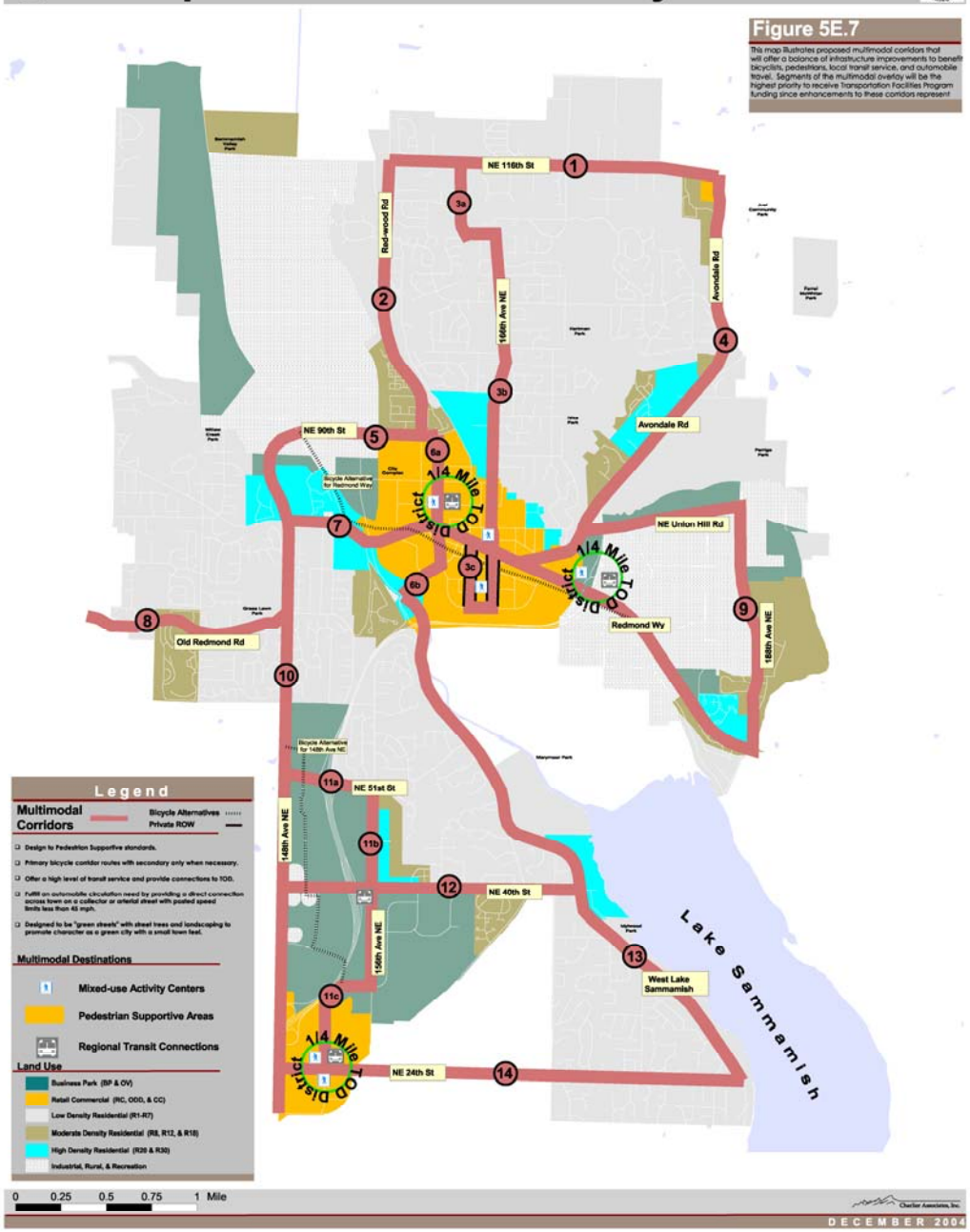


DECEMBER 2004

City of Redmond

Transportation Master Plan

Proposed Multimodal Overlay



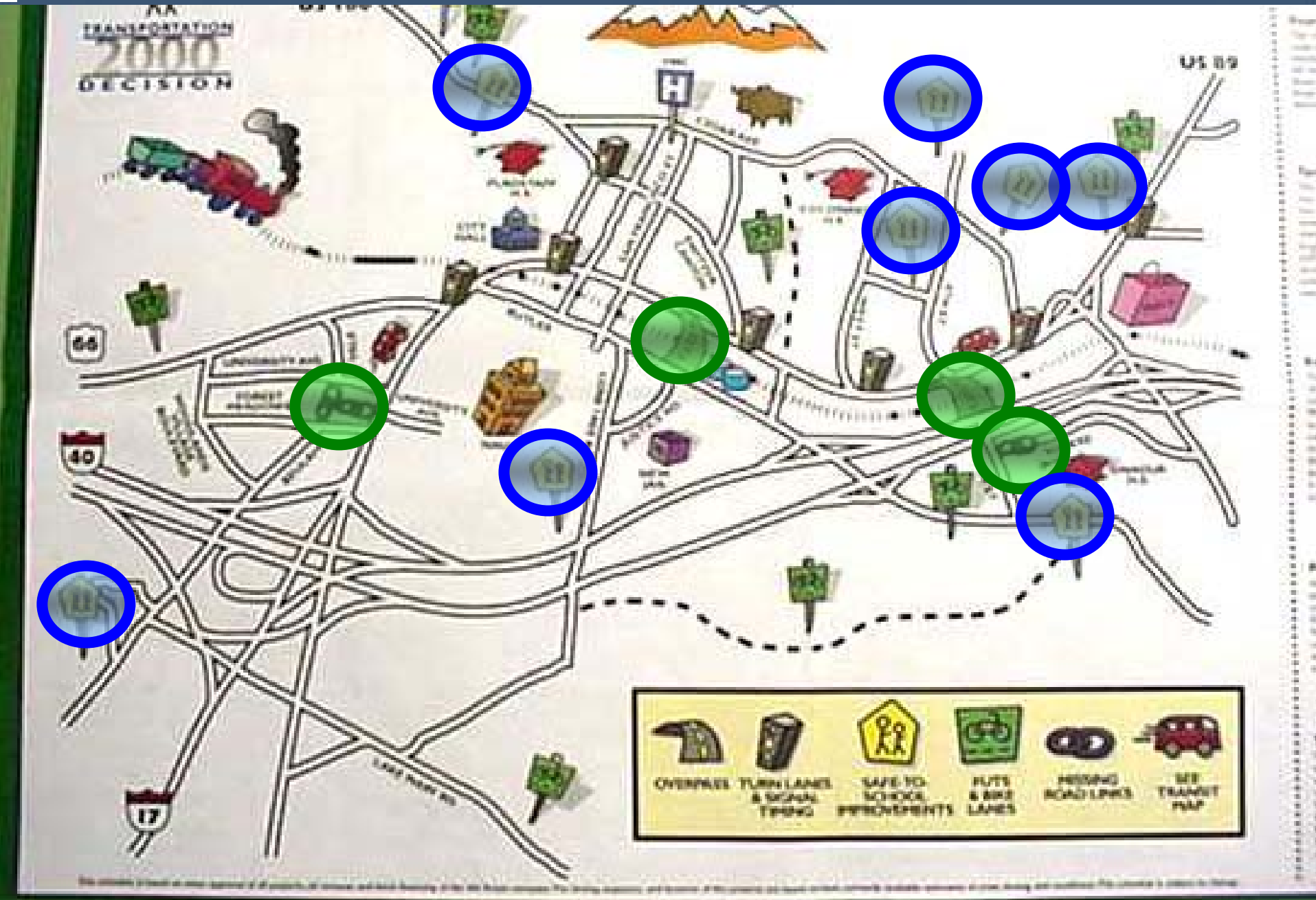
DECEMBER 2004

Flagstaff/Coconino County Transportation Master Plan

Case Study

Proposed Funding Package

- Fourth Street Railroad Overpass
- Fourth Street Bonding Authority
- Transit
- Safe-to-School
- Traffic Flow
- Tank Farm Railroad Overpass


TRANSPORTATION
2000
DECISION
US 89
64
40
17
OVERPASS
TURN LANES & SIGNAL TIMING
SAFE TO SCHOOL IMPROVEMENTS
PATH & BIKE LANES
MISSING ROAD LINKS
SEE TRANSIT MAP

Six Items, 1/2 Cent, 20-Years

Outcome

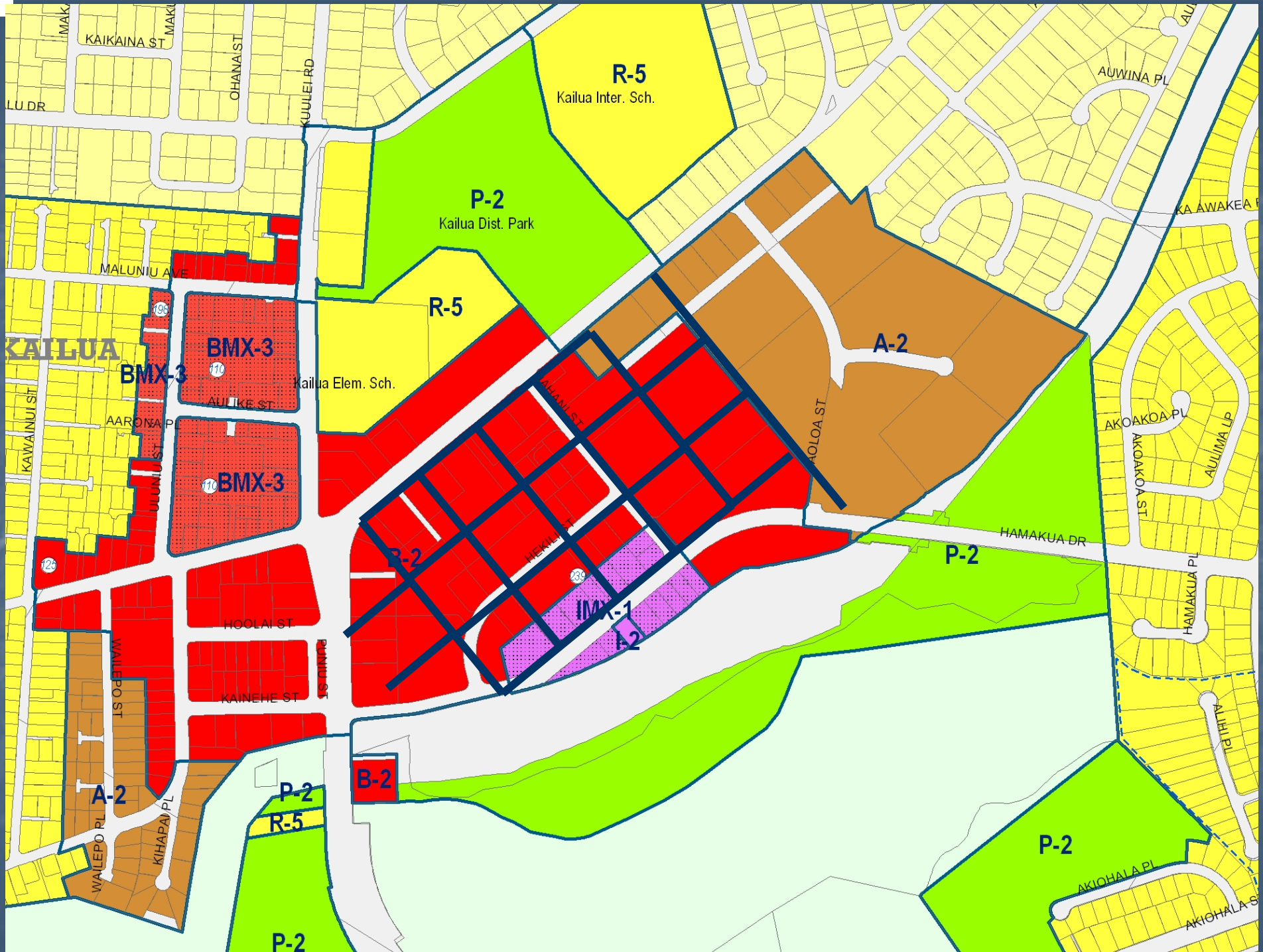
- Fourth Street Overpass 69%
- Fourth Street Bond 68%
- Transit 61%
- Safe-to-School 69%
- Traffic Flow 69%
- ~~Tank Farm Overpass 47%~~

Flagstaff Messages

- Yes: invest in streets, but…
  - No more massive roads
- Improve:
  - Community connectivity
  - Mode share (balance)

Downtown Kailua

Case Study


KAILUA
KAIKAINA ST
OHANA ST
KUULEI RD
LU DR
R-5
Kailua Inter. Sch.
P-2
Kailua Dist. Park
AUWINA PL
MALUNIU AVE
R-5
BMX-3
BMX-3
Kailua Elem. Sch.
AULIKE ST
AARONA PL
KAWAINUI ST
ULUNIU ST
BMX-3
A-2
AOLOA ST
AKOAKOA PL
AKOAKOA ST
AULIMA LP
HAMAKUA DR
P-2
HAMAKUA PL
P-2
HEKILI ST
IMX-1
A-2
HOOLAI ST
KAINEHE ST
PUNUI ST
WAILEPO ST
A-2
WAILEPO PL
KIHAPAI PL
P-2
R-5
B-2
P-2
AKIOHALA PL
AKIOHALA S
P-2
AIHIU PL


KAILUA SHOPPING CENTER
POST OFFICE
PUNIU RD
KEKILI ST.

Developing Good Memes

- Connectivity
- Networks
- Choice
- Multimodal Streets


Hundreds of Years:
200
400
600
800
1000
Transportation Corridors
Major Roads
Rail
Pathways
Architecture
Civic
Residential
Commercial
Landscaping
Trees
Other Plantings

Follow-Up Information

www.charlier.org

More Slides

10 Principles

5

Public transit systems improve personal travel choices and economic vitality. Flexible mobility is a realistic transit objective; reduced traffic congestion is not. Good transit service increases mobility; it generally does not reduce vehicular traffic.

6

High quality walking and bicycling environments enable active living, which improves community and individual health and well being. This represents the largest category of unmet mobility demand in virtually all North American communities.

Streets are the principal infrastructure for all modes. Developing a multimodal transportation system requires investments in streets. Corridor "improvement" projects that ignore the multimodal functions of streets are irresponsible.

The most sustainable transportation systems are those that enable families and individuals to minimize daily vehicle miles of travel, while at the same time enabling them to maximize the benefits of personal motor vehicle ownership. Sustainable transportation is not about ending our "love affair with the automobile." In fact, it can reinvigorate the joys of auto ownership.

Good transportation planning requires the direct, committed and continuing involvement of a broad cross section of empowered community members. This is expensive, time-consuming and difficult. However, it also is essential.

Successful development and management of transportation systems requires routine public monitoring and reporting of system performance based on community objectives. Community support for progressive transportation requires unambiguous honesty and accountability about the condition of the transportation system and about the effectiveness of the public transportation program.