Smart Growth & Mobility

Implementing Community Networks
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
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Why are these principles so difficult to implement?
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
Transportation systems should serve all three elements of mobility:

- Access;
- Circulation; and,
- Travel.
## Mobility Elements

<table>
<thead>
<tr>
<th>Element</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>Ability to move over distances, connecting regions</td>
</tr>
<tr>
<td>Circulation</td>
<td>Ability to move about within areas, connecting land uses</td>
</tr>
<tr>
<td>Access</td>
<td>Ability to enter and make use of specific sites</td>
</tr>
</tbody>
</table>
## Facilities

<table>
<thead>
<tr>
<th>Category</th>
<th>Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel</td>
<td>Freeways, arterials, rail transit, express bus lanes</td>
</tr>
<tr>
<td>Circulation</td>
<td>Collectors, connectors, transit routes, bike trails and lanes</td>
</tr>
<tr>
<td>Access</td>
<td>Local streets, parking, sidewalks and crosswalks</td>
</tr>
</tbody>
</table>
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

Walk  Bike  Transit  Auto
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?
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.
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

Widen Streets

Forecast Traffic
First Four Principles

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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
2001: A Bus Odyssey

Now playing at a bus stop near you!

HOP around town

SKIP along Broadway

JUMP on Arapahoe

LEAP along Pearl

BOUND on 30th
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

- Pedestrian Place/District
- Pedestrian Supportive Environment
- Pedestrian Tolerant Environment
- Pedestrian Intolerant Environment
Walk Environments and Types of Walking

- Pedestrian Destination
- Pedestrian Supportive
- Pedestrian Tolerant
- Pedestrian Intolerant

Number of Pedestrians

- Utilitarian Walking
- Rambling
- Strolling, Lingering
Pedestrian Macro Structure (Nodes and Corridors)
Downtown Boulder Pedestrian Mall

Pedestrian Density

8th 9th 10th 11th Broadway 13th 14th 15th 16th 17th 18th 19th
Pine
Spruce
Pearl
Walnut
Canyon

1200’
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...
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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?
We prefer:

- Action to inaction
- Simplicity to complexity
- Decisiveness to nuance
Case Studies
Honolulu – Ewa Plain (2nd City)

Case Study
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
<table>
<thead>
<tr>
<th>1. Address Public Health and Safety</th>
<th>2. Ensure Adequate Maintenance</th>
<th>3. Ensure Plan-Based Concurrency</th>
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<tr>
<td>• Safety program</td>
<td>• Ongoing routine maintenance program</td>
<td>• Support centers</td>
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<tr>
<td>• Neighborhood traffic calming</td>
<td>• Pavement Management Program</td>
<td>• Build multimodal corridors</td>
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<td>• Sidewalk program</td>
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<td>• Make connections within Redmond</td>
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<td>• Prepare for HCT</td>
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(as of January draft)
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
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
Developing Good Memes

- Connectivity
- Networks
- Choice
- Multimodal Streets
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Follow-Up Information

www.charlier.org
More Slides

10 Principles
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.
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.