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Transportation Demand Management

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Module 1

WHAT IS TDM AND WHY DO IT?

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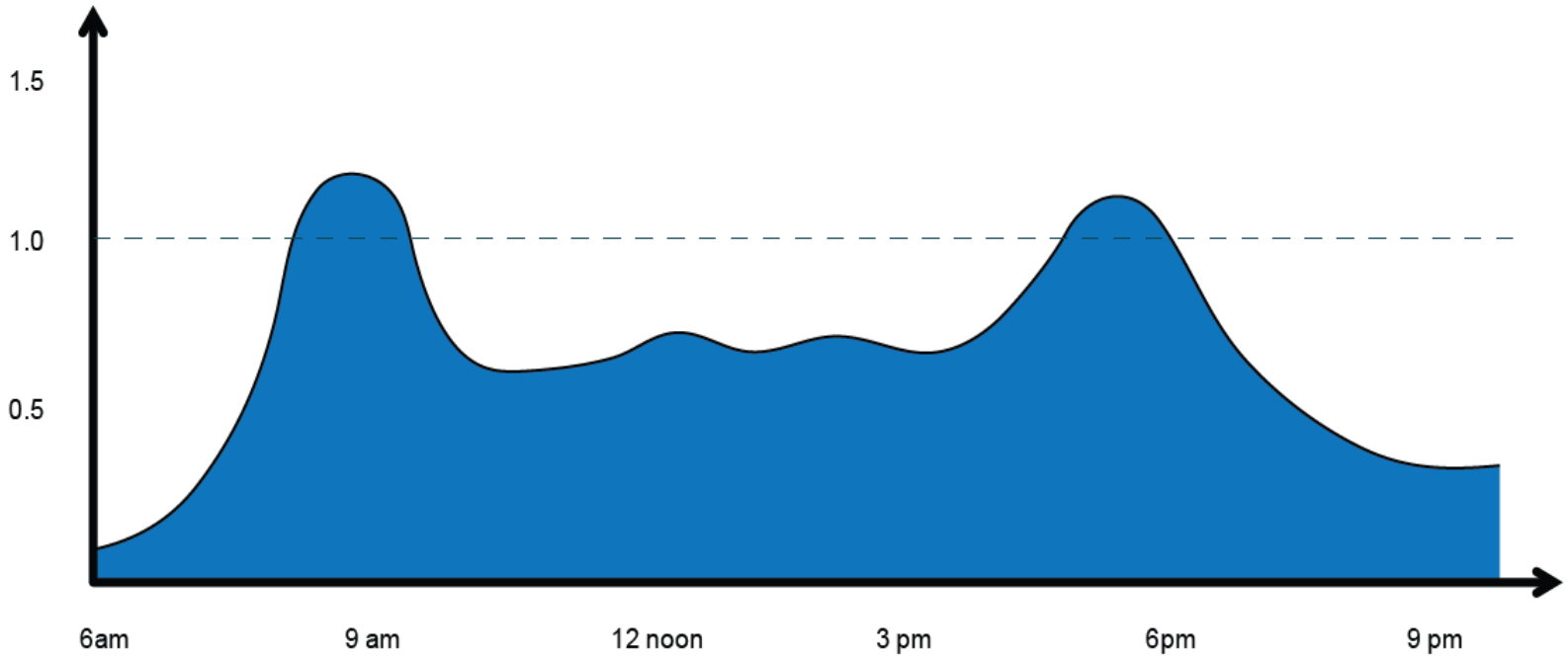
Typical Peak Period Travel



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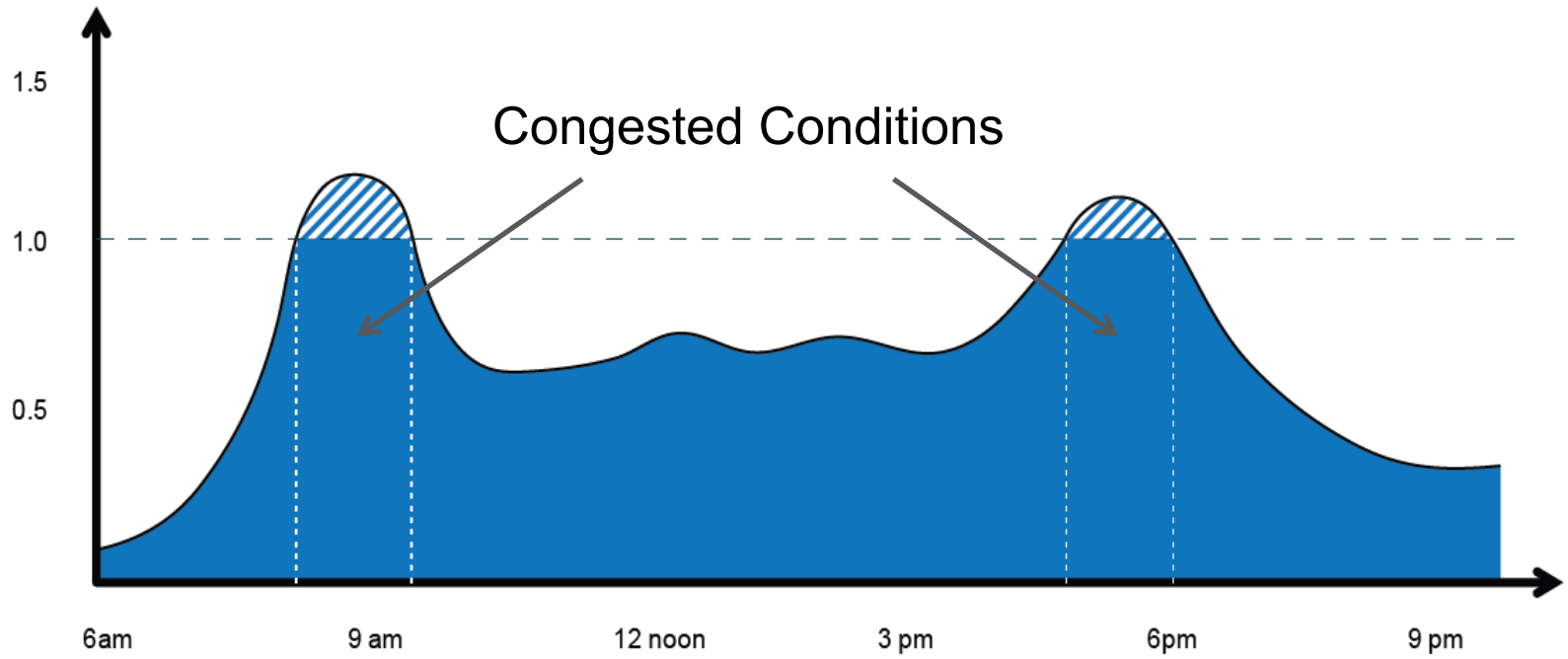
Volume Surpassing Optimal Flow



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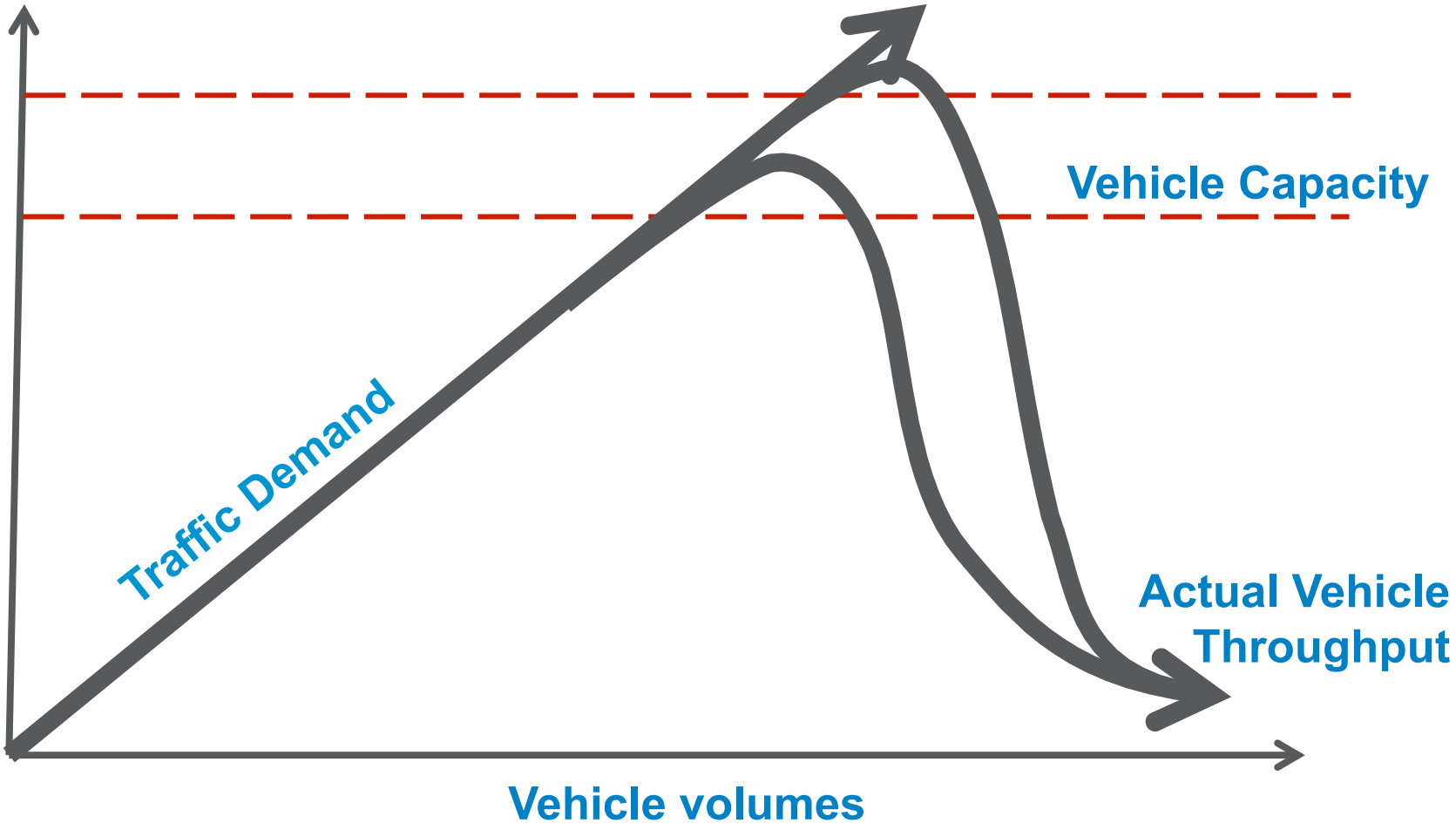
One solution: Increase capacity



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Another Solution:
Transportation Demand Management (TDM)

=

Application of strategies and policies to optimize existing systems and infrastructure by reducing travel demand or redistributing demand in time or space

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What is transportation demand management?

The ability to accommodate the growth you need with the assets you have while preserving the quality of life you want

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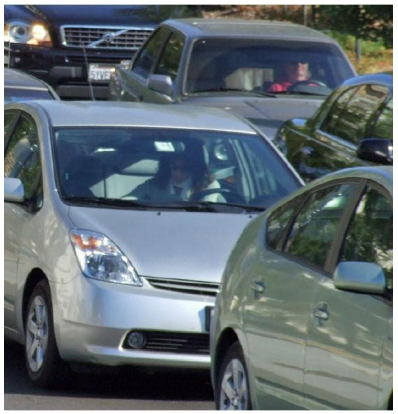
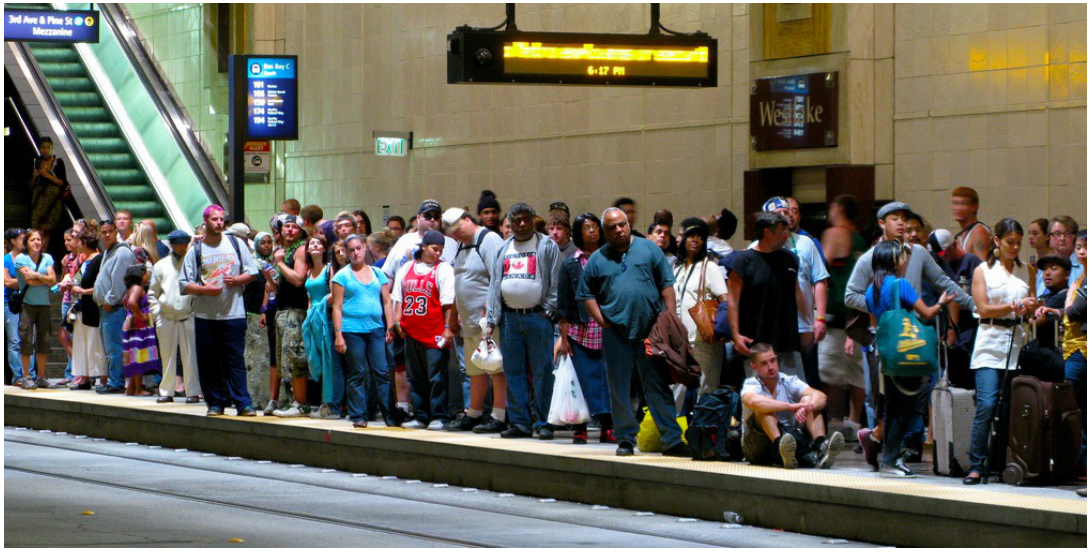
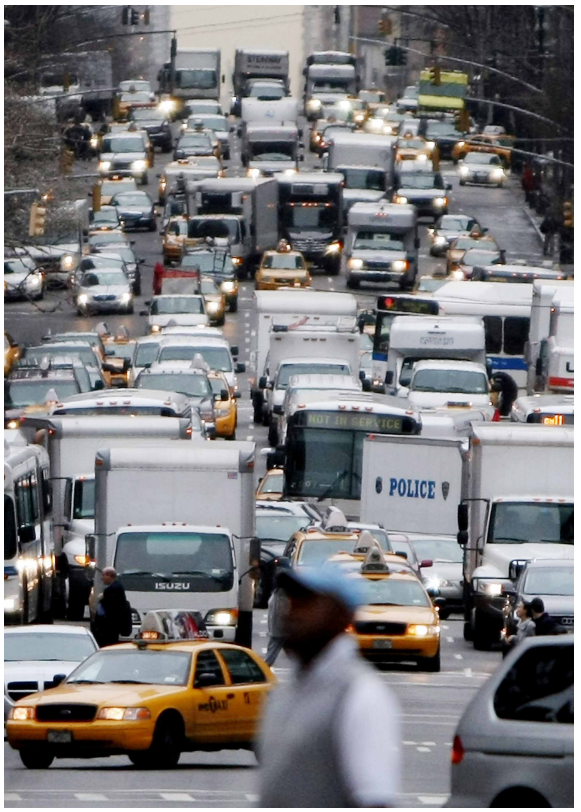
Where is TDM be applied?

- SOV travel
- Transit
- Freight







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Why?

- Accommodate growth
- Preserve investments
- Save resources
- Maintain competitiveness
- Enhance quality of life
- Enable choice

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How?

- Shifting trips (different times, different routes)
- Substituting trips (different modes)
- Eliminating trips (telework, flex schedules, freight villages)
- Optimizing more (management, technology)

Key to effectiveness

- Easy
- Affordable
- Efficient

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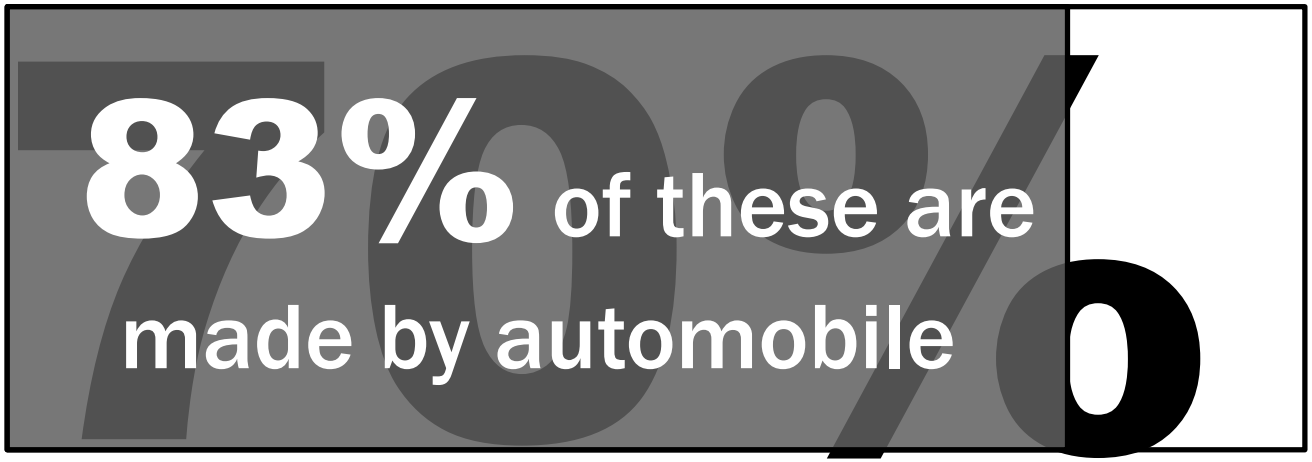
The Opportunity



Of household trips are 5 miles long or less

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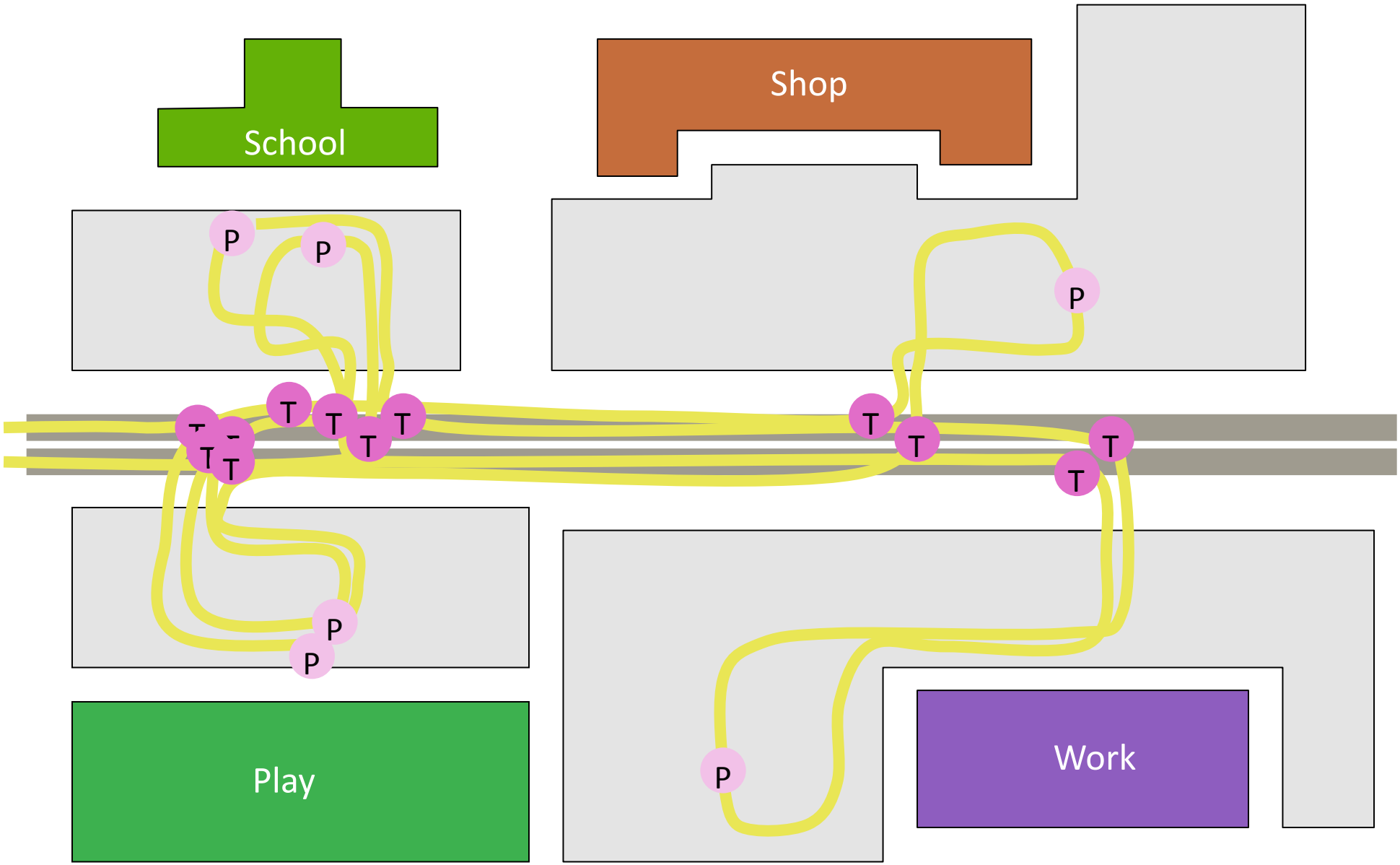

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Value of TDM: Choice

Average Annual Wage in Orlando-Kissemee-Sanford (2013) **$47,771/year**

Average cost of owning and operating (one) automobile (2013): **$9,122 /year**

Average Annual Cost of Attendance (University of Central Florida): **$16,848/year**

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Value of TDM: Adaptability

10 Average number of years between transportation project conception and delivery

20 Average financing period for major transportation construction or developments

6 Years before autonomous vehicles will be commercially available

1 year until the next big innovation in transportation

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Value of TDM: Responding to Demand

Pop quiz!

Do you typically:

1. Drive to work because you want to?
2. Drive to work because you have to?
3. Get to work some other way than driving?

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Value of TDM: Responding to Demand

Convinced & committed	Early adopters, driven by values or budgets (or both!)
Confident but cautious	Use alternate modes on occasion but uncertain of them
Interested, but skeptical	Would use alternate travel if they had knowledge of them and they were of equal value
No way, no how	Voluntarily choose even when other options are viable.

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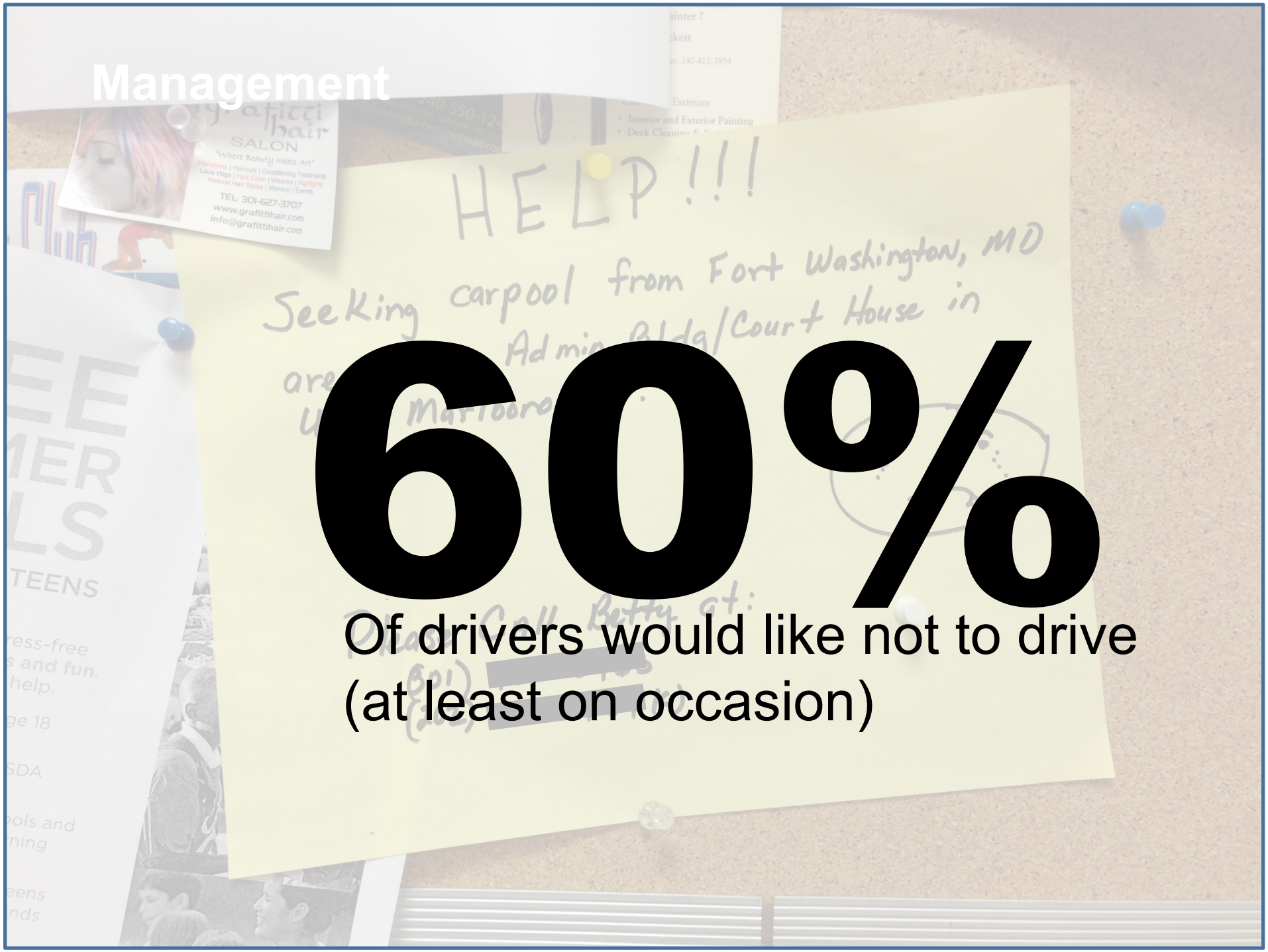
Management
HELP!!!
Seeking carpool from Fort Washington, MD
Admin Bldg/Court House in
60%
Of drivers would like not to drive
(at least on occasion)

Value of TDM: Responding to Demand

Boomers

Highest wage earners and greatest amassed wealth

(sustaining economic development)

Millennials

Largest generation and rising workforce

(attracting economic development)

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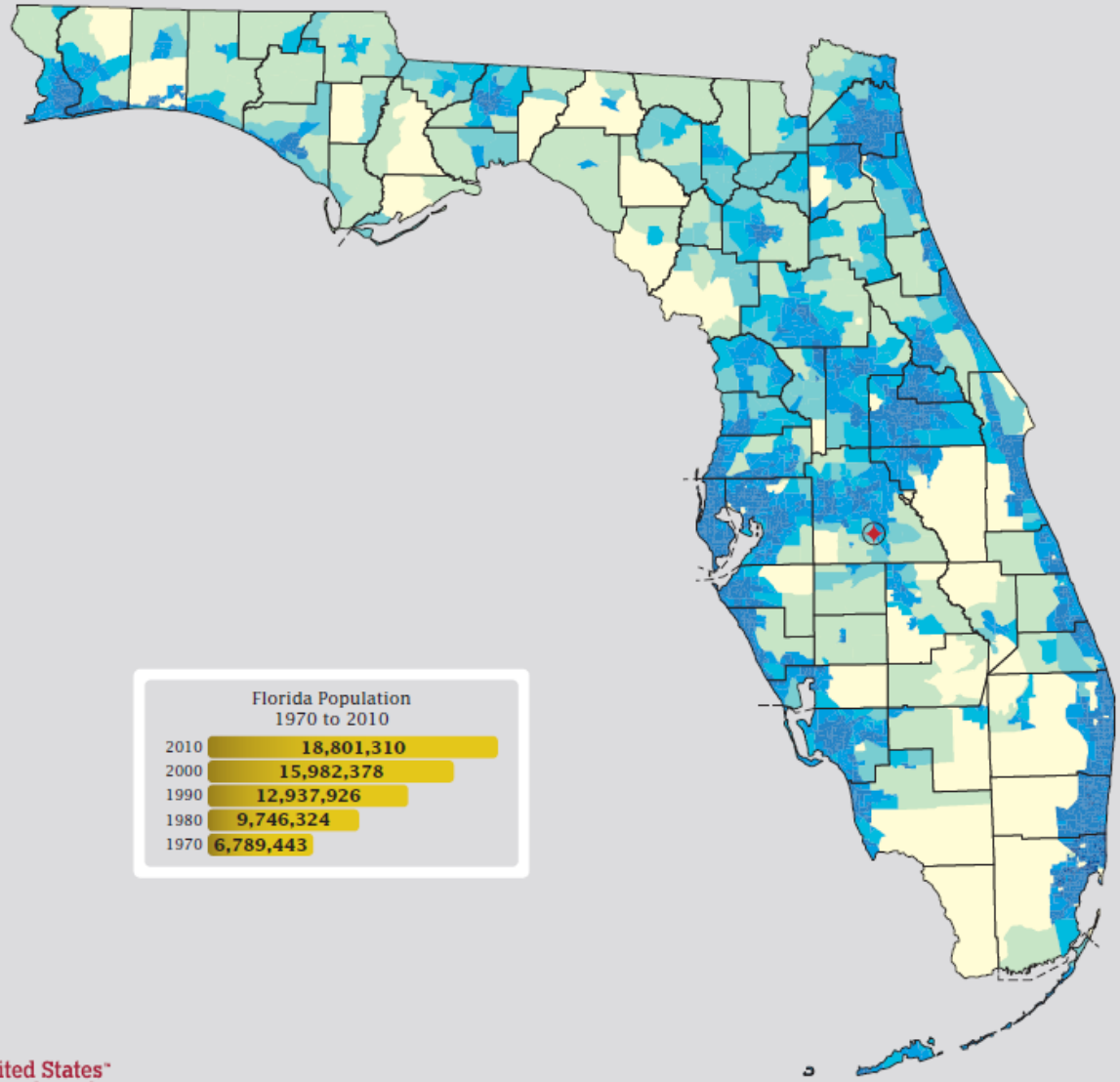
2010 Census: Florida Profile

Population Density by Census Tract

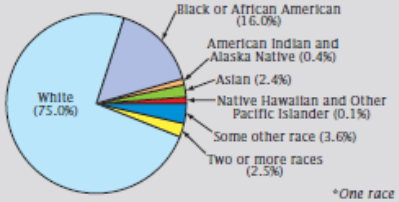


Florida Population 1970 to 2010

2010	18,801,310
2000	15,982,378
1990	12,937,926
1980	9,746,324
1970	6,789,443

0 20 40 60 80 Kilometers
0 20 40 60 80 Miles

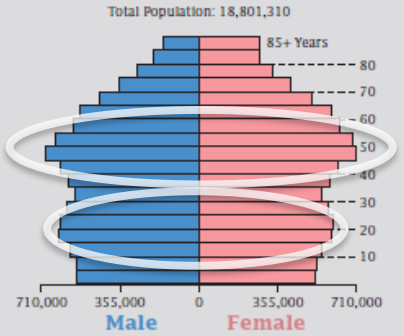
State Race* Breakdown



*One race

Hispanic or Latino (of any race) makes up **22.5%** of the state population.

Population by Sex and Age



Housing Tenure

Total Occupied Housing Units:
7,420,802

67.4% Owner Occupied	32.6% Renter Occupied

Average Household Size of Owner-Occupied Units:	Average Household Size of Renter-Occupied Units:
2.47 people	2.49 people

People per Square Mile by Census Tract

U.S. density is 88.4

- 10,000.0 to 77,214.4
- 1,000.0 to 9,999.9
- 200.0 to 999.9
- 88.4 to 199.9
- 50.0 to 88.3
- 15.0 to 49.9
- Less than 15.0
- County Boundary
- Florida Mean Center of Population

United States Census Bureau

Value of TDM: Responding to Demand

Boomers - Empty Nesters

- **72%** prefer **shorter commute** and smaller home, over a longer commute and large home
- **49%** want to live near developments **offering a mix** of shopping, dining and offices
- For **52%** access to **public transportation** is important. Older adults increased transit use by **40%** in the last decade
- In the next decade, **1 in 4** drivers will be **over 65 years old**
- **21%** of seniors **will not drive**

Millennials – Digital Natives

- **83%** sleep with their cell phone
- **80%** have texted in the last 30 minutes.
- Average **14.5 hours** of smartphone use per week.
- **2/3** would give up their car before their computer or mobile phone.
- **Over ¼** do not have a driver's license.
- **88%** want to live in an urban setting.

ULI survey

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Value of TDM: Easing the commute

- •Workers who have longer commutes are more likely to feel tired, as well as experience greater worry and less enjoyment.
- •The number of miles a person drives to work each day has a stronger correlation with obesity that any other factor analyzed.
- •When one partner in a marriage commutes longer than 45 minutes a day, the marriage is 40% more likely to end in divorce.
- •For every 10 minutes spend commuting, the number of “social connections” decrease 10%.
- •Commutes longer than 90 minutes increase the risk of neck problems and chronic back pain.
- •Every minute of a commute reduces time spent on healthy lifestyle activities, like preparing meals, resting, and exercising.

SOURCE: Obrella Insurance (http://www.obrella.com/news/2015/best-commuter-cities-florida/)

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COMPONENTS OF TDM

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Environment that enables TDM

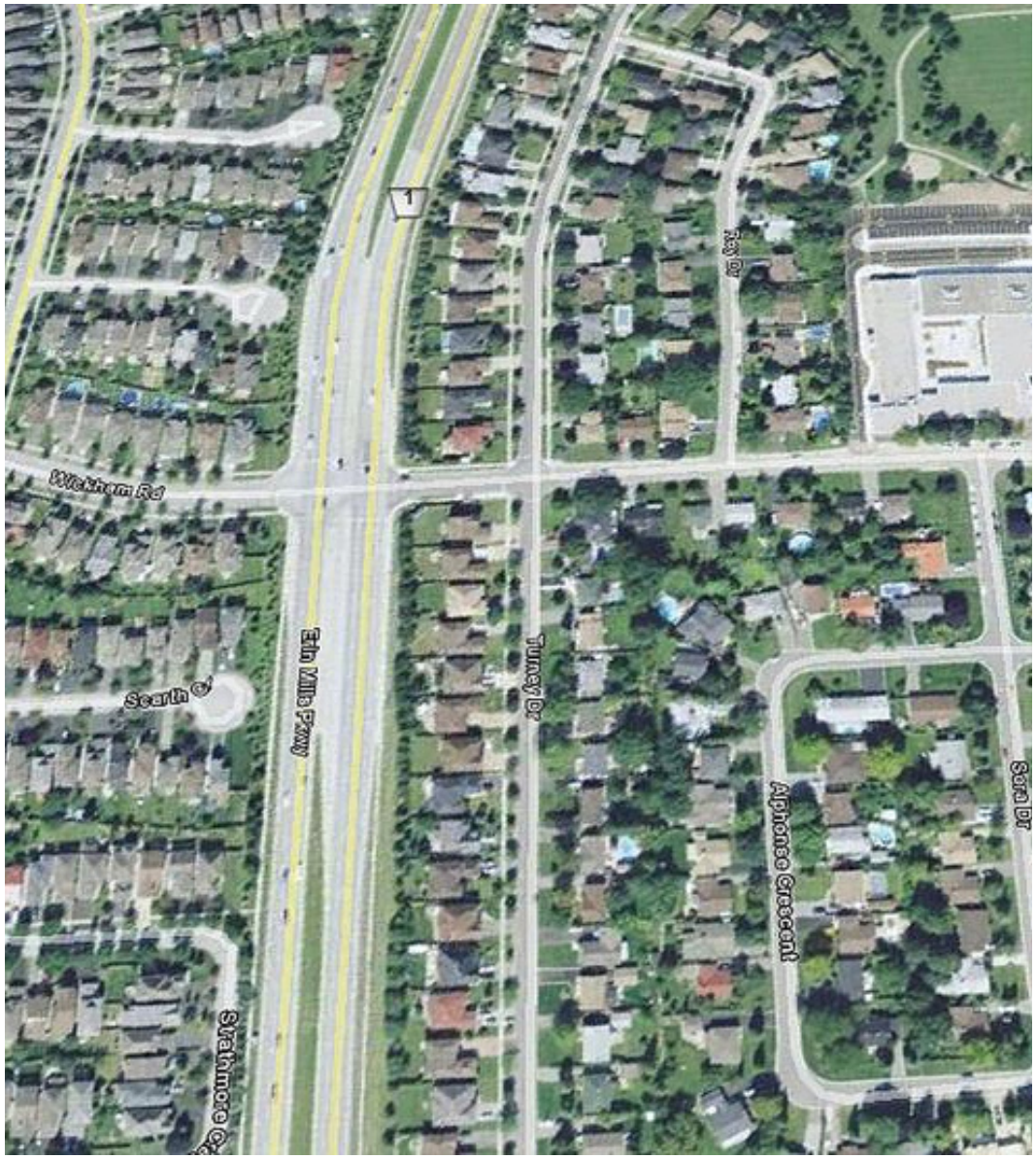
Land use

Network

Systems

- Transit
- Bicycle

Design



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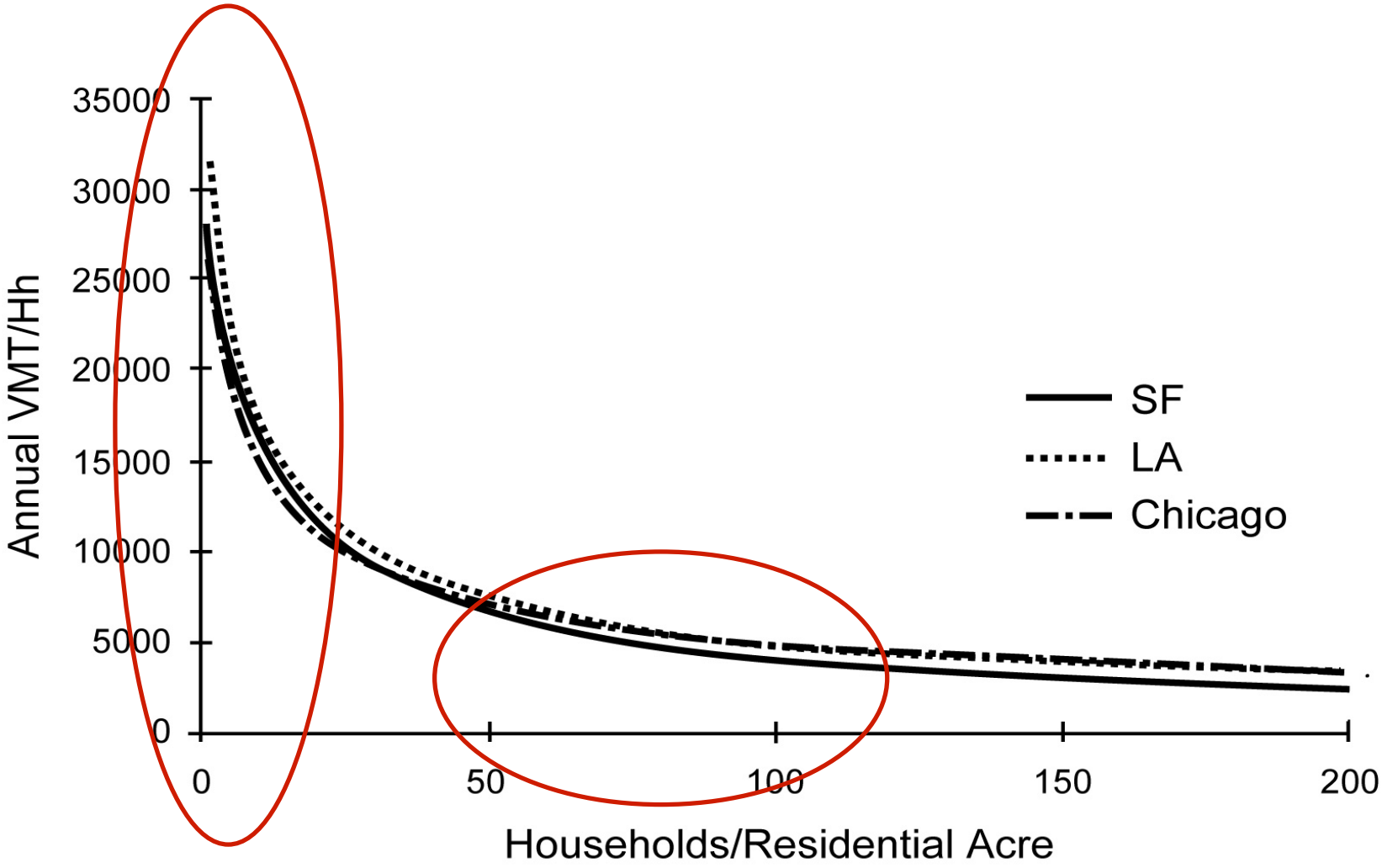
Land Use - Density



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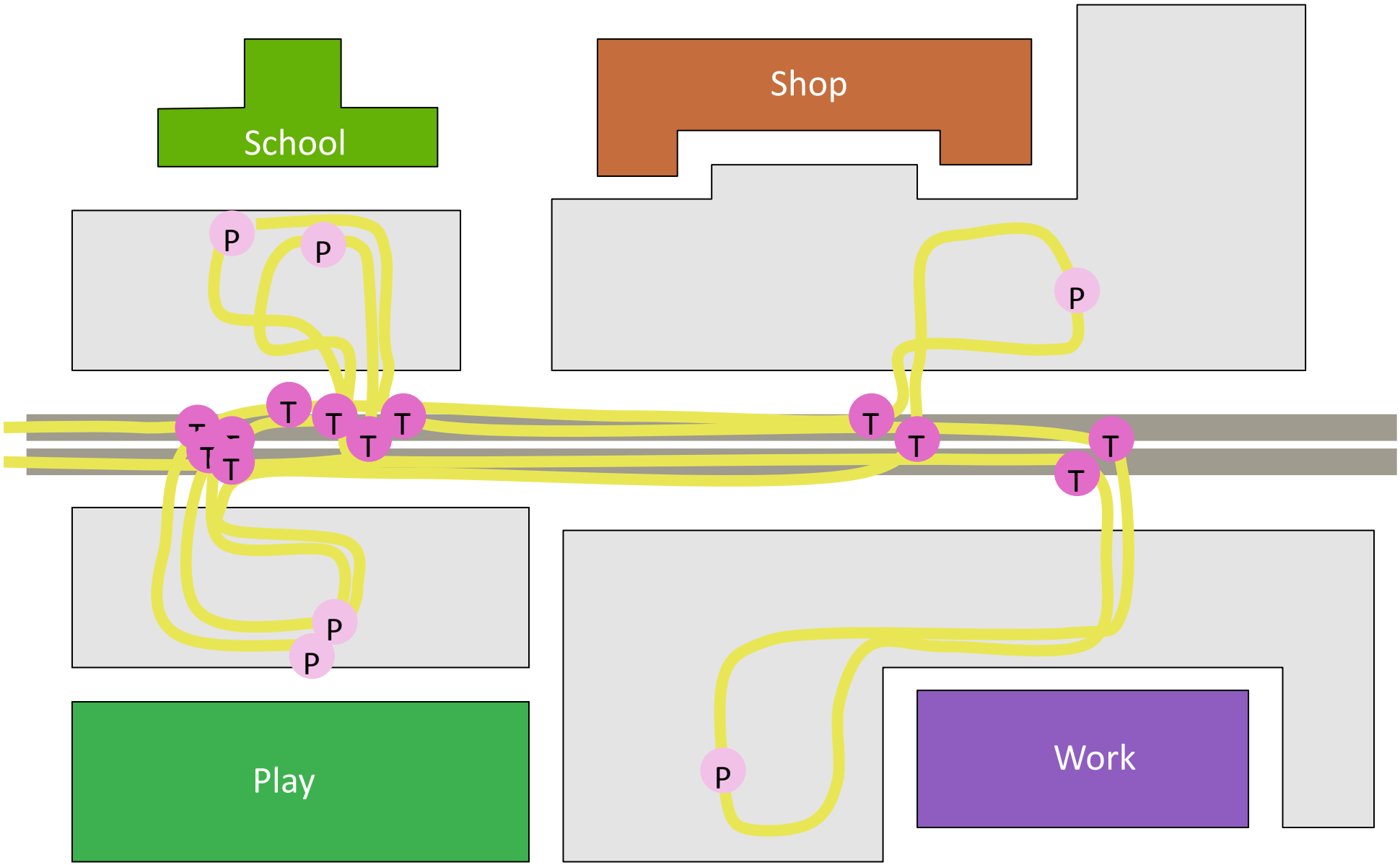

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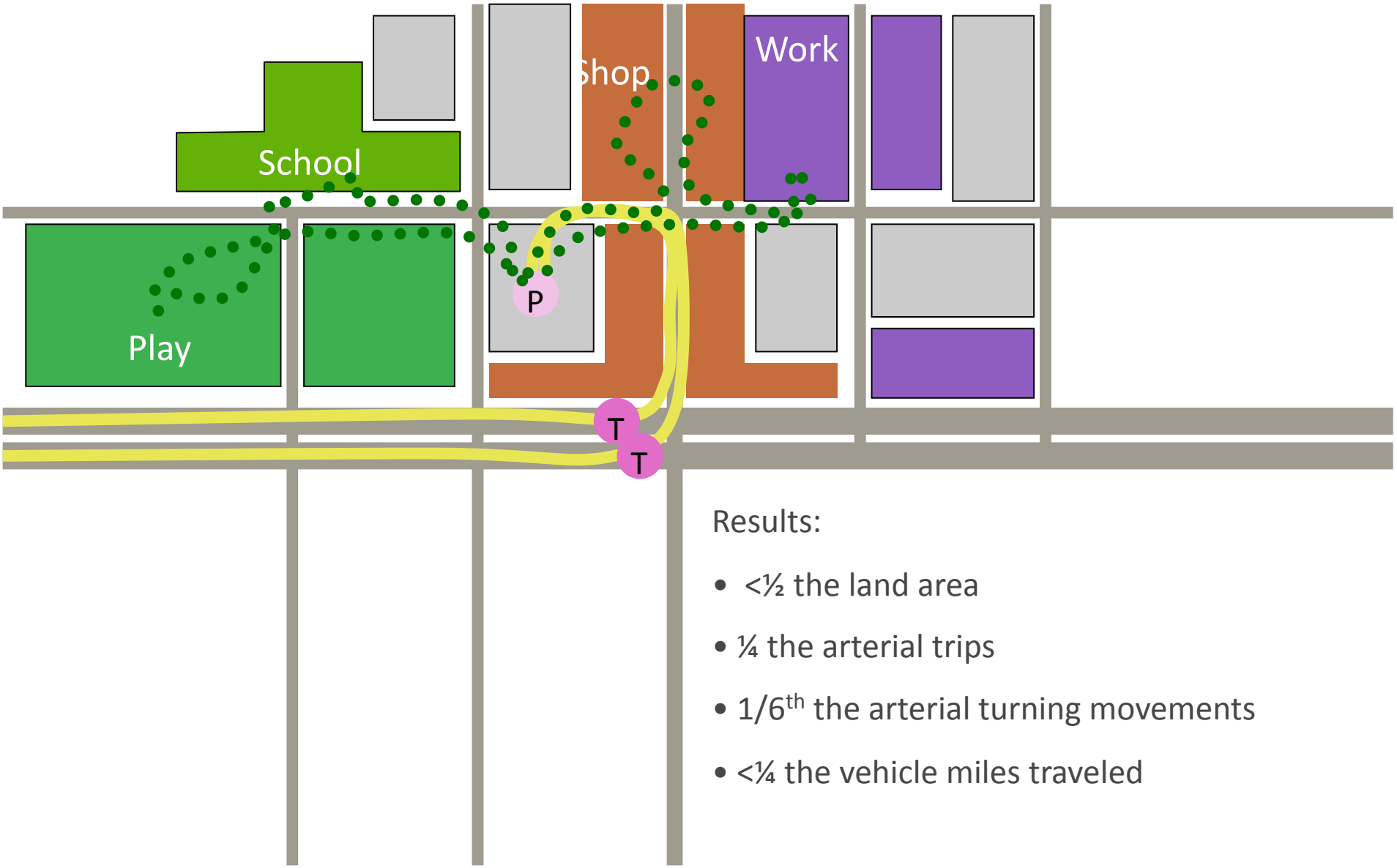

Results:

- <½ the land area
- ¼ the arterial trips
- 1/6th the arterial turning movements
- <¼ the vehicle miles traveled

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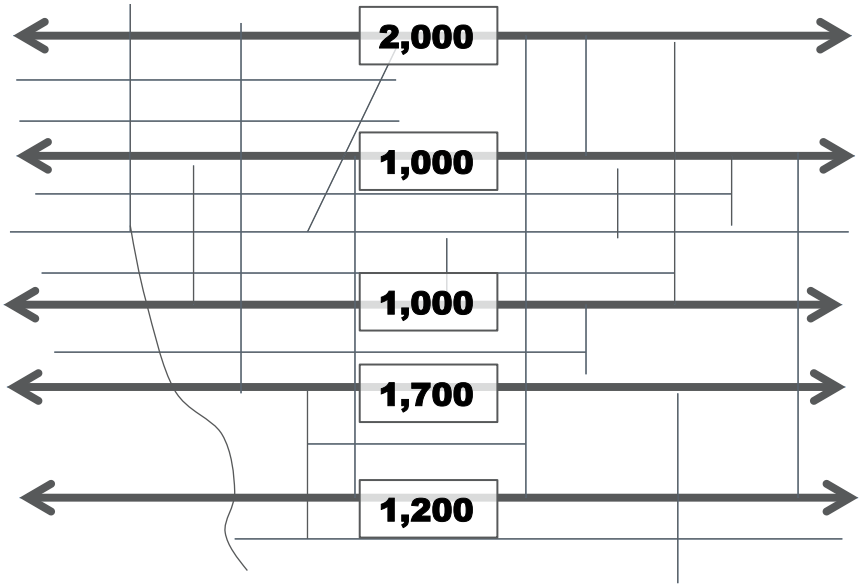
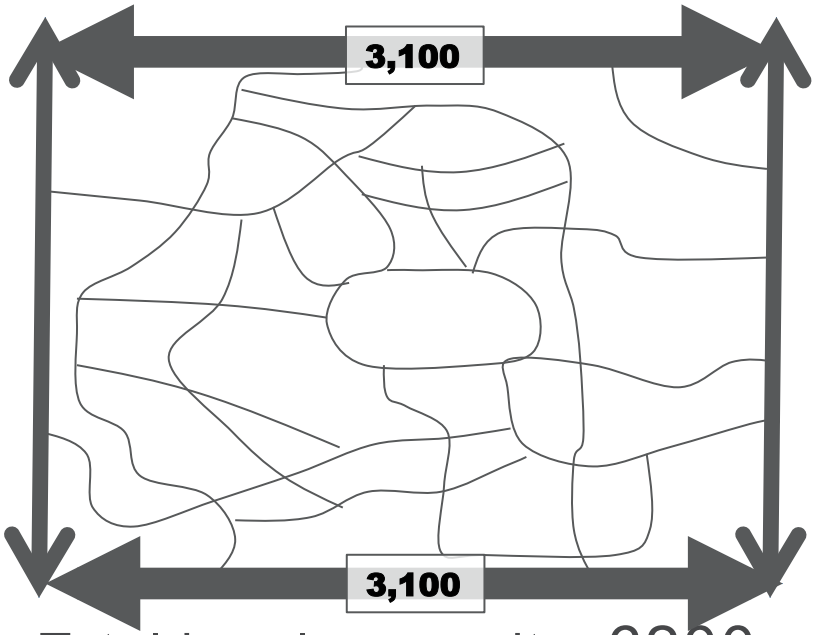
Land Use - Mix

Network Design



Total Hourly capacity: 6900



Total hourly capacity: 6200

Images: Google Streetview. Dallas Business Journal

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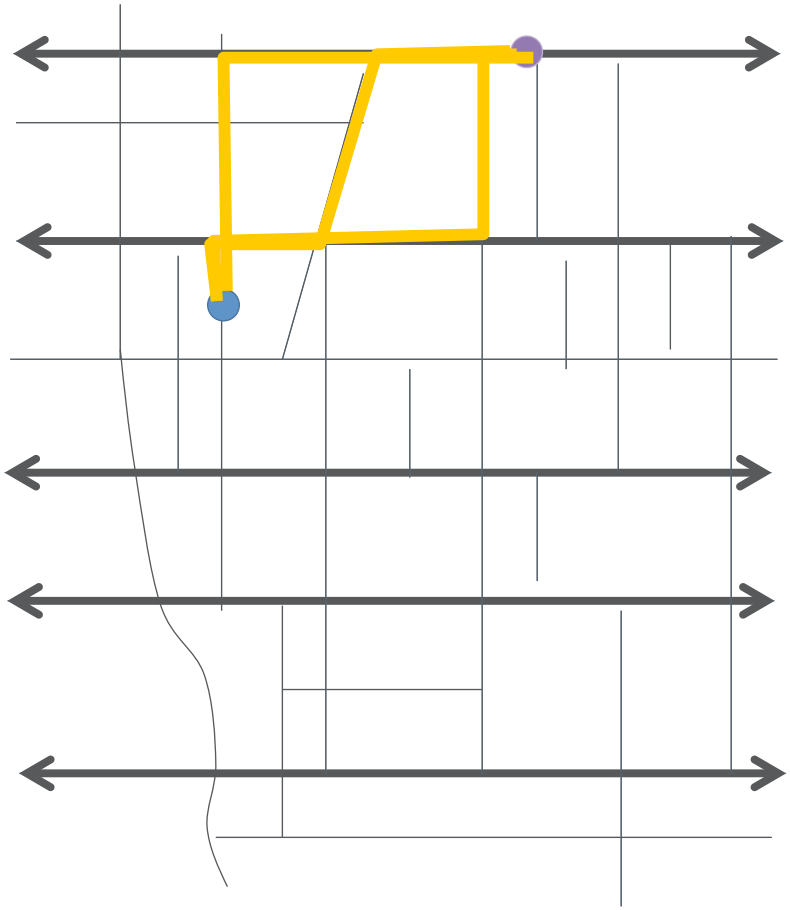
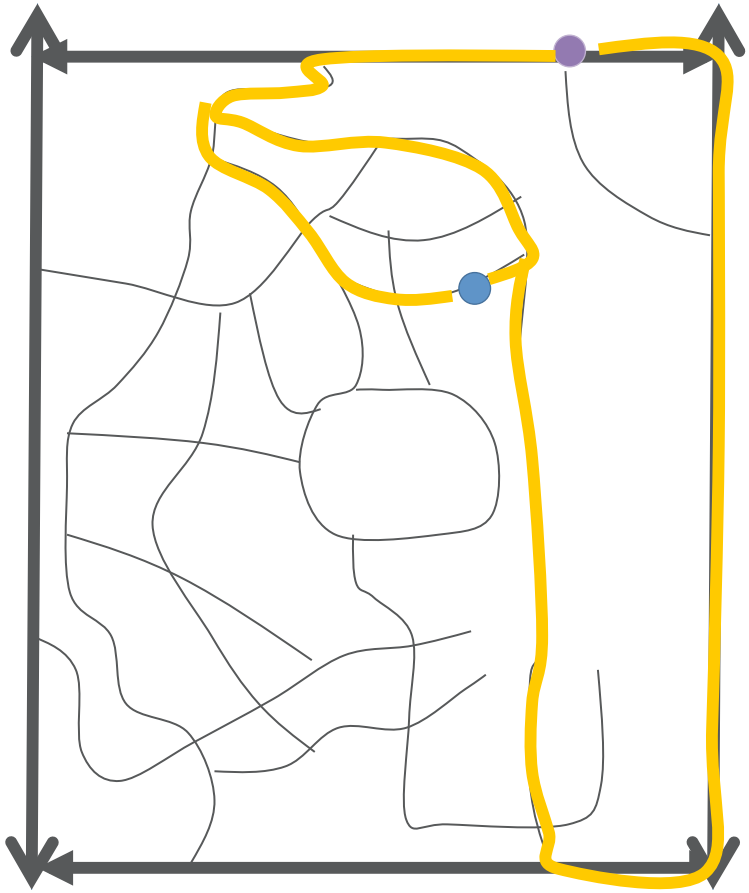
Network Design





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Systems

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Design

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Design

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Design

Image Source: Dan Burden

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Programs that **encourage** TDM

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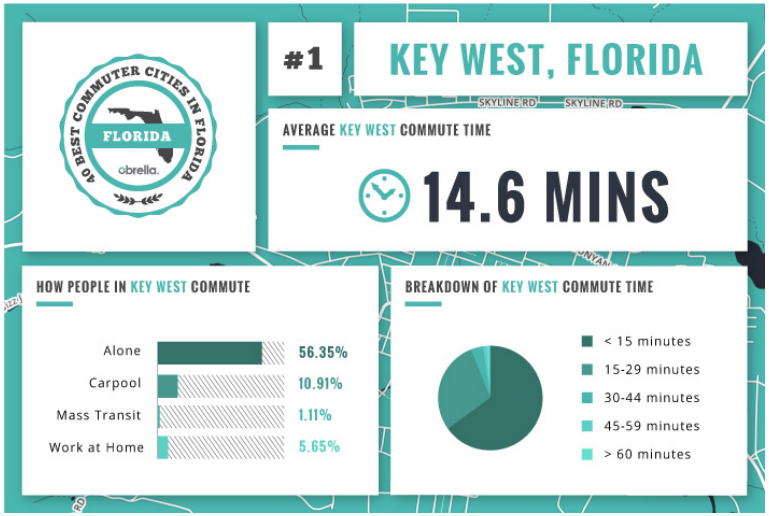
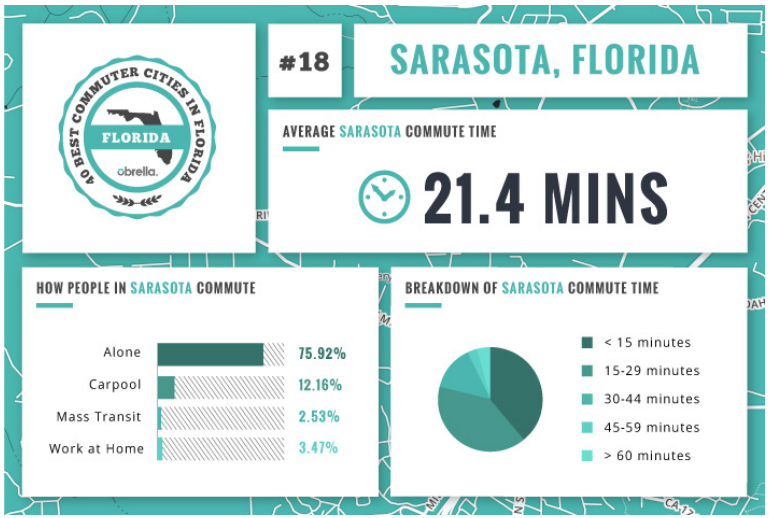
How are we doing? Commuting in Florida





obrella. presents...

40 WORST COMMUTER CITIES IN FLORIDA

RANK / CITY	AVERAGE COMMUTE TIME
1. Poinciana	39.4 minutes
2. Deltona	37 minutes
3. Sunny Isles Beach	36.3 minutes
4. Land O' Lakes	36.3 minutes
5. Cutler Ridge	36.1 minutes
6. Miramar	35.6 minutes
7. Royal Palm Beach	35.5 minutes
8. Weston	35.4 minutes
9. Penbroke Pines	35 minutes
10. De Bary	33.9 minutes
11. Wellington	33.6 minutes
12. Homestead	33.4 minutes
13. Minneola	32.9 minutes
14. North Miami	32.6 minutes
15. Florida City	32.5 minutes
16. Apopka	32.5 minutes
17. North Miami Beach	32.5 minutes
18. Oviedo	32.4 minutes
19. Clermont	32.2 minutes
20. Cooper City	31.9 minutes

RANK / CITY	AVERAGE COMMUTE TIME
21. Pinecrest	31.8 minutes
22. Miami Lakes	31.8 minutes
23. Opa-locka	31.8 minutes
24. Parkland	31.7 minutes
25. Hialeah Gardens	31.5 minutes
26. Lauderdale Lakes	31.5 minutes
27. Sweetwater	31.4 minutes
28. Aventura	31.3 minutes
29. Winter Springs	30.9 minutes
30. Ocoee	30.9 minutes
31. Tarpon Springs	30.9 minutes
32. St. Cloud	30.8 minutes
33. Port St. Lucie	30.7 minutes
34. Sunrise	30.7 minutes
35. Coral Springs	30.6 minutes
36. North Port	30.6 minutes
37. North Lauderdale	30.5 minutes
38. Lauderhill	30.5 minutes
39. South Miami	30.4 minutes
40. Miami	30 minutes

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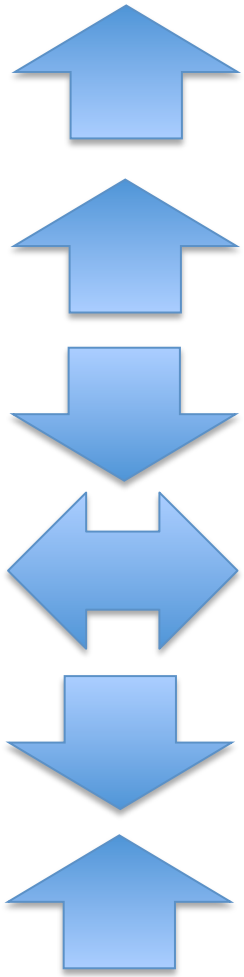
How are we doing? (FL commuter behavior 2012 – 2013)



Access to an automobile
92.6% to 92.8% (nationally 91%)

Drive alone commute rate
79.4% to 79.6% (nationally 76%)

Carpooling rate
10.1% to 9.4% (nationally 9.4%)

Walk and bicycle commuting
1.5% (nationally 2.8%)

Transit commuting
2.3% to 2.1% (nationally 5.2%)

Telecommute / work from home
4.8% to 5.1% (nationally 4.4%)

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Module II

TDM IN FLORIDA

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Module III

TYPICAL (AND ATYPICAL) TOOLS FOR TDM & IMPLEMENTATION

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Transportation Demand Management (TDM)

=

Application of strategies and policies to optimize existing systems and infrastructure by reducing travel demand or redistributing demand in time or space

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Tools for TDM

…and sticks

Carrots

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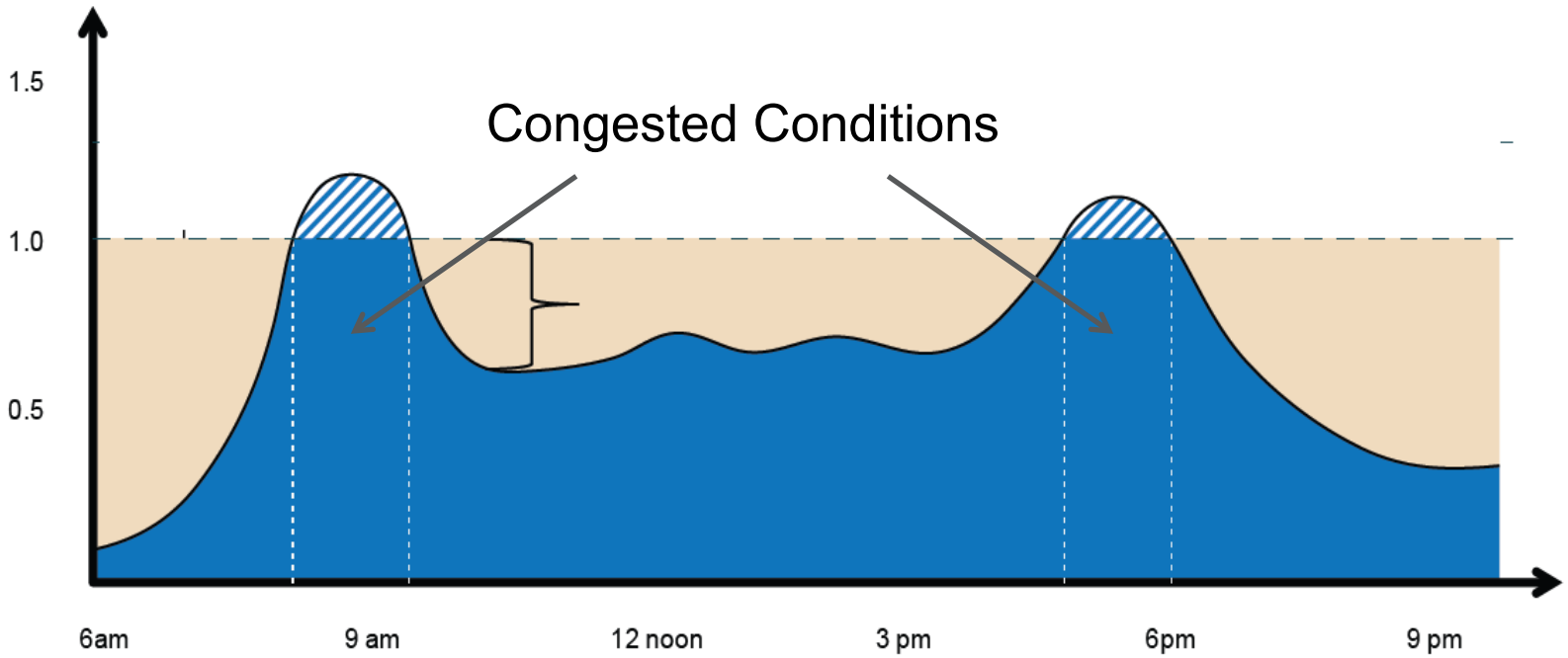
Optimizing resources



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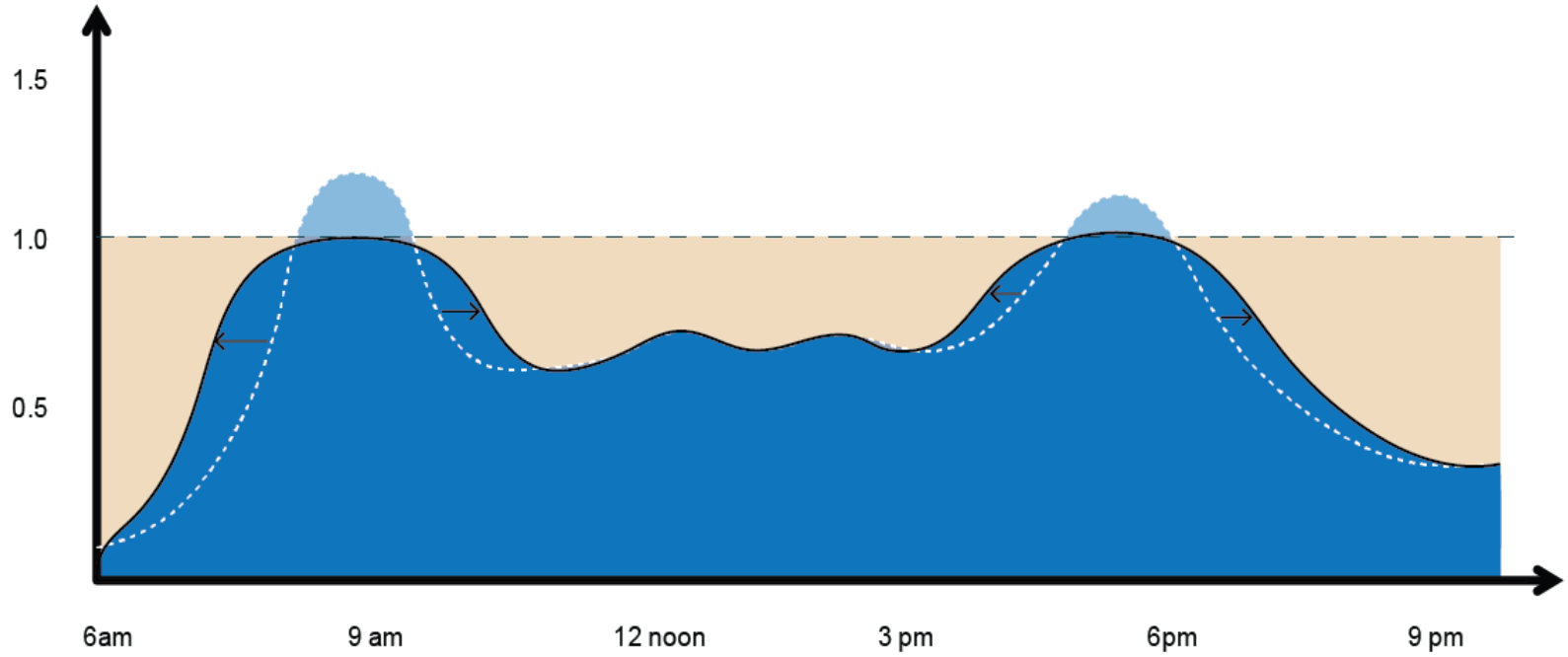
Option 1: Shift Time

Congestion pricing

Incentives



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Strategies for shifting time

- Variable pricing
  - HOT lanes
  - Parking management
    No more early bird specials!
- Alternate work schedules
  - Compressed work week
  - Flex schedule

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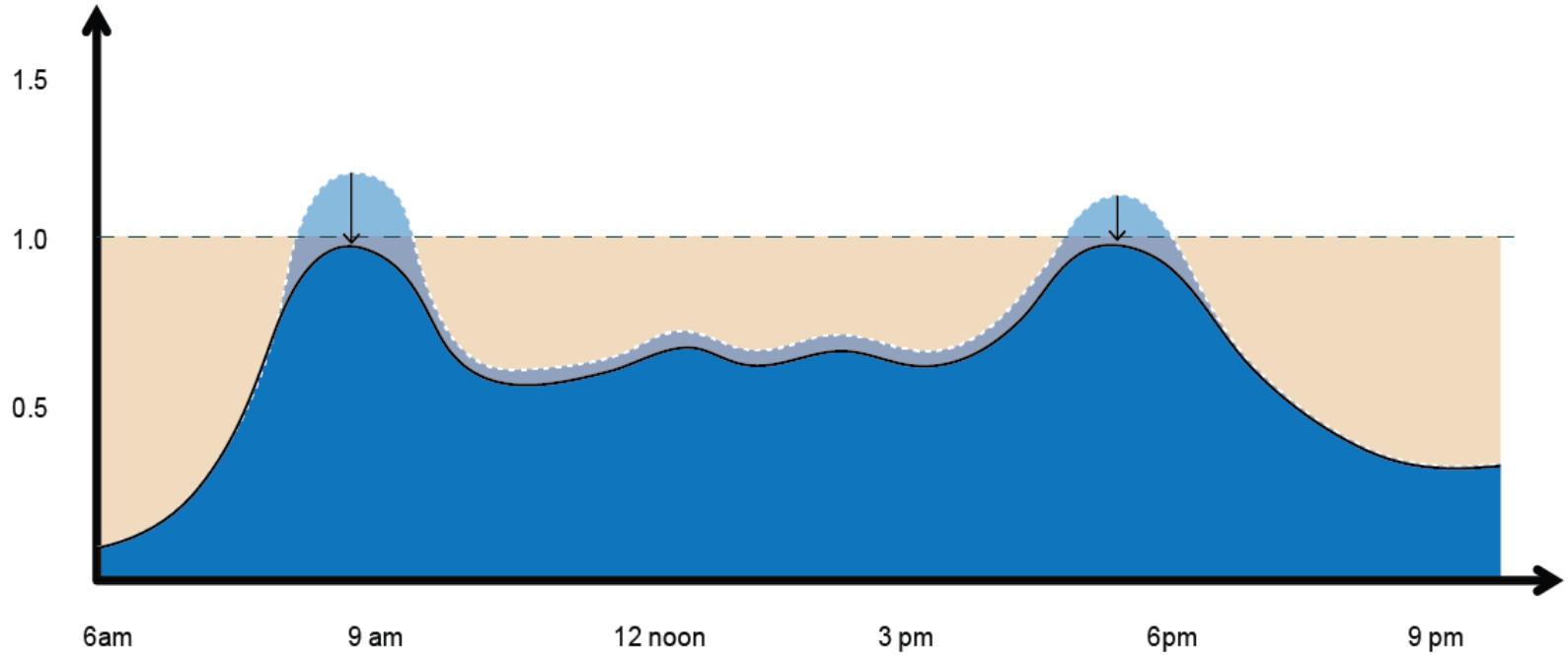
Option 2: Shift Mode



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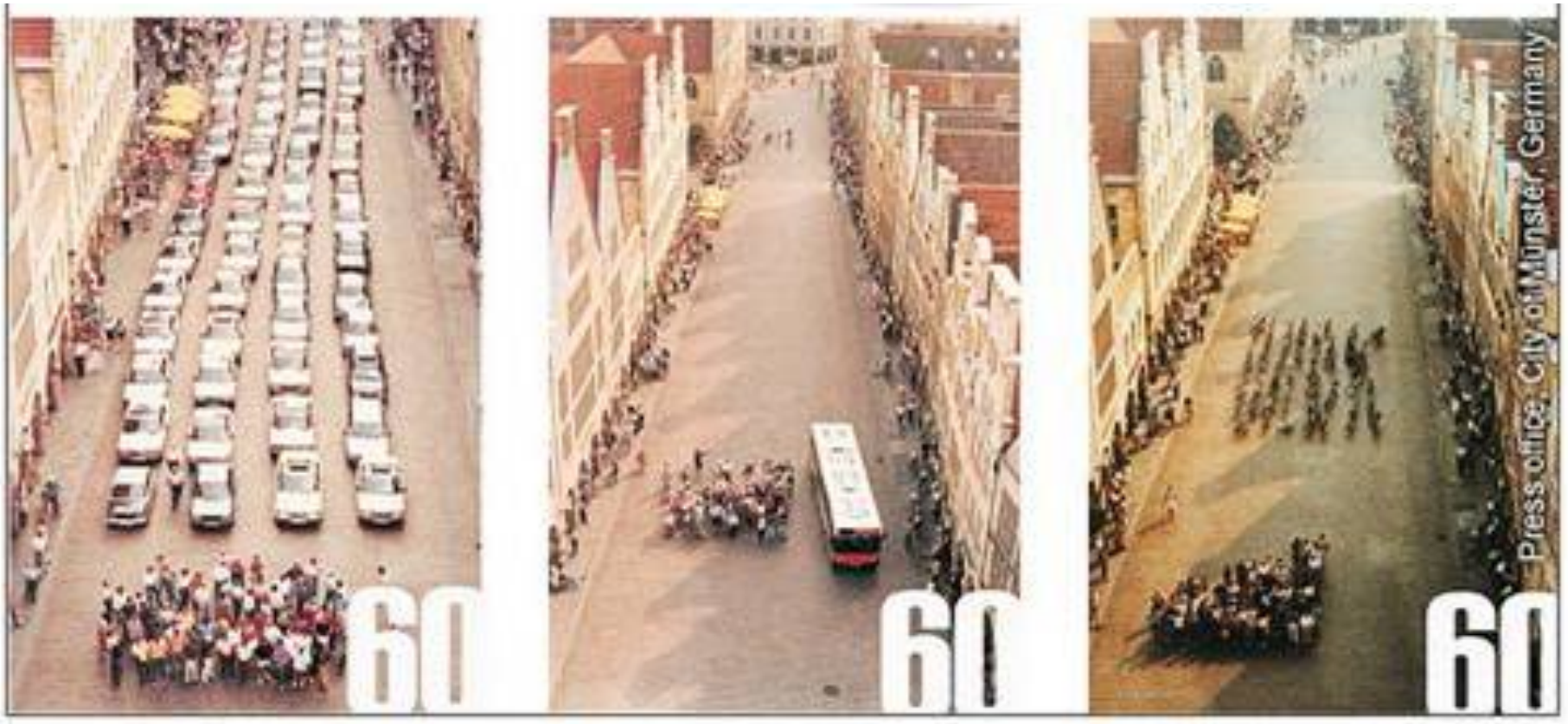
Mode exercise……literally



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Vanpool

Employer supported commute reduction programs

Local, regional, or state programs may subsidize vanpool costs

Federal transit eligibility, or pre-tax employee benefits

vRide or regional vanpools

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Carpooling

HOV travel lanes

Priority /preferred parking locations for carpool vehicles

Free or reduced parking rates

“Occasional use” passes for carpool participants

Ride share matching assistance

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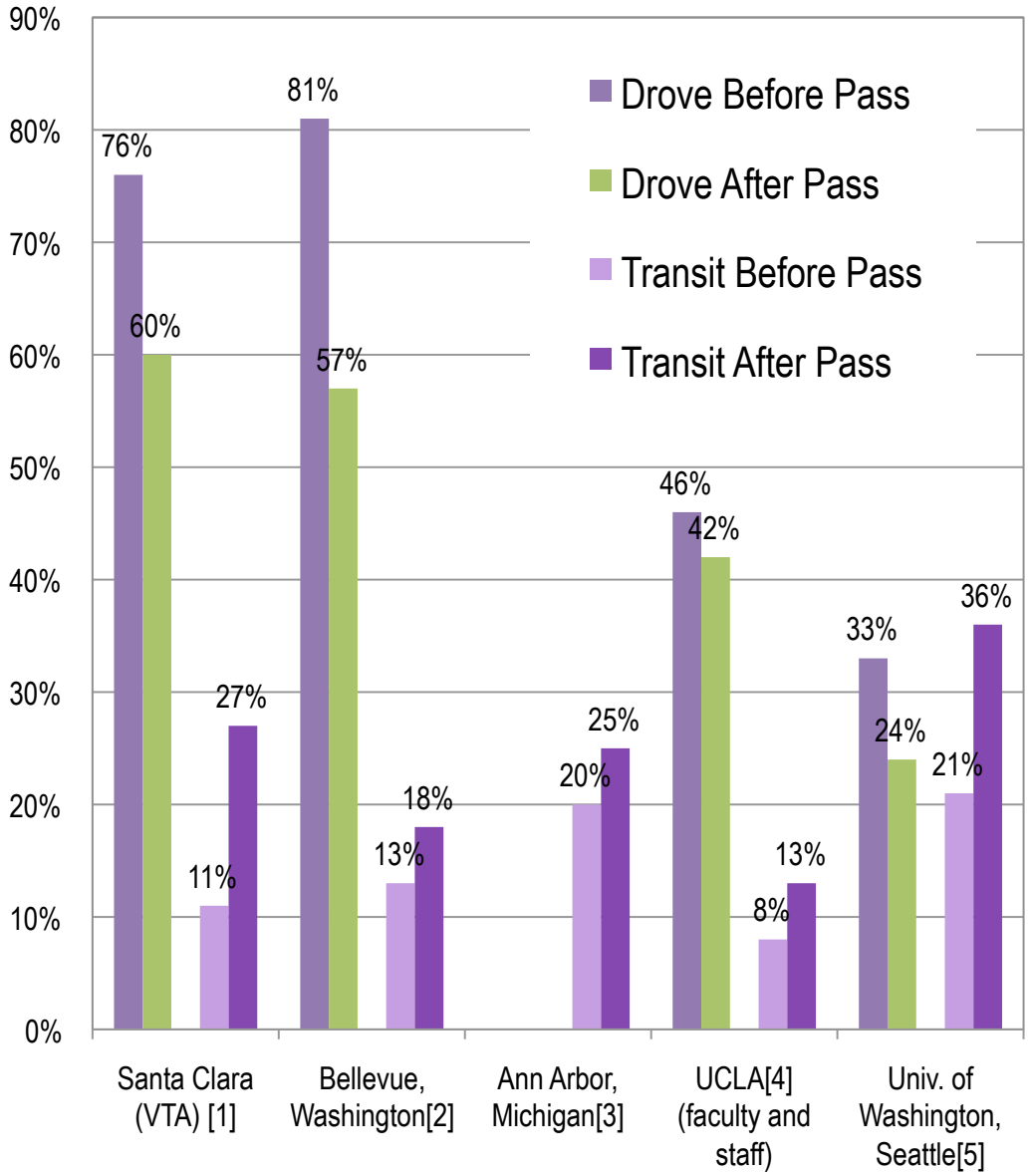
Transit Promotion

Free or reduced passes for students, downtown workers, or other employees

Transit benefits (pre-tax income)

Ride coaching



Transit Promotion cont.

Promotional activities associated with clean air challenges or festivals/ holidays

Shuttles or Park and Ride facilities

Bicycle Support

Comfortable systems

Supportive bicycle facilities (racks, lockers, showers)

Bike share

Bike stations

Bike benefits (pre-tax)

Good site design

Bike-buddy systems to help novice riders find routes

Accommodate the WHOLE trip (travel and parking)

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Housing Programs

Live near work
- Promotion
- Real estate matching

Employer assisted housing

Employer provided housing

Long-view policies

Arlington County, VA

4 decades of development

Over 16 million square feet of development

8% of the land area produces 33% of the county's income

5% growth in traffic

	Strategies	Land Use Category			
		A	B	C	D
Rideshare Marketing	Information dissemination				
	Distribute/ Display	X	X	X	X
	Employee Surveys	X	X	X	X
	Operate Vanpools		X		X
	Subsidize Vanpools				
	Match State Subsidies			X	X
	Double Match State Subsidies				X
	Backup, Reserve Maintenance Vehicle				X
	Employee Transportation Coordinator				
	Part-Time	**	X	X	
	Full-Time				X
	On-Site Ride Matching				X
	Transit Store or TMA Contribution				
	$7,970/ Year	**	X		
	$15,947/ Year			X	
	$23,911/ Year				X
	Locate/ Operate Transit Store				X
	Emergency Ride Home		***	***	X
Parking Management	Unlimited Reserved Rideshare Parking	X	X	X	X
	Market Rates for SOV Parking	X	X	X	X
	Outsource Parking Management [5]		X	X	X
	Reserved Vanpool Parking Space	X	X	X	X
	One-Half Market Rate	X		X	
	Free		X		X
	Variable Rate for Carpools (2+ Employees)				
	Market Rate	X			
	One-Half Market Rate		X	X	
	Free				X

	Strategies	Land Use Category			
		A	B	C	D
Transit Programs	Contribute to Employer Bus Shuttle				
	$7,970/ Year	**	*	*	*
	$15,947/ Year	***	**	**	**
	$23,911/ Year		***	***	***
	Operate Employer Bus Shuttle				X
	Fare Media Subsidy				
	25-50 Percent		X		
	50-75 Percent			X	
	75+ Percent				X
On-Site Construction	Bike Lockers, Racks	X	X	X	X
	Shower Facilities	X	X	X	X
	Van Accessible Garage	X	X	X	X
	Off-Street Delivery/ Loading	X	X	X	X
	Roadway Improvements	X	X	X	X
Off-Site Construction	Pedestrian Systems	X	X	X	X
	Direct Metro Connections				
	Existing Knockout Panels	X	X	X	X
	New Connections			X	X
	Intersection Improvements			X	X
	New Facility Construction				X
	New Metrorail Station				X
Employee Policies	Flex Time	X	X	X	X
	Telecommuting	X	X	X	X
	Trip Generation Restrictions		X		X
	Transportation Management Organization	X	X	X	X
Monitoring & Compliance [6]	Contribution				
	$1,000/ Year	**	*	*	*
	$5,000/ Year	***	**	**	**
	$10,000/ Year		***	***	***
	Performance Guarantees				X
	Zoning Compliance Fines	X	X	X	X
	Contingent Phasing			X	X

A. Development plan is consistent with the General Land Use Plan (FLUP), and no traffic problems are projected related to the development and its surroundings

B. Development plan is consistent with the GL"UP, however, traffic problems are projected related to the development and its surroundings

C. A GLUP amendment is requested for a non-conforming development plan, no traffic problems are projected however

D. A FLP amendment is requested, and traffic problems are projected

Shifting mode

Pop quiz!

What is the most significant barrier to alternative commuting modes?

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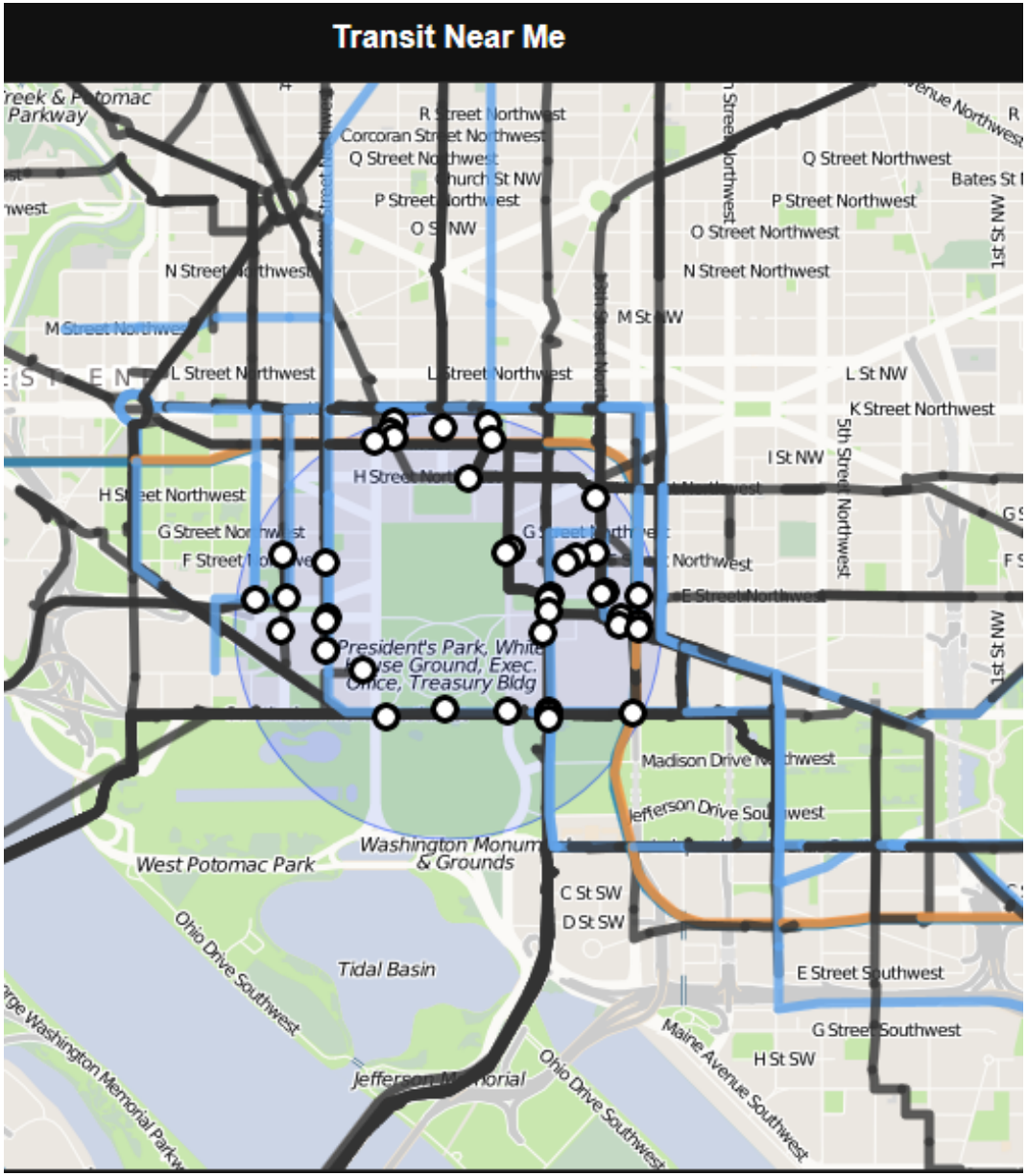
Information!

How alternate systems work

Where they go

How to use them



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Technology

Online/ App supported route planning

Real time information - ubiquitous

Supported ride-matching services or online forums

Open data access for innovative apps

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Guaranteed Ride Home

Low cost, big impact

Gives travelers confidence to use other modes

“in case something happens”

Very rarely called up

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Challenges and Events

Bike to Work Day

Car Free Day

Commuter Challenge

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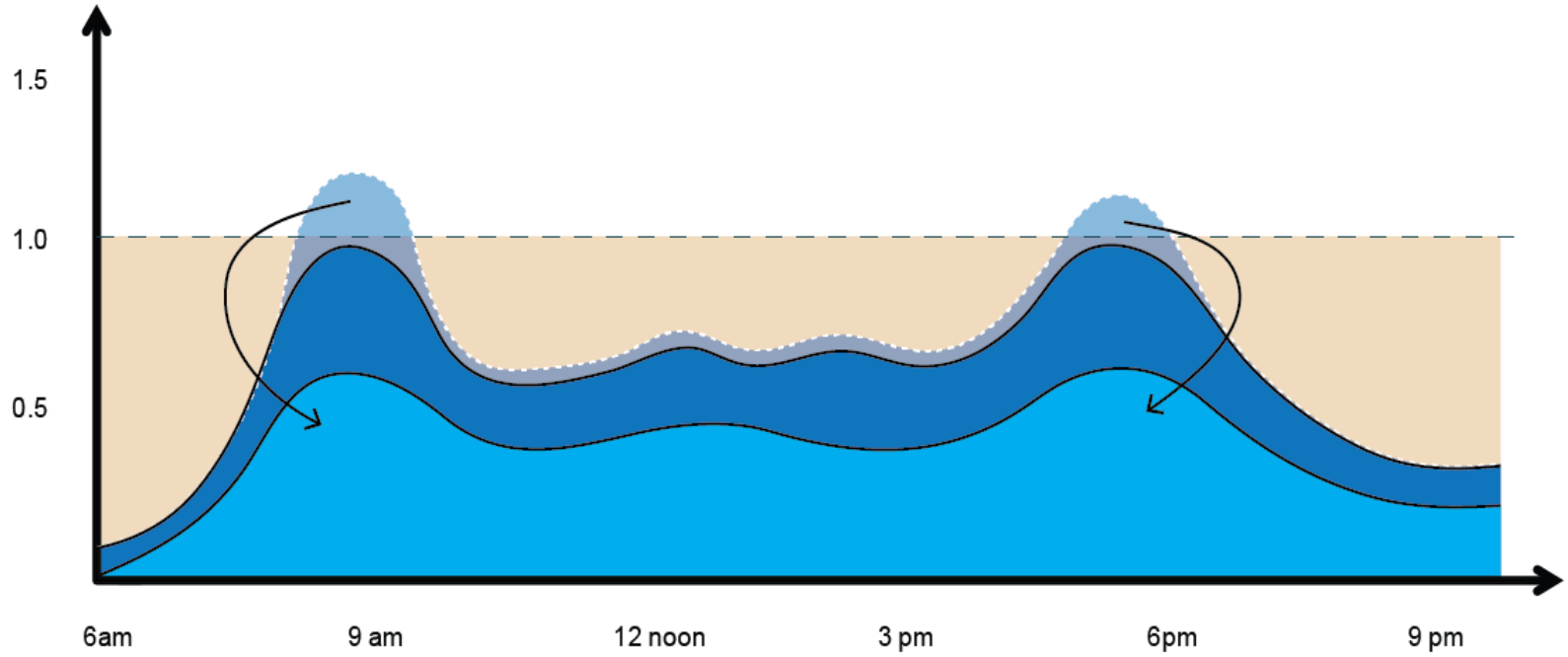
Option 3: Shift Routes

Congestion charges

Demand-responsive pricing



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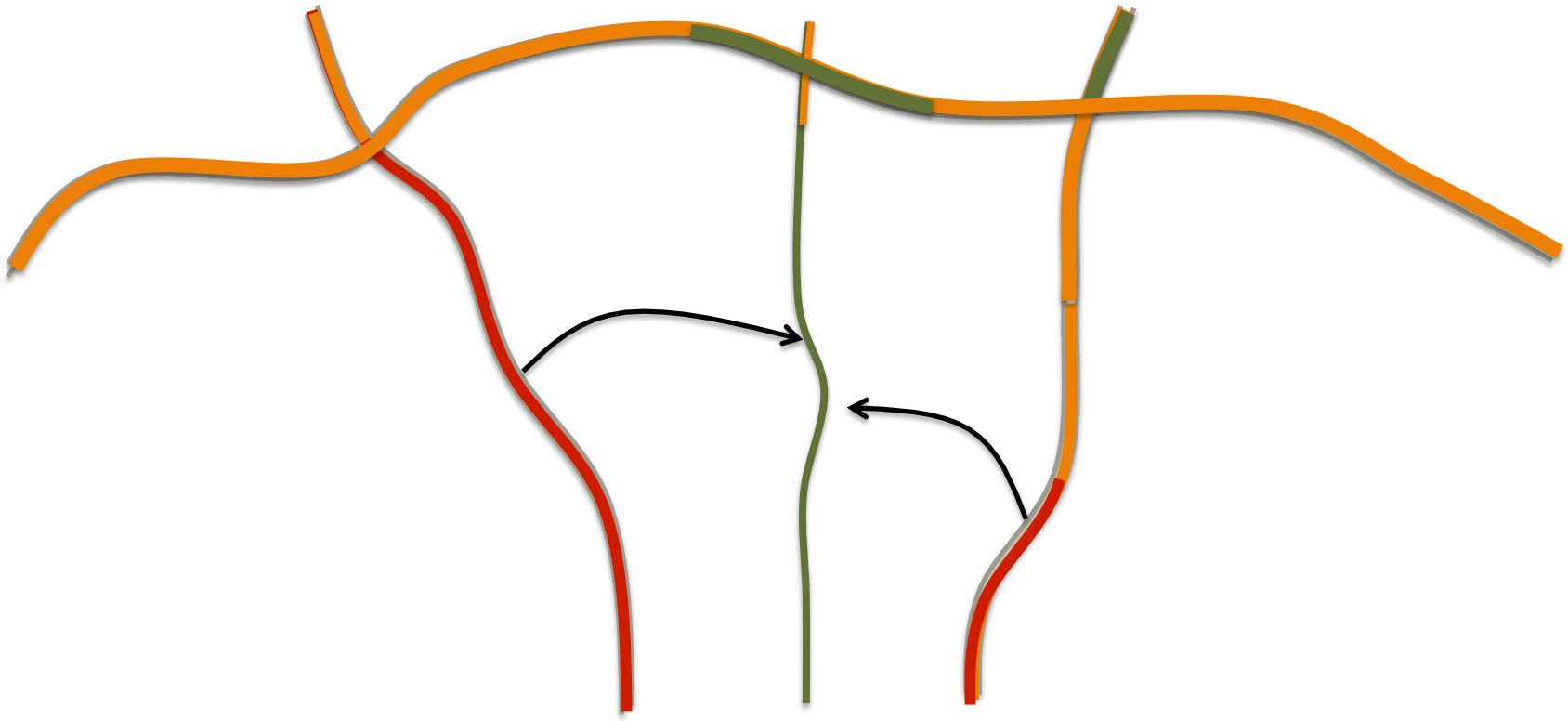
Option 3: Shift Routes



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Strategies for shifting routes

- Tolling
- ITS
- Route planning
- Remote parking and/ or variable pricing

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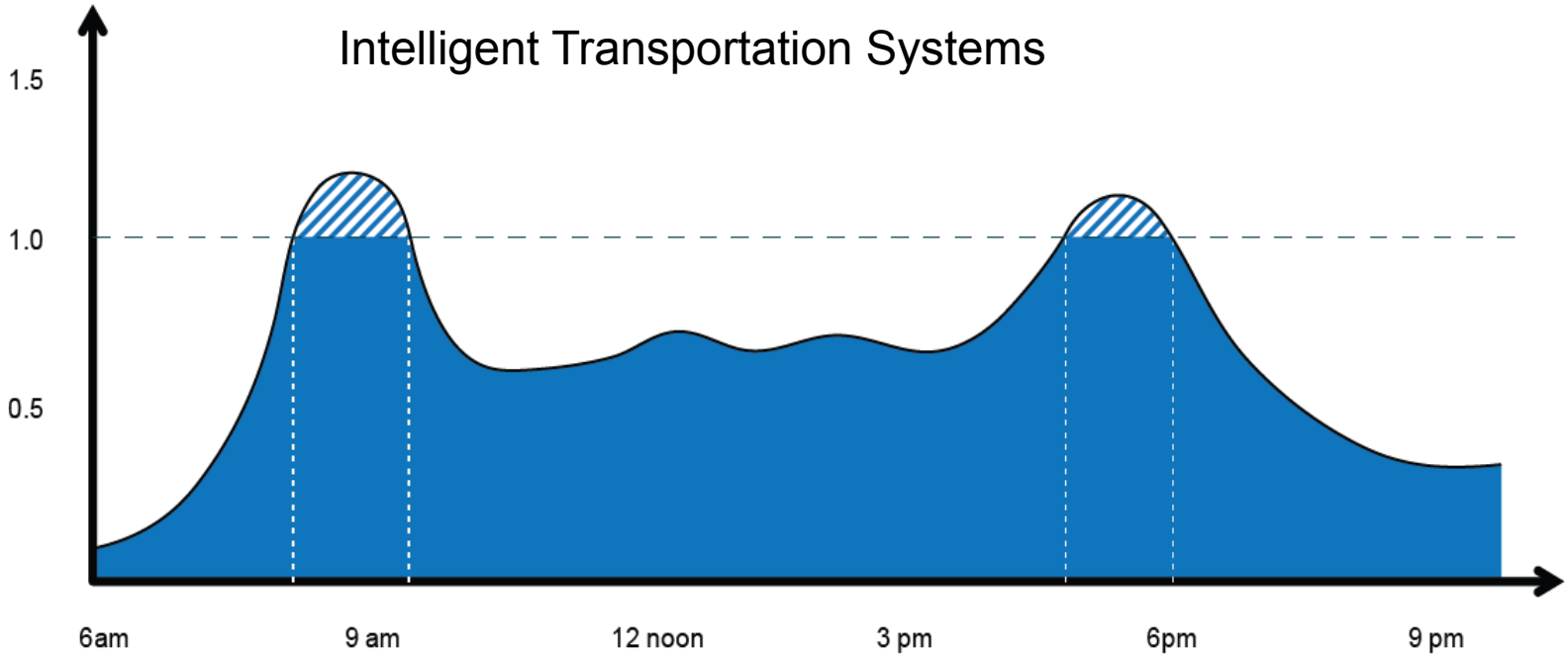
Option 4: Increase Operational Efficiency

Trip not taken

Intelligent Curbside Management Systems

Intelligent Transportation Systems



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Telecommuting

Research has shown:

Enhances productivity

Decreases absenteeism

Increases employee morale

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Curbside management

- Variable pricing
- Monitoring utilization and occupancy
- Smart meters
  - Smart payment
  - Smart communication

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10-30%

Of traffic congestion in urban areas are cars circling looking for a place to park.

Source: Rich Renomeron

Car Share and TNCs

Autos are parked 90-95% of the time

Shared vehicles reduce necessity of private auto, increase auto availability

Each car share vehicle eliminates demand for 15 private vehicles and each car share member reduces their driving by an average of 50%

Transportation Networking Companies match needs with resources

Photo Credit: Flickr User AFagan

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Parking

Source: Rich Renomeron

5 to 8

Parking spaces exist for every
1 registered vehicle

Source: Rich Renomeron


Parking is a sunk (and sometimes unrecoverable) cost
$20,000
$20,000
$20,000
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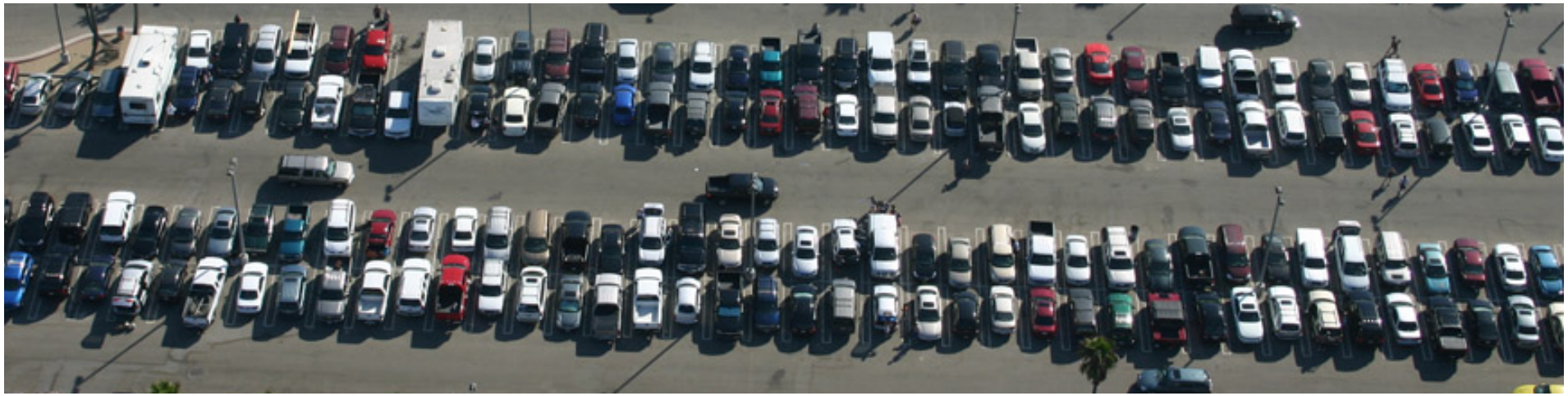
Thank you, Don Shoup!



Parking Management

$20,000/ space construction
@ 5% interest for 20 years

$31,650/space

$132/month capital
+ $ 70/month O&M

$200/month/space to break even

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What would commuters rather have?

- $200 in “Free” Parking
- $200

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Parking Management

Unbundle parking from leases, contracts or units

Parking cash-out programs

Parking permit reform (buy only what you need)

Demand-based pricing and variable pricing

Tailor parking requirements

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TDM Cost Effectiveness v. Alternatives

Strategy	Details	Employee Vehicle Trip Reduction Impact
Parking Charges[1]	Previously Free Parking	20%-30%
Information Alone[2]	Information on Available SOV Alternatives	1.4%
Services Alone[3]	Ridematching, Shuttles, Guaranteed Ride Home	8.5%
Monetary Incentives Alone[4]	Subsidies for carpool, vanpool, transit	8-18%
Services + Monetary Incentives[5]	Example: Transit vouchers and Guaranteed Ride Home	24.5%
Cash Out[6]	Cash benefit offered in lieu of accepting free parking	17%

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Implementation of TDM

- Employers
- Regional bodies (MPOs)
- Transit Authorities
- State programs or support

Quicken Loans
Engineered to Amaze

COMMUTER CONNECTIONS
A SMARTER WAY TO WORK

TheRide

GEORGIACOMMUTEOPTIONS

BROUGHT TO YOU BY:

CLIFTON CORRIDOR
Transportation Management Association
CCTMA

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Transportation Management Organizations (or Associations) - TMO

Pooled resources – economies of scale

Organize and disseminate information more broadly

Allow small employers to offer comparable benefits

TDM FOR FREIGHT

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TDM Tools for Freight

- Change rouge (designate truck routes)
- Change modes (truck or rail)
- Change hours (pick up and delivery)
- Change operations(ITS, facilities, parking)

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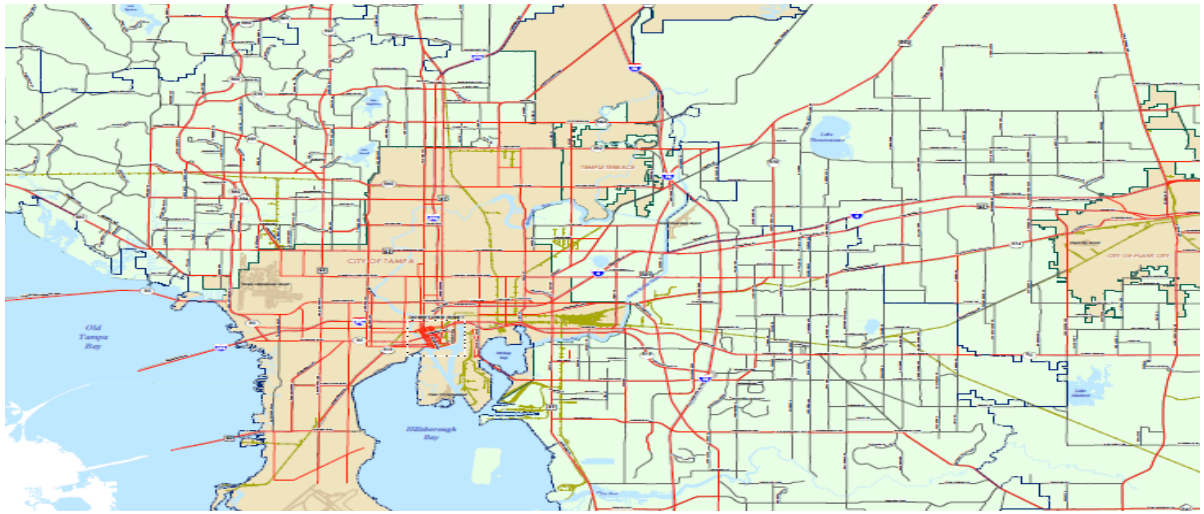
Change Route

- How: Designated routes
- Benefits:
  - Minimize wear and tear
  - Focus design and maintenance
  - Reduce impacts to residents
  - Separate truck traffic from other users

- Challenges
  - Can have controversy over selection of routes
  - Last mile connections still necessary



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Mode Shift

- How
  - Investments in intermodal hubs
  - Protection of rail corridors
  - Rail improvements (CSX National Gateway)
- Benefits
  - Rail is less expensive than truck for long trips
  - Fewer emissions
  - Reduced VMTs and congestion

- Challenges
  - Truck is necessary for last mile
  - Resident resistance to additional train traffic

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Time Shift

- How
  - Incentives for off peak deliveries / penalties for peak delivery
  - Education and outreach to receivers
- Benefits
  - Reduce truck congestion, idling and delay and associated costs
  - Reduce shipping costs
  - Improve access to loading zones and docks

- Challenges
  - Residents may resist nighttime deliveries
  - For small business, can be a challenge
  - Need to change distribution center hours in response

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Change Operations

- ITS
  - Routing information
  - Real time congestion and bottlenecks
  - Smart dock management and scheduling
- Freight villages
  - Protected area for industrial activity
  - Can enable “trailer drops” reducing trips
  - Can redistribute from larger trucks to smaller.
- Parking and curbside management
  - Adequate loading zones
  - Better locations
  - Longer/appropriately sized
  - Metered for turn-over
  - Enforcement

Photo Credit: Flkr User Kevin Jaako

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Freight TDM Strategies

TDM Strategy	External Costs					Private Costs		Difficulty to Implement
	Congestion	Health	Safety	Noise	Livability	Shipper & Receiver Costs	Carrier Costs	
Anti-idling Policies	0	+	0	+	+	0	+	Low
Designation of Truck Routes	+	+	+	+	+	+	~	Medium
Modal Shift	~	~	~	~	~	~	~	High
Off-Peak Pickup and Delivery	+	+	+	-	~	~	+	Medium
Restrictions on Nighttime Delivery	-	-	~	+	~	~	-	Medium
ITS Solutions	+	+	0	0	+	+	+	Low
Land Use Strategies	+	+	+	+	+	+	+	Medium /High
Parking Policies	+	+	+	+	+	+	+	Low
Planning Information Strategies	+	+	+	+	+	+	+	Low

Beneficial Impact	+	Detrimental Impact	-	No Impact	0	Dependent upon other variables	~

SOURCE: Smart State Transportation Institute, "Getting the Goods Without the Bads"

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EXERCISE

- **Which tools(s) could have the greatest effect at a reasonable cost?**
- **Who must primarily lead (state, region, municipality, or private)? Who are partners?**
- **What is necessary for implementation?**

Tools

- Peak period pricing
- Route selection / encouragement
- Vanpooling or carpooling
- Ridesharing
- Bicycling
- Transit
- Rail and intermodal hubs
- Street grid / network design
- Land use mix
- Parking management
- Information
- Promotions and events
- Technology and apps

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Module III

STATE ROLE IN TDM

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How does the state play a role in TDM?

Funding

Policies

Project Design

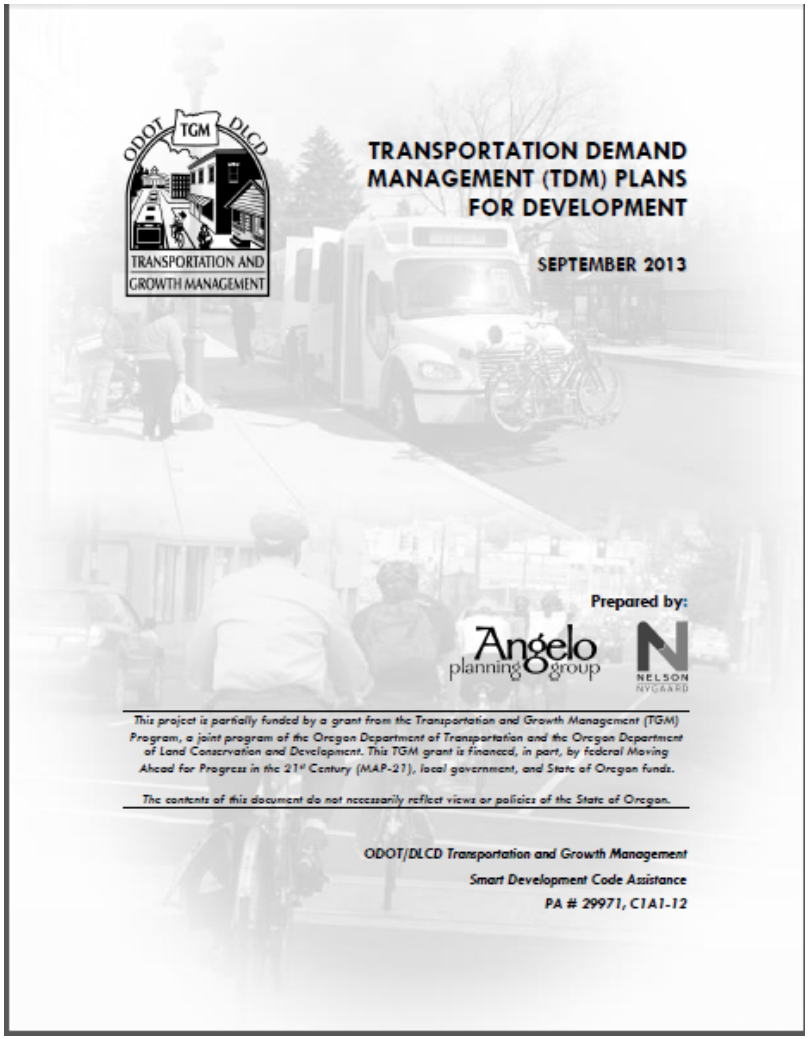
Access Approval

Capital Construction

Technology

Transit Coordination
Modal Integration

Marketing/ Messaging



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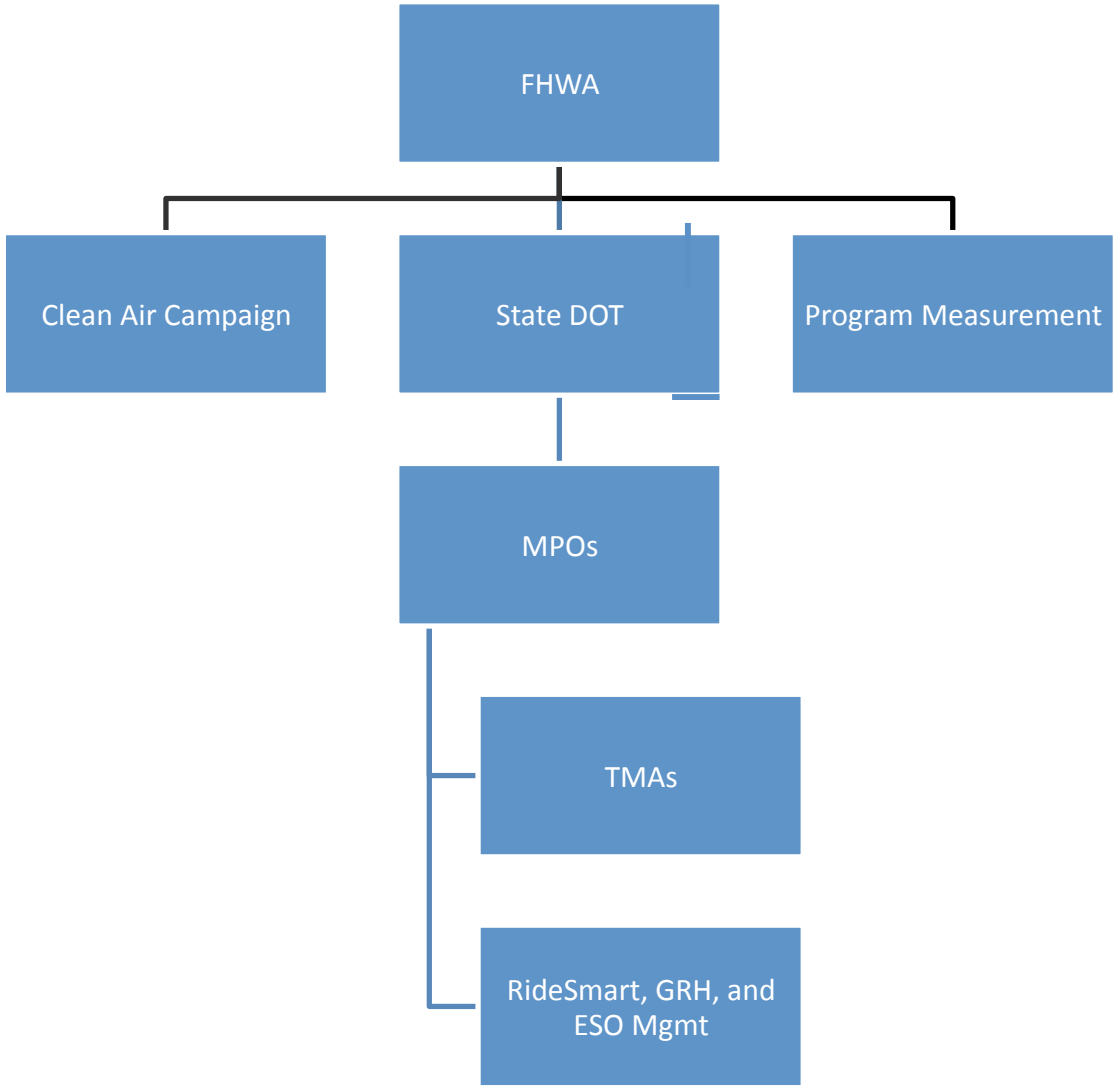
Funding



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Funding, Cont.

Statewide Model- New Jersey Transportation Management Associations

Funding passed through to local TMA's whose workplans are approved at the state level

Leverages local knowledge, enables targeted TDM solutions

nextGen
the next generation of TMA
jointoday

ezride

Pooled resources – economies of scale

GREATER MERCER TMA
Discover Greener Paths

More hands-on assistance for local employers/ program

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Policies

Policy	Example
Modal targets	Increase bicycle commute share to 3%, transit to 15% etc.
CO2 Emissions Reductions	Reduce transportation-related emissions by 15% below year 2000 levels
Accessibility Targets	% of people living within proximity to transit, necessary goods and services
TO integration into planning and construction	Model effect of TO when planning. Inclusion of set-aside funds for TO during large projects with travel disruption

Florida Policies

Florida Transportation Vision for 2060 Goals:

- Economic competitiveness
- Community livability
- Environmental Leadership
- Safety and Security
- Maintenance and Operations
- Mobility and Connectivity

Potential Indicators:

- Number of counties participating in development and implementation of regional visions
- Community polling on livability issues including satisfaction with public transportation and other mobility options
- Combined cost of housing and transportation as percentage of household income
- Travel time
- Walkability indicator

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Project Design

Model effect of investment in TDM during alternatives analysis for large projects

EX: I-235 in Iowa

Alternative 1: TDM Investments (new TMA downtown) with IT infrastructure (ramp metering) and capacity improvements

Alternative 2: Significant additional capacity (including taking residences for needed ROW to accommodate)

Access Approval

Institute access management plans to corridors built to capacity

Create policies requiring access management for roads facing reconstruction, or when parcels redevelop

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Capital Construction

Incorporate TDM programs and funding into construction budgets to alleviate impact on commuters

EX: S.R. 826 (Palmetto Expressway) and SR 836 (Dolphin Expressway

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Transit Coordination

IGAs and joint agreements for coordinated service planning

Regional fare & transfer policies

Modal Integration

Transit Hubs:

- Where transit, bike facilities, pedestrian-oriented infrastructure, car share and other modes align

Source: http://ccc-consult.objective.com

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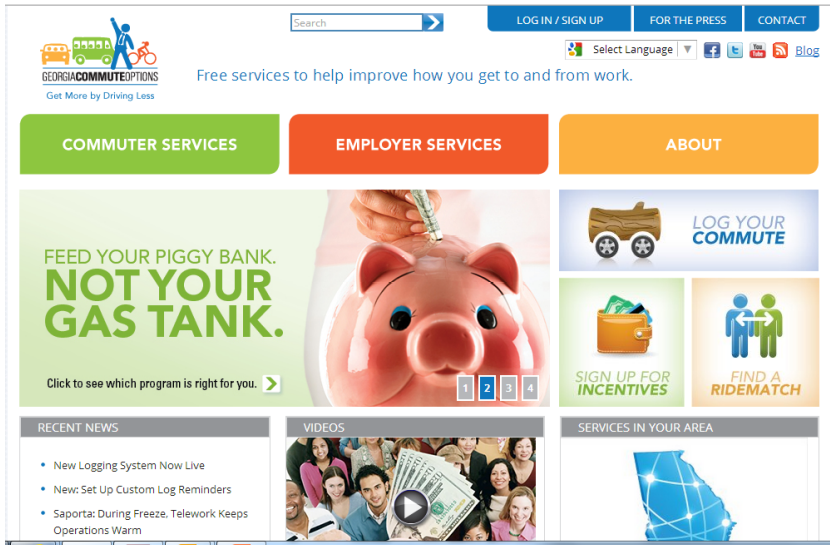
Marketing and Messaging

- Websites
- Print media
- Web ads (Pandora, Hulu, etc)
- Radio
- TV ads



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Most common TDM activities encouraged by state DOTs

- Bicycling 95%
- Carpooling 88%
- Promotion of Transit Use 83%
- Walking 80%
- Vanpooling 80%
- Ridematching 68%
- Telecommuting 49%
- TDM Marketing 49%
- Employer-based
- Outreach/ Programs 46%
- Special Events Planning 41%
- Commuter Incentives 44%
- HOV Lanes/ Priority 44%
- Transit-oriented Dev't 39%
- Trip Chaining 22%
- Congestion/ Road Pricing 12%
- Parking Pricing/ Mgmt 7%
- Pay-As-You-Drive Insurance 2%

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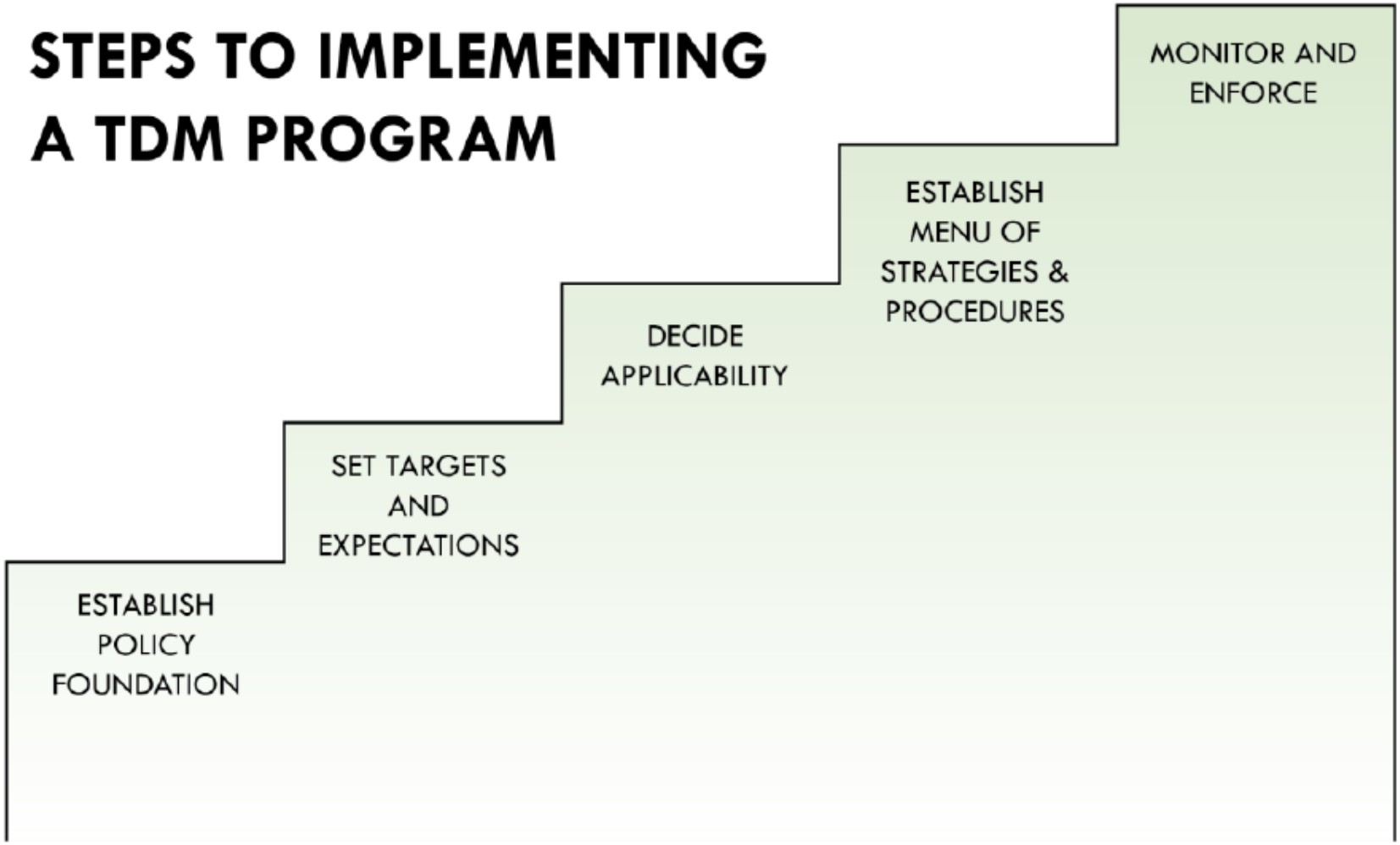
Implementing TDM



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Implementing TDM

FDOT Policy

The purpose of this policy is to ensure that the Florida Department of Transportation (Department) considers transportation demand management (TDM) strategies in all studies, plans, programs, functional areas, and in employee benefit programs.

Florida Department of Transportation

CHARLIE CRIST
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

STEPHANIE C. KOPELOUSOS
SECRETARY

POLICY

Effective: September 20, 2007
Office: Transit
Topic No.: 000-725-050-h

References: s.341.041, F.S.;

TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

The purpose of this policy is to ensure that the Florida Department of Transportation (Department) considers transportation demand management (TDM) strategies in all studies, plans, programs, functional areas, and in employee benefit programs. TDM is defined as a set of specific strategies that promote increased efficiency of the transportation systems and resources by promoting and providing a range of local or regional travel-related choices to influence individual travel behavior by mode, time, frequency, trip length, cost, or route.

The Department recognizes the benefits of TDM strategies in enhancing the mobility of Florida's residents and visitors and will consider TDM strategies in all appropriate studies, plans, programs, and functional areas. The Department will demonstrate its commitment to TDM by serving as modal employer for public and private business as allowed by law and as provided for in the ***Telecommuting Program Procedure*** ***(No. 250-000-050)*** and in the ***Non-Standard Work Schedule Approval Procedure*** ***(No. 250-010-003)***, and in other programs as approved.

In addition, the Department will encourage and promote single occupancy vehicle trip reduction programs at the local and regional levels, through the guidance and direction provided in the ***Commuter Assistance Program Procedure*** ***(No. 725-030-008)*** and in conjunction with other strategies and activities including Metropolitan Planning Organizations transportation plans and studies, Local Government Comprehensive Plans, locally prepared feasibility studies, and Transit Development Plans.

S.C. Kopelousos
Stephanie C. Kopelousos
Secretary

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Measuring TDM

- Challenge: measuring and incorporating impact
- Tracking and recording performance

1,931,486
gallons of gas saved

42,182,400
fewer vehicles miles traveled (VMT)

37,674,673
pounds of carbon dioxide averted from entering the atmosphere

$25,121,308
saved in personal commuting costs

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Measuring TDM

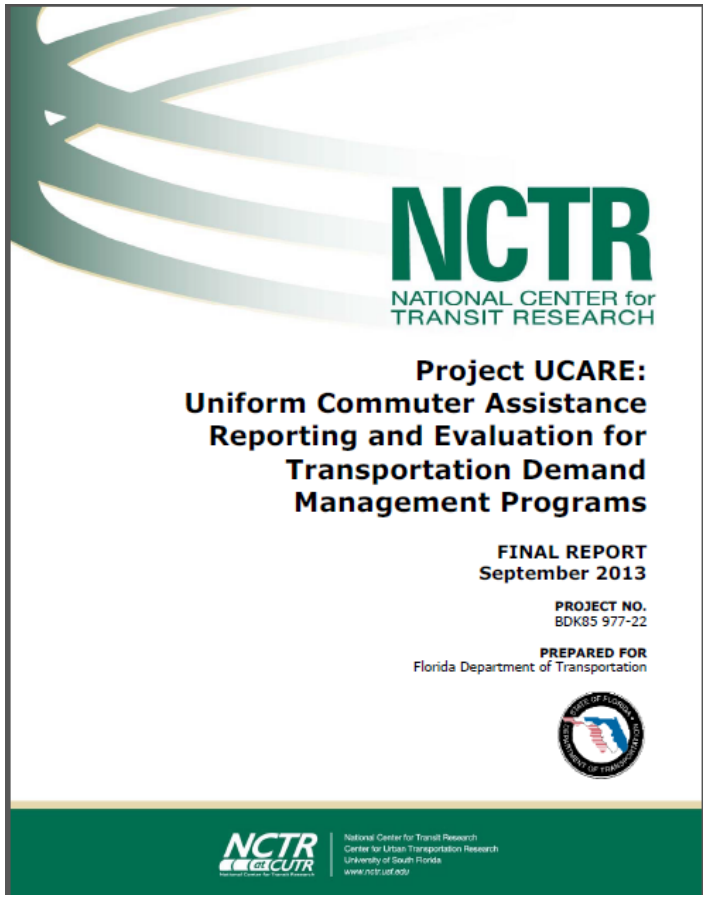

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Table 11 - Florida CAP Evaluation Results

Performance Measure	Results	
Vehicle miles of travel reduced*	28,289,200	Miles
Vehicle trips reduced*	847,800	Trips
Percent of Drive-alone Customers Switching to a Commute Alternative (the most restrictive definition)	3% to 16%	Net values of customers
Percent of Drive-alone Customers Switching to a Commute Alternative (a more generous definition)	13% to 35%	Gross values for all customers influenced by program
Annual current carpool and vanpool person miles of travel*	35,152,948	Person Miles
Annual current carpool and vanpool person trips*	1,145,385	Person Trips
Customer Round-Trip Commutes Avoided By Use of Telework	601,061	Trips
Customer Round-Trip Commutes Avoided By Use of Alternative Work Schedules	721,537	Trips
Gasoline consumption reduced*	1,243,400	gallons
Carbon Dioxide*	11,050	Metric tons
Carbon Footprint (CO_2 Equivalent)*	11,390	Metric tons
Cost Savings to Commuters * (saving based on only fuel, tire, maintenance and reduced depreciation costs)	$9,847,000	Per year
Customer Satisfaction (1 = Not At All Satisfied and 10 = Very Satisfied)	5.6 to 7.2	
Customer Satisfaction – Would Recommend	Depending on the CAP: 54 to 84 percent would definitely or probably recommend	
Share of customers receiving names of potential ridematches who contacted others	37%	
Share of customers receiving names to pool and contacted other who actually formed a pool	45%	
Overall share of customers who were successful in forming a pool with assistance of CAP	8%	

DISCUSSION

- Which plans, policies and guiding documents relate to TDM?
- How is TDM incorporated into FDOT project planning, design and development?
- How can the state implement or support TDM?
- Are there adopted targets for TDM in Florida? Which targets would be appropriate
- How can FDOT contribute to measurement and evaluation of impact? What are appropriate performance measures?

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Multimodal Development and Delivery (M2D2) is a partnership between the Florida Department of Transportation (FDOT) and Smart Growth America to identify modifications to FDOT policies, guidance, manuals, procedures and general practices needed to implement FDOT's Complete Streets policy in order to promotes safety, quality of life, and economic development in Florida.

www.smartgrowthamerica.org