

Metro Technical Advisory Committee

Sustainable South Bay Strategy

February 2, 2011

Public Transit Mode Share in SB

- Current – 2.6% of all trips
- Future – 2.6%
- Target for 2020 5%-6%?
 - Without significant infrastructure investment or substantial budget increases

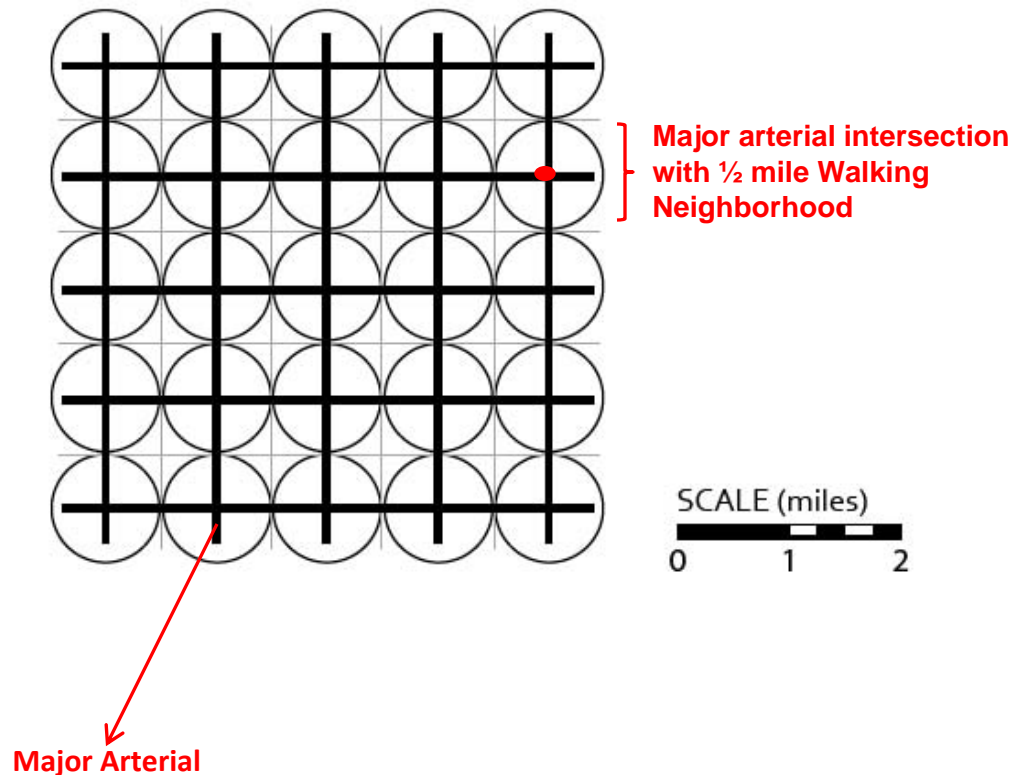
How we developed the SSBS

- Extensive research into transportation behavior of 8 South Bay neighborhoods from 2004 to 2008
 - Funded through grants from MTA and SCAG
- Do existing relatively dense nodes in the South Bay “perform” better than plain old “sprawl”?
- Can we figure out alternatives to the density-transit strategy?

Research Team Members

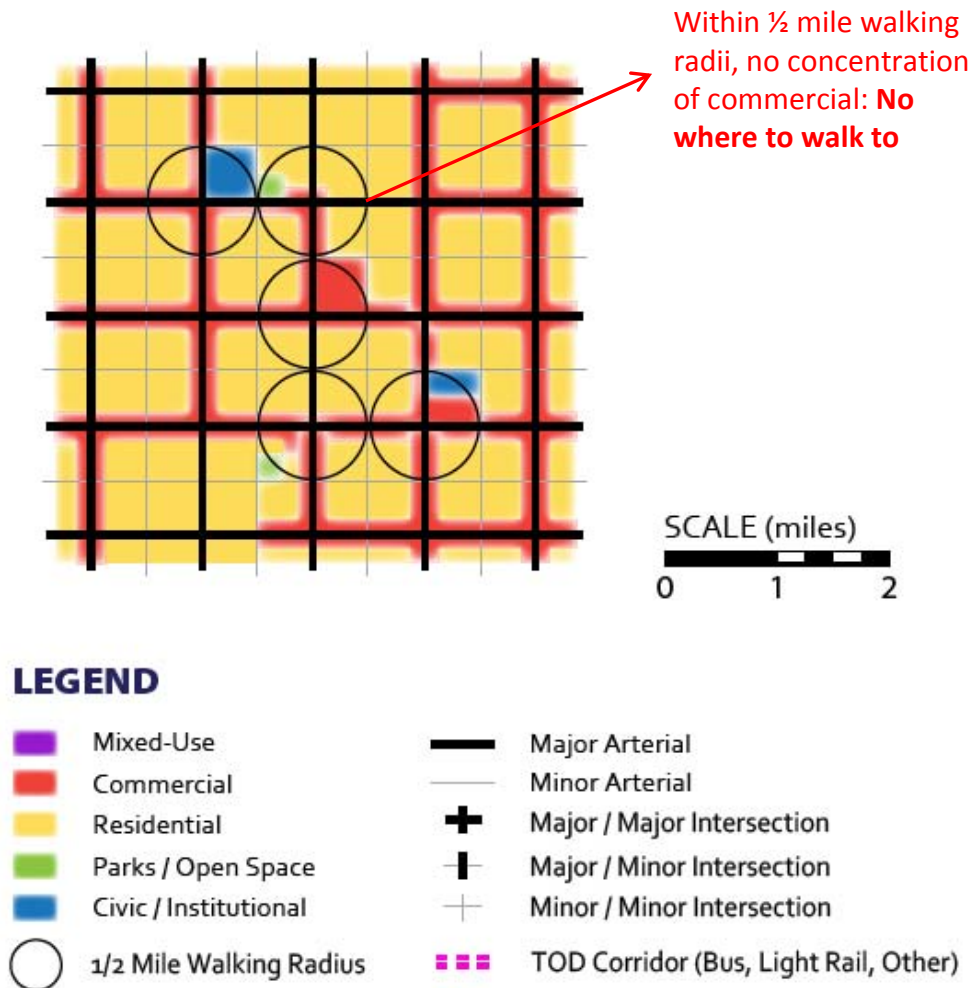
- Research design – Wally Siembab
- Research scientist – Marlon Boarnet, UCI;
Travel By Design
- Data collection and initial analysis -- Solimar
Research Group – Bill Fulton
- Economic Analysis -- ERA/AECOM
- Analysis and final report – Siembab and
Boarnet
- Ground test the strategy – RBF consulting

Potential of the Street Grid Spatial Structure



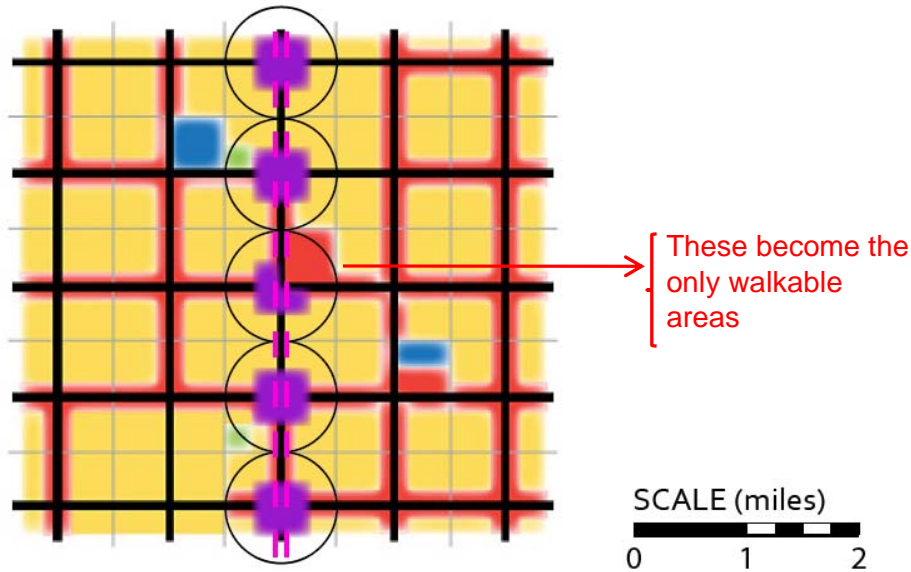
- ▶ A 4-mile area of a street grid allows for 25 Natural Walking Neighborhoods around major intersections

Typical Suburban Model



- Few concentrations of compact mix of uses
- No walkable neighborhoods
- Over time some retail becomes underperforming
- But -- Horizontal mixed-use is common

Transit-Oriented Development (TOD) Model

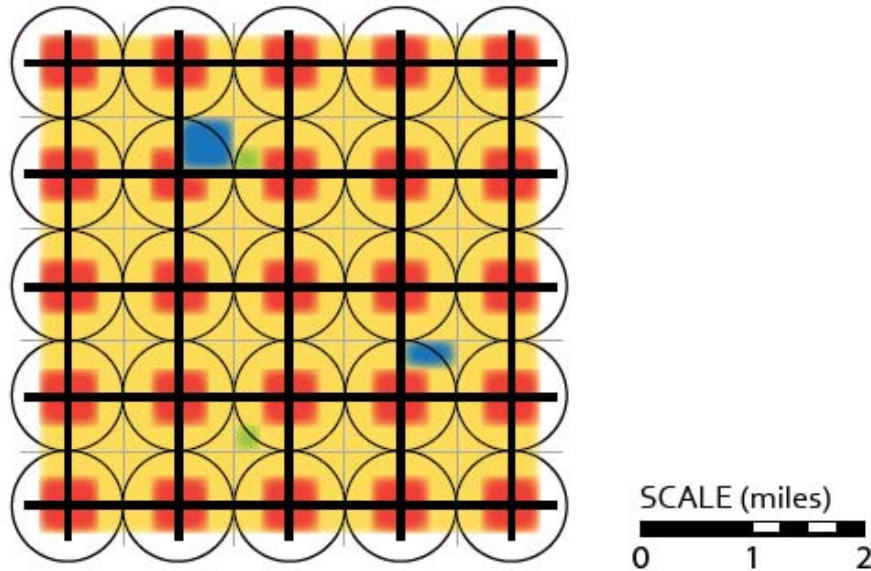


LEGEND

 Mixed-Use	 Major Arterial
 Commercial	 Minor Arterial
 Residential	 Major / Major Intersection
 Parks / Open Space	 Major / Minor Intersection
 Civic / Institutional	 Minor / Minor Intersection
 1/2 Mile Walking Radius	 TOD Corridor (Bus, Light Rail, Other)

- Singular corridor of investment
- Few concentrations of compact mix of uses, few walkable neighborhoods
- Requires final mile connections
- **Model does not look at a city comprehensively and neglects all other corridors**

Neighborhood Development Model



LEGEND

	Mixed-Use		Major Arterial
	Commercial		Minor Arterial
	Residential		Major / Major Intersection
	Parks / Open Space		Major / Minor Intersection
	Civic / Institutional		Minor / Minor Intersection
	1/2 Mile Walking Radius		TOD Corridor (Bus, Light Rail, Other)

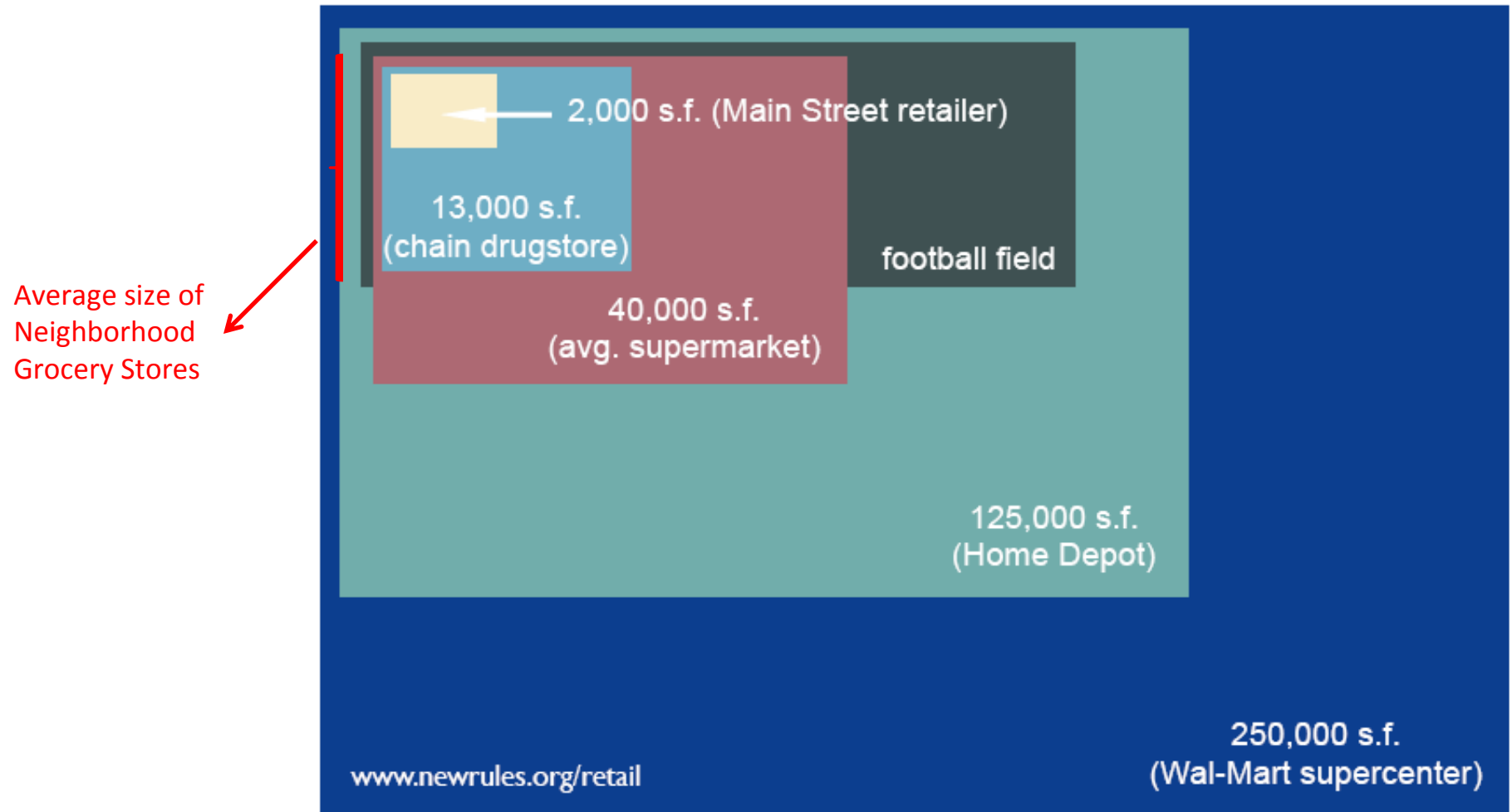
- ▶ Intersections serve the commercial needs of their neighborhoods
- ▶ Commercial along corridors converts to residential further supporting intersections
- ▶ Potential to achieve 25 walking neighborhoods
- ▶ Investment focused throughout grid as opposed to along one corridor
- ▶ Supportive of local use vehicles (LUV) – destinations within 4 miles

Available Neighborhood Transportation Alternatives

- Neighborhood Electric Vehicle (NEV)
- Segway
- Demand Responsive Transit (DRT)
- Neighborhood Shuttle
- Jitney (Shared Taxi/Shuttle)
- Car Sharing
- Walking
- Biking



Case Study No. 6 – Neighborhood Grocery Store Standards



Land Use Vision

- Use arterial intersections as commercial nodes.
- Migrate strip commercial to new commercial nodes.
- Replace existing strip commercial with residential at densities consistent with adjacent residential neighborhoods.
- Encourage small scale retail to complement compact commercial development
- Encourage large specialized centers to create a more diverse set of uses & become more compact
- Ensure that most destinations of most HH are within 4 miles

Mobility Vision

- Pursue zero emission BEV neighborhood vehicles
 - Most existing trip distances are short
 - Land use element will make them shorter still
- Complete Streets
- Car Sharing
- Public transit
 - Rapid connections to regional backbone
 - Local DASH and DART
- Walking and Cycling

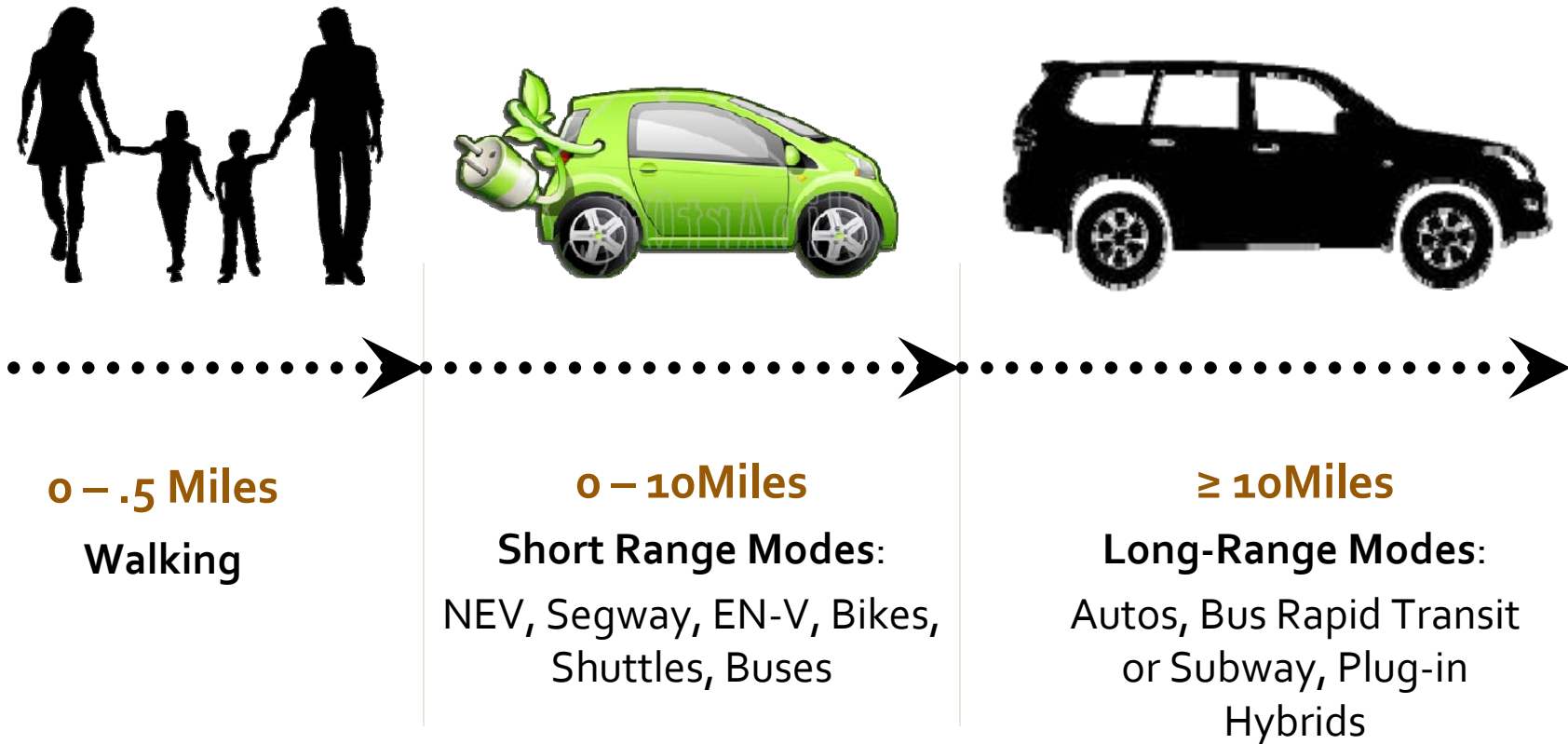
Fleet Transition

- ▶ The near future necessitates a fleet transition to electric vehicles
- ▶ Currently two types of Electric vehicles
 1. Plug-in Hybrids (run on combination of gas and battery – unlimited range)
 2. Battery Electric only
- ▶ Battery Electrics are defined by range
 - ▶ 25, 50 or 100 miles

Issue is the right tool for the trip purpose

Mobility – Appropriate Transportation Modes

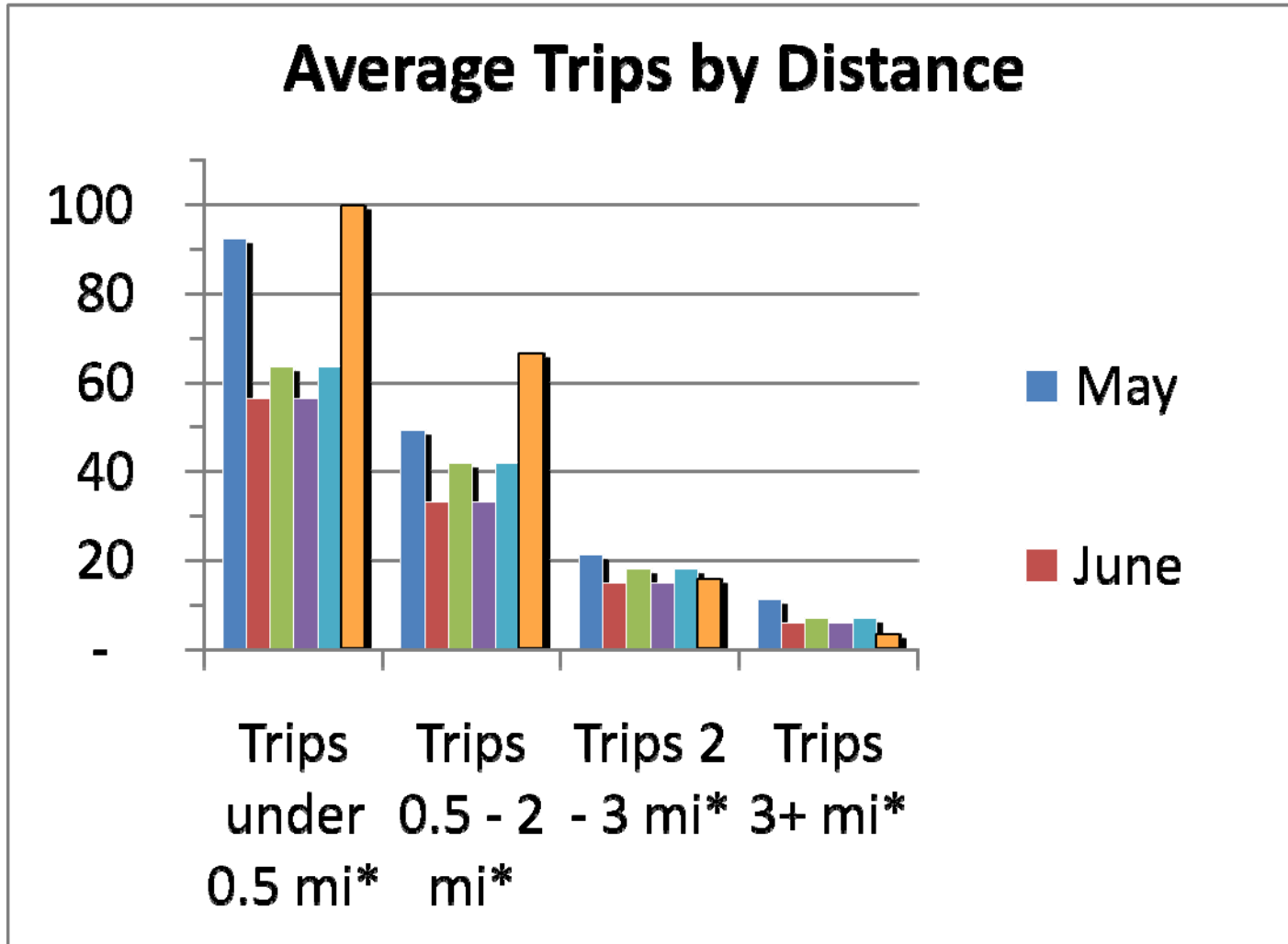
Using the right tool to get the job done



Local Use Vehicle Demonstration Project

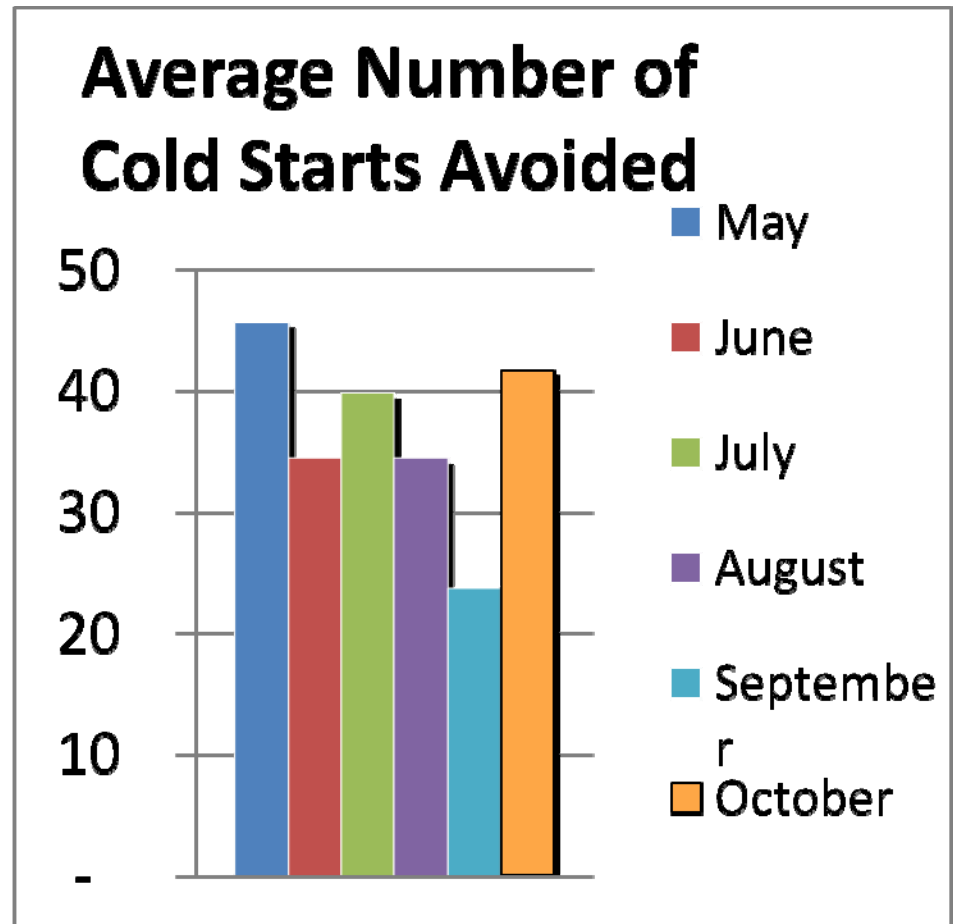
- A study of 6 Local Use Vehicles (LUVs)
 - 18 month long study (7 months of data have been collected)
 - Selected community members pilot the LUVs for 3-6 months
 - Over 50 drivers will participate in the vehicle testing
- Objectives
 - Test the feasibility of LUVs in suburban context
 - Estimate benefits – VMT, GHG emissions and criteria pollutants.

Trip Distance Trends



Cold Starts Avoided Per Vehicle

- A cold start is an ignition event when the engine is cold.
- We count a cold start as ignition events occurring when the vehicle has not been used for over 2 hours.
- Cold starts are eliminated by switching from a gasoline fueled vehicle to an electric vehicle.



Preliminary Estimate of Emission Reductions

Where LUVs are Supported by the Development
Pattern

- For participating households– LUVs can:
- Reduce GHG emissions by 25% *
- Reduce Criteria air pollutants by up to 40% *

* Emissions reductions are per participating household not aggregate community

Mobility Strategy Next Steps

- Generally encourage passenger car fleet conversion
 - 500,000 vehicles, about 175,000 2nd or 3rd cars
- Ongoing LUV Demonstration Project
- Possible CPI study with SCAG, SCE, & CEC
- Foster “complete streets” in 1 or 2 lead cities
- Attract car sharing service
- Work with Metro and municipal bus systems

Future Transit

- Multi-Mobility Hubs
- Rapid connection to regional backbone
- DASH – circulation within 4 mile square
- Development oriented transit
 - Especially to job sites (van pools?)
- Can we achieve 5% to 6% mode share?