SOUTHERN CALIFORNIA
ASSOCIATION of GOVERNMENTS

TECHNICAL WORKING GROUP (TWG)

Thursday, June 19, 2014: 10:00 a.m.

SCAG Offices
818 West 7th Street, 12th Floor
Board Room
Los Angeles, CA 90017
(213) 236-1800

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AGENDA

Introductions

Discussion Items

1. SCAG Active Transportation Results from the 2011 Household Travel Survey (Alan Thompson) (Attachment) — 30 min.
2. 2016 RTP/SCS Modeling Variables Matrix (Guoxiong Huang) (Attachment) — 20 min.

Technical Update Items

3. Statewide and Non-Metropolitan Transportation Planning; Metropolitan Transportation Planning Notice of Proposed Rule Making (NPRM) (Ryan Kuo) (Attachment) — 10 min.
4. California Active Transportation Program Grant Update (Alan Thompson) — 5 min.

TECHNICAL WORKING GROUP (TWG)

May 15, 2014

Meeting Summary

Following is a summary of discussions of the Technical Working Group meeting of May 15, 2014.

Discussion Items

1. OCTA Draft Long Range Transportation Plan

Greg Nord, OCTA, reported on OCTA's Draft Long Range Transportation Plan. Mr. Nord stated in response to an increase in population, employment and congestion delay by 2035 several strategies underlie the LRTP. These include optimizing transportation systems with increased signal synchronization, rapid bus service and managed lanes. Additional actions include maintenance of the streets and highways, education for the public on different travel choices and innovative services such as real-time information. Specific improvements include new bus and streetcar service on high-demand corridors, 20 new weekday Metrolink trains, 650 miles of bikeways, 820 lane miles on the Master Plan of Arterial Highways, 206 freeway/carpool lane miles, 236 tollway lane miles and 450 vanpools and station vans. Mr. Nord reviewed the specific service improvements for bus, rail, ongoing grade separation projects as well as the continued build out of the Regional Bikeway Network. Future roadway projects by 2035 were reviewed as well as enhancements to the HOV and toll lanes. It was noted these improvements will increase daily transit trips, reduce hours of delay and improve average speeds on both freeways and arterial streets. The public comment period ends June 30, 2014.

The working group discussed OCTA's Long Range Transportation Plan.

2. System Preservation Update

Margot Yapp, PE, Nichols Consulting Engineers, provided an Overview of Regional Needs Analysis. Ms. Yapp noted that a statewide survey is being conducted and surveys were requested from 539 cities and counties to submit data on their local street network. Further, 74% of those surveyed responded which covers 89% of local street miles. Once data is received the Pavement Condition Index will be determined. Ms. Yapp noted the average PCI for the SCAG region is yet to be determined as additional data is being collected. The index rate street conditions as Good/Excellent, at Risk, Poor, and Very Poor/Failed. The goal is to provide a transportation needs number for local street networks for 198 cities and counties in the SCAG region. Those will then be aggregated by county or region.

The working group discussed the system preservation analysis.

3. Staff Draft Paper on TOD Benefits, Challenges and Best Practices

Ping Chang, SCAG staff, reported on a draft paper on Transit Oriented Development, Challenges and Best Practices. Mr. Chang stated the object of the paper is to provide a summary of key knowledge supportive of TOD. It was noted TOD can generate a range of transportation, economic and environmental benefits; however, there are challenges such as higher risks for developers and difficulty obtaining financing. Further, TOD is more successful with favorable market conditions and supportive local policies. The benefits of TOD include increased transit use, reduction of vehicle miles travelled, higher premium for rents and property sales as well as more efficient land use. In addition to the risk of obtaining financing, there can be uncertainties in land acquisition, the environmental process and the need for financial assistance with pre-development capital. TOD development benefits from supportive local policies that create a TOD-friendly environment. These can include offering financial incentives, tailoring land use regulations, use of density bonus, managing parking and streamlining environmental review. Finally, it was noted there are opportunities for TOD along Metro's Crenshaw Line, the North Hollywood stations as well as rapid bus intersections in South Los Angeles.

The working group discussed TOD best practices.

Technical Update Items

4. Active Transportation Program Update

Sarah Jepson, SCAG staff, provided an update on the ATP. The program is $360 million with $180 million for a statewide competition and $76 million for the regional competition. The call for projects for the first phase is underway and applications are due May 21, 2014. Ms. Jepson noted there has been considerable interest in the program from local jurisdictions. Also, SCAG will be submitting an application for the statewide funding in the non-infrastructure area to support an active transportation safety and encouragement campaign.

5. Local Input Survey Update

Ping Chang, SCAG staff, provided an update on the status of the local input surveys. Mr. Chang reported the local input process continues with 60% of the jurisdictions reporting region wide although some counties such as Ventura and Orange have an 80 – 90% response rate. It is anticipated efforts to summarize the data will begin in 4 – 6 weeks and initial findings returned to the TWG for feedback.

6. MAP-21 Safety NPRM Comments

Naresh Amatya, SCAG staff, reported on the National Performance Management Measures for state departments of transportations (DOTs) to use to carry out the Highway Safety Improvement Program (HSIP) and to assess the number of serious injuries and fatalities, and serious injuries and fatalities per vehicle mile traveled. It was noted the MPOs are limited to supporting the state DOT in the achievement of the state targets. A schedule of milestones for the program was provided and it was stated the rules will not be implemented quickly enough to directly affect the 2016 RTP/SCS planning process although the work of setting state targets would occur while the 2016 RTP/SCS is being developed.

7. CalEnviro Screen Tool Update

Ping Chang, SCAG staff, provided an update on the May 12, 2014 CalEnviroScreen Tool Update Workshop. It was noted the California Communities Environmental Health Screening (CalEnviroScreen) is a screen tool to identify communities that are disproportionately burdened by multiple sources of pollution and, pursuant to SB 535, is expected to be used in allocating the state's Cap-and-Trade auction proceeds in order to assist the most impacted communities.

Announcements

Naresh Amatya, SCAG staff, announced that Margaret Lin will be leaving SCAG for a new position at the City of South Pasadena.

The next meeting of the TWG will be Thursday, June 19, 2014.

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Item 1 Attachment:

SCAG Active Transportation Results from the 2011 Household Travel Survey

Analysis of the 2011 Travel Survey for Active Transportation Modes

SCAG Technical Working Group

June 19th 2014

Alan Thompson

SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS

Structure

- 2011 Household Travel Survey
- Analysis on Walk Trips
- Analysis on Bike Trips
- Analysis from Add-on Survey

2011 California Household Travel Survey (CHTS)

- CHTS - A state-wide travel survey
  - … Organized by Caltrans
- Survey was conducted by NUSTAT
- Data available to download online
- 15,716 household samples
  - … SCAG Region
- Files include:
  - Household, Person, Activity, Place, Vehicle, Long Distance

2011 SCAG Household Travel Survey

- Includes both CHTS plus additional surveys conducted by SCAG (Abt-SRBI)
  - SCAG's survey questions are the same as CHTS
  - 20,088 total household samples
  - Consultant created household expansion factors and files for model estimation
- Used for model estimation of SCAG's travel demand models and analysis

Share of Active Transportation Modes

- Active Transportation (AT) modes include walking and biking
- CHTS AT Mode Share for SCAG Region:

% AT Mode Share

	Walk	Bike
IMP	7.8	1.43
LA	21.65	1.24
OR	10.93	1.21
RIV	9.43	0.72
SBD	9.68	0.72
VN	10.86	0.97
SCAG	16.75	1.12

- Weighted
- Unlinked trips

AT Share by Linked/Unlinked Trips

- **Trips in travel survey are “unlinked”. Mode choice models consider "linked” trips, where a transit trip including transfers by walking/biking counts as only one trip.**

AT Share for SCAG Region:

- CHTS (Unlinked): Walk (16.8%); Bike (1.1%)
- SCAG Survey Unlinked Trips: Walk (14.7%); Bike (1.3%)
  - Consistent with CHTS
- SCAG Linked Trips: Walk (9.8%); Bike (1.5%)
  - Total % AT = 11.3%
  - % AT of Year 2008 Model Validation = 9.66%

Share for AT Modes by SCAG County

Mode Share of Active Transportation Modes

	Walk			Bike		
	CHTS	SCAG Unlinked*	SCAG Linked*	CHTS	SCAG Unlinked*	SCAG Linked*
IMP	7.8	7.5	6.5	1.4	0.8	1.3
LA	21.7	19.6	12.6	1.2	1.4	1.7
OR	10.9	10.2	7.5	1.2	1.5	1.8
RIV	9.4	7.2	5.4	0.7	0.7	1.0
SBD	9.7	8.4	7.1	0.7	0.7	1.0
VN	10.9	7.0	5.9	1.0	1.1	1.2
SCAG	16.8	14.7	9.8	1.1	1.3	1.5

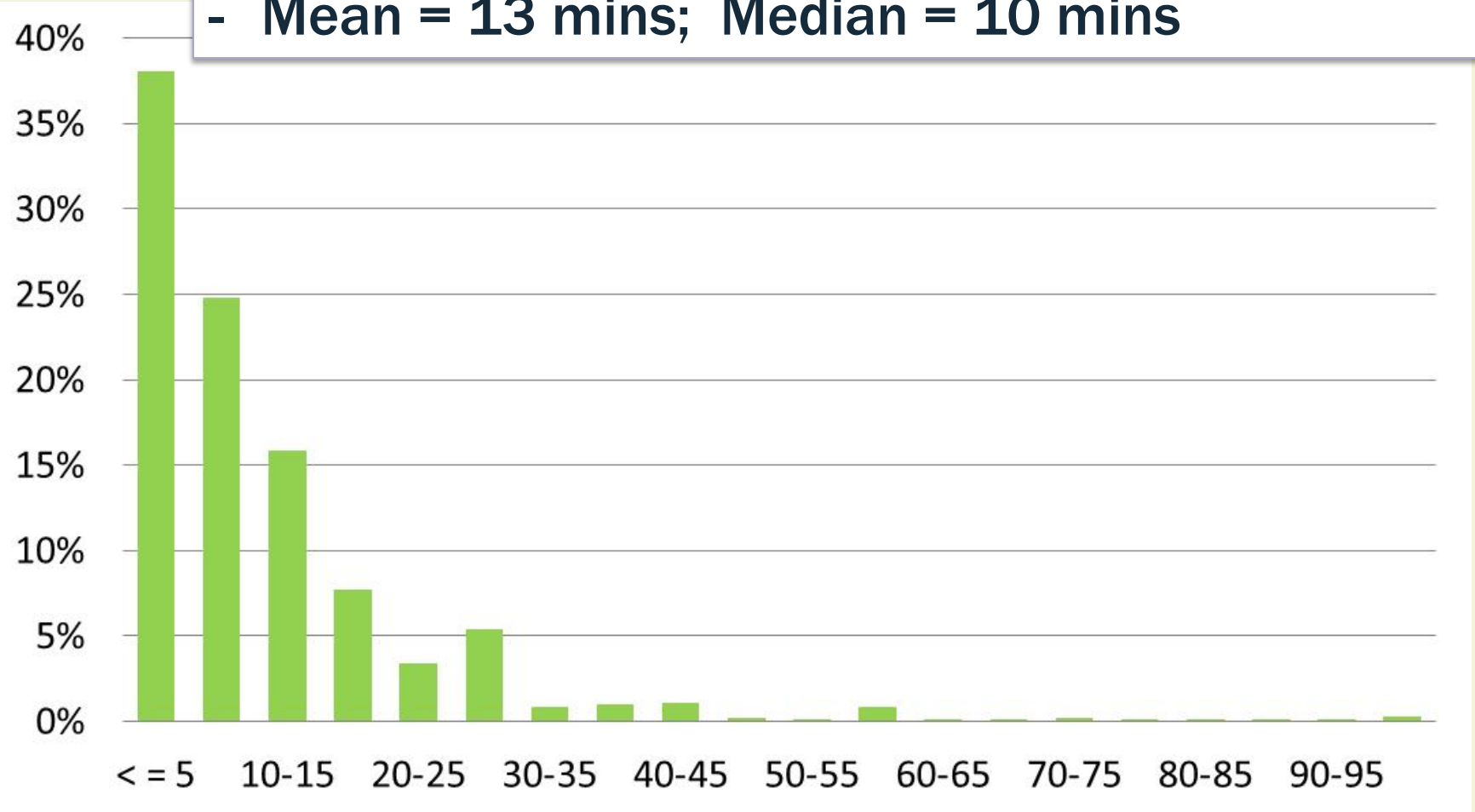
* Weighted by household expansion factor

Analysis on Walk Trips

Statistics based on SCAG's Combined Survey Database

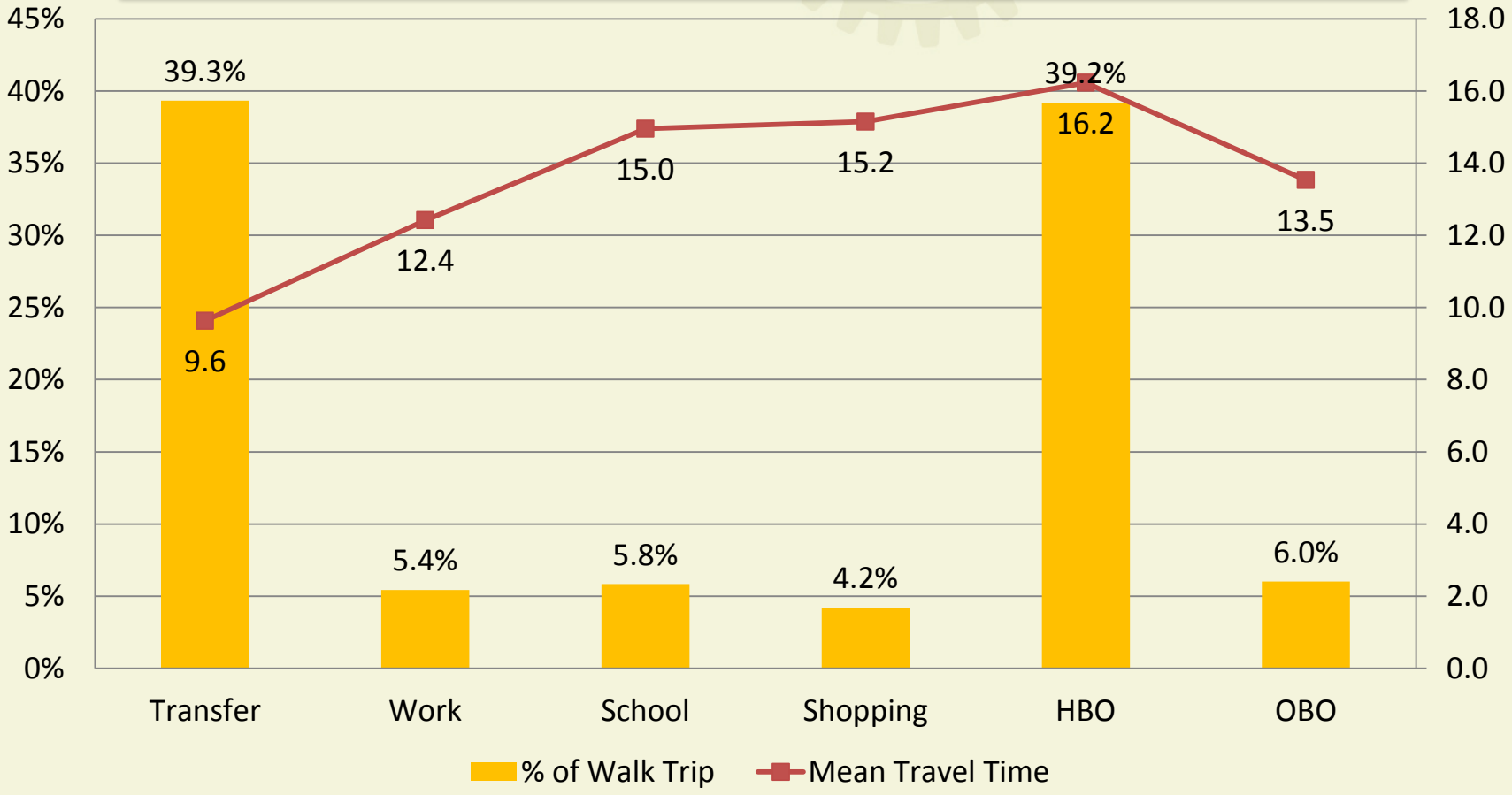
Walk Trip Travel Time Distribution

- About 40% of walk trips are less than 5 minutes
- Mean = 13 mins; Median = 10 mins



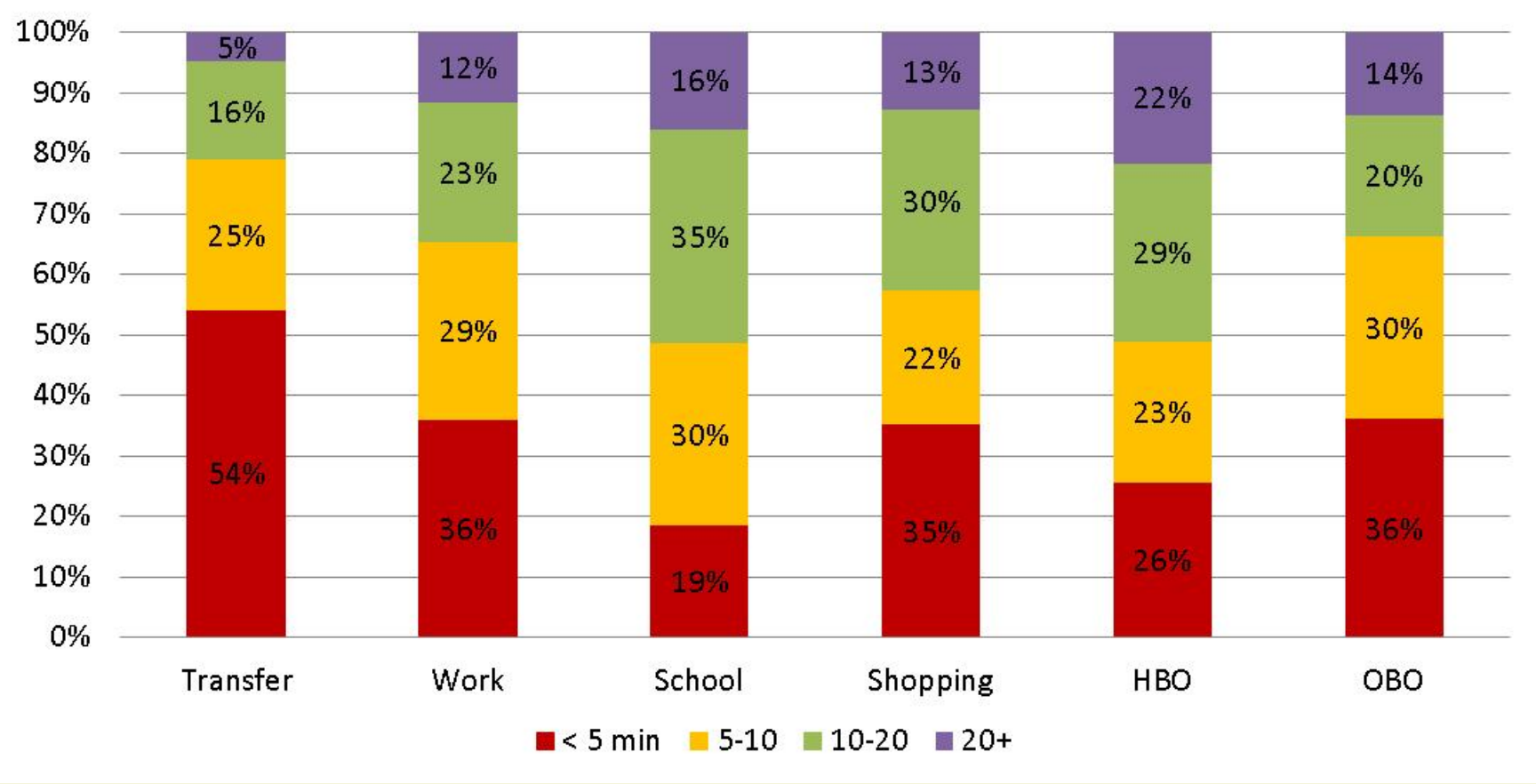
Walk Trip Type and Mean Travel Time

- **Nearly 80% of walk trips are Transfer Trips or Home-Based Other Trips (~40% each)**



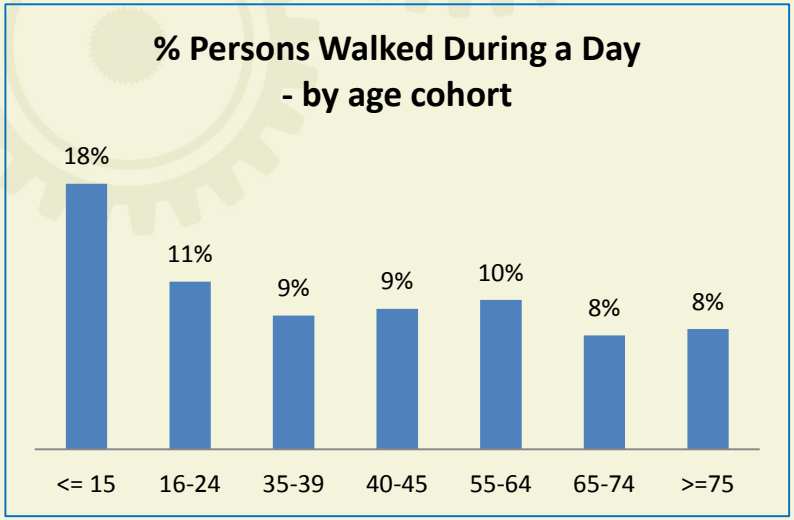
Walk Time by Purpose

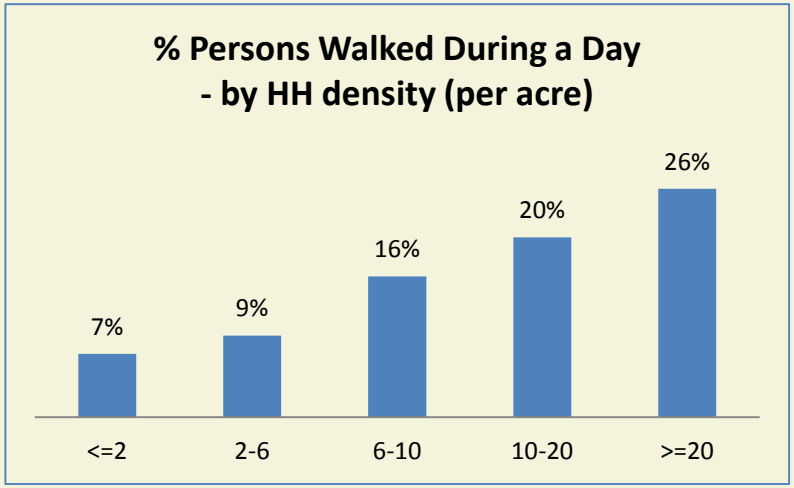
- For walk transfer trips; 54% are within 5 minutes; about 80% are within 10 minutes



Walk by Person

- About 11% of total persons make at least one walk trip during a day.
- Those younger than 16 tend to walk more than the older.
- People living in higher density neighborhoods tend to walk more.

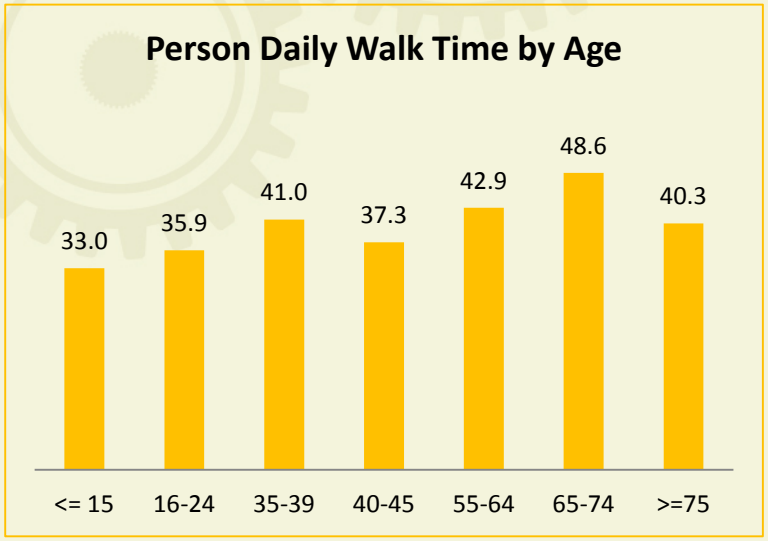


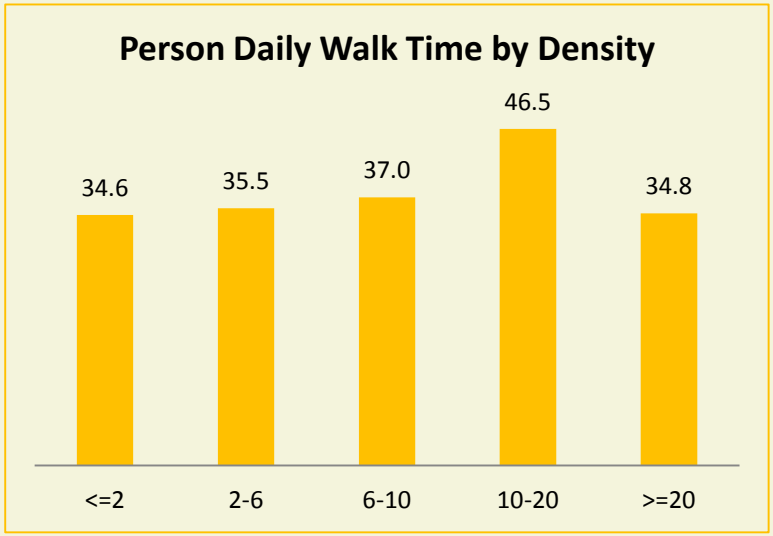


Daily Walk Time per Person

For those who made at least one walk trip during a day:

- Average daily walk time is 37.5 minutes per person.
- Age 65-74 walk near 50 minutes per day.
- Persons in higher density neighborhoods tend to walk for longer time.
- Walk time is shorter for highest density, probably due to better accessibility.





Summary of Walk Trip Analysis

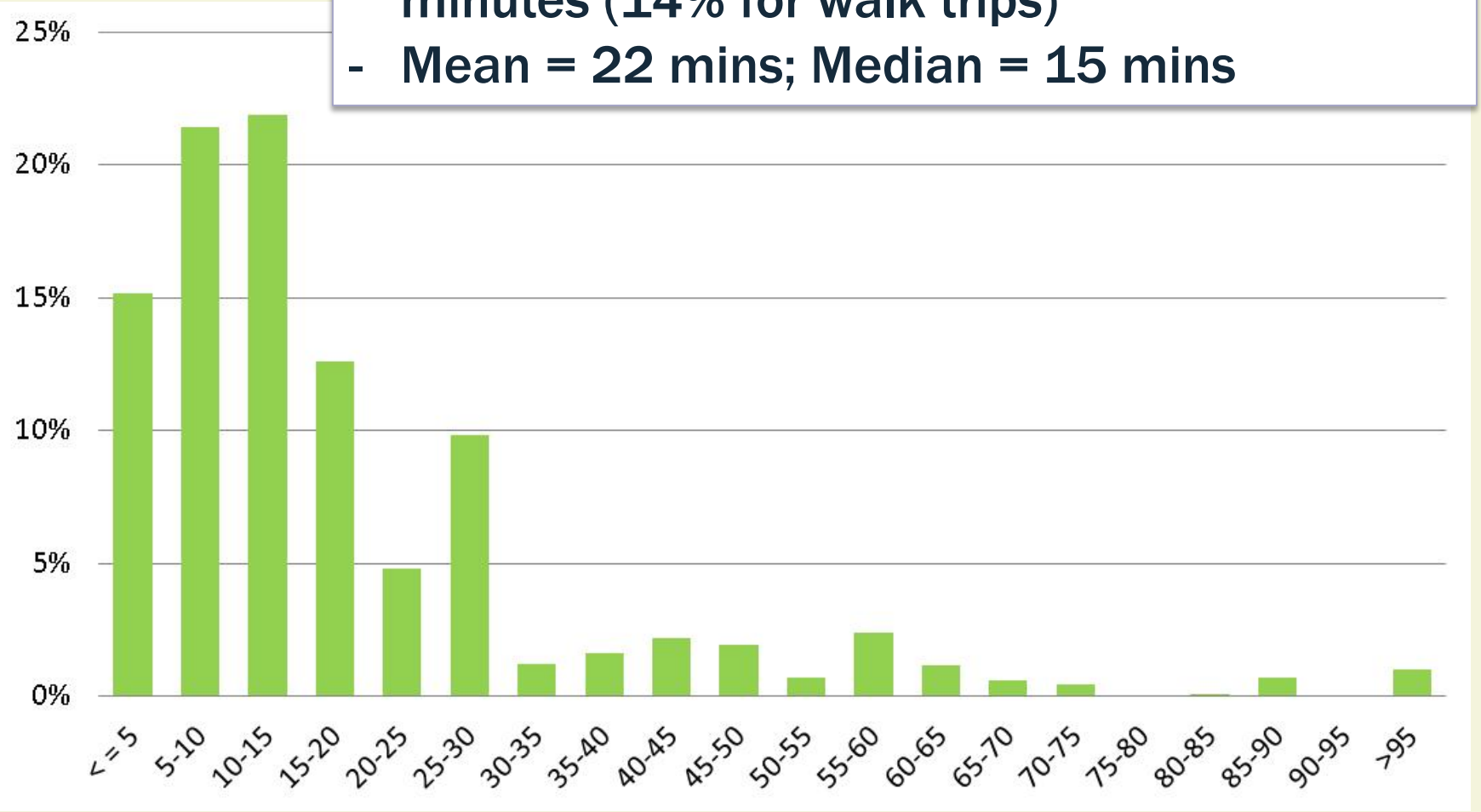
- 11% of people walk during a weekday.
- Residents of higher-density neighborhoods tend to walk more than those of low-density
- 40% of walk trips are for mode transfer
- May need to estimate walk access/egress time in transportation model as input for health impact analysis
- For mode choice analysis, is walk access/egress time considered as positive effect on utility?
  - People may prefer to walk to transit due to positive effect on health

Analysis on Bike Trips

Statistics based on SCAG's Combined Survey Database

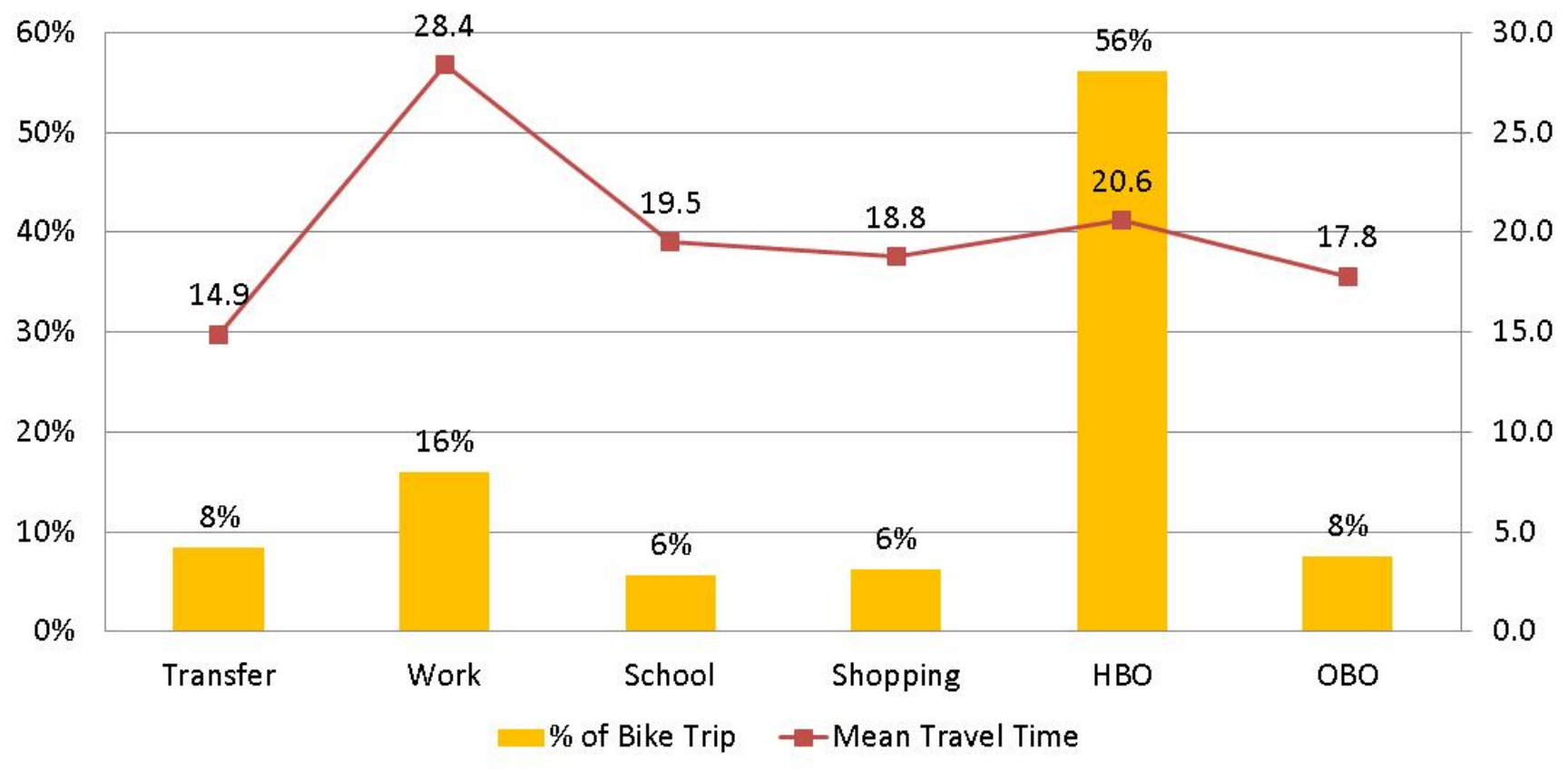
Bike Trip Travel Time Distribution

- Nearly 30% of bike trips are <u>longer than</u> 20 minutes (14% for walk trips)
- Mean = 22 mins; Median = 15 mins



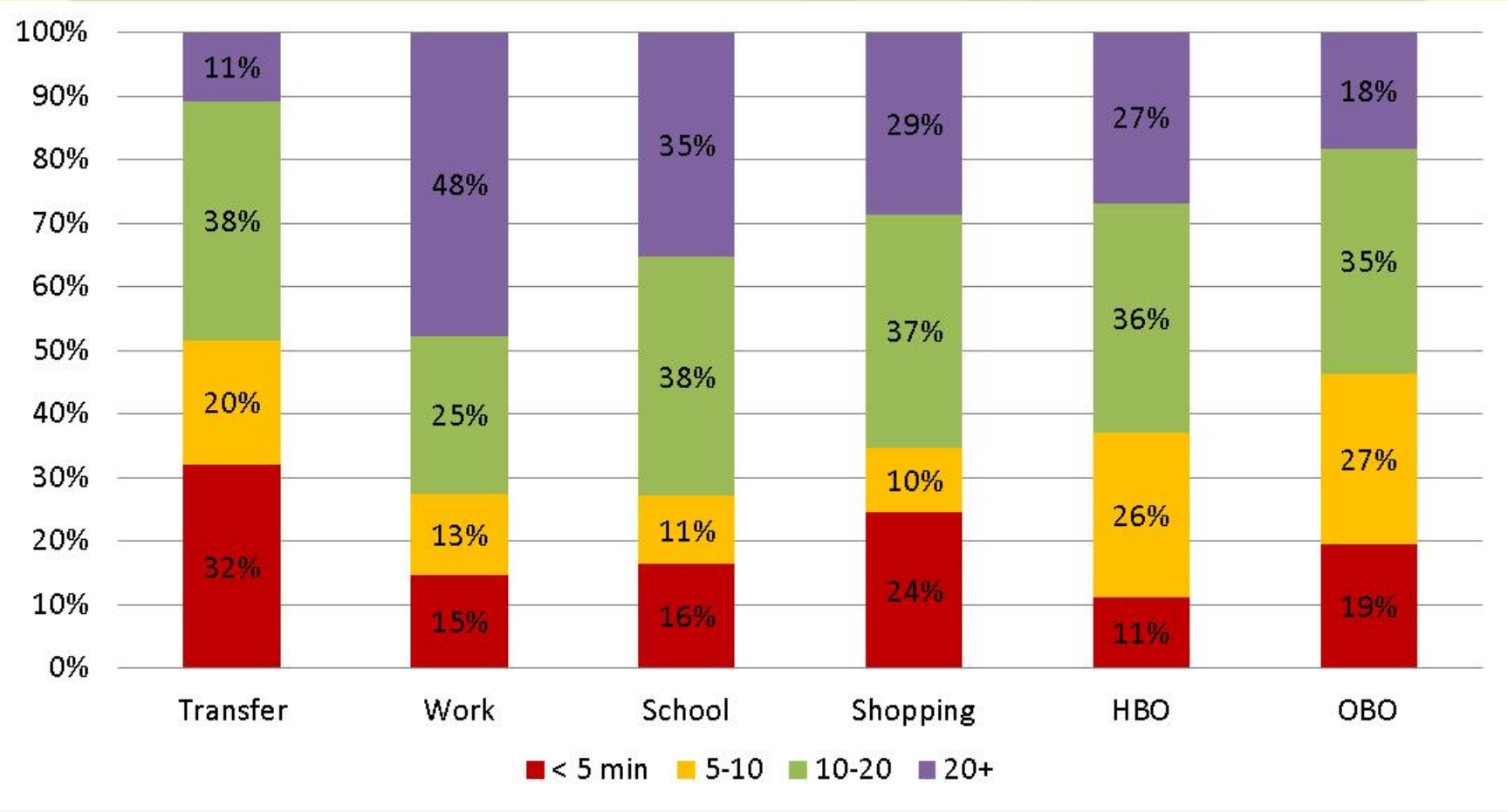
Trip Type and Mean Travel Time

- 56% of bike trips are home-based other trips, 16% for commuting purpose & 8% for mode transfer
- Average bike time for work is about 29 minutes



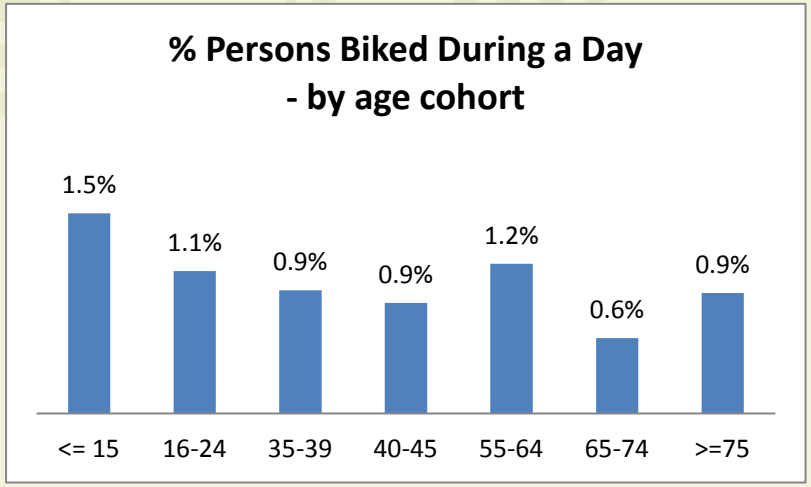
Bike Time by Purpose

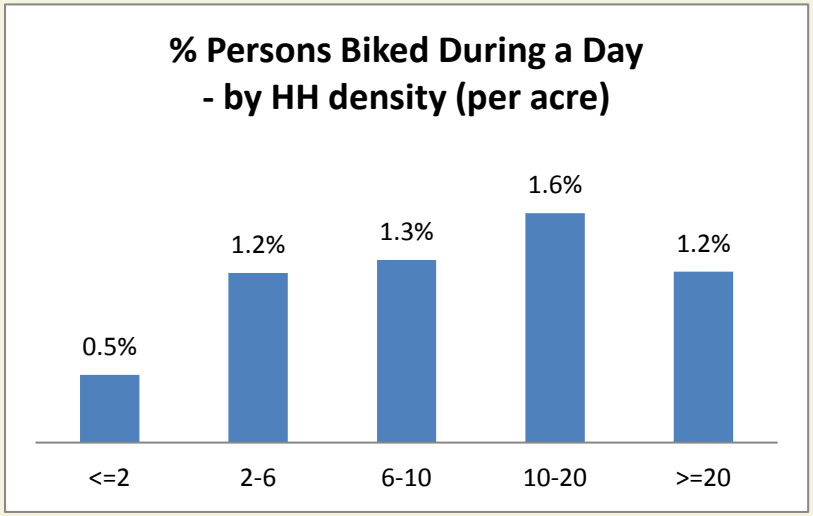
- **For trips to work location, 48% are longer than 20 minutes.**



Bike by Person

- About 1.1% of total persons make at least one bike trip during a day.
- Those younger than 16 tend to bike more than the older, but the difference is not very large.
- People living in higher density neighborhoods tend to bike more.

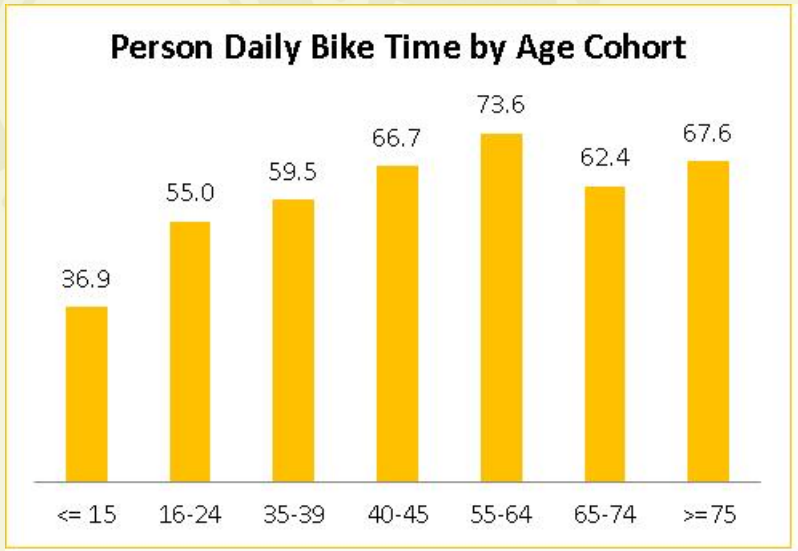


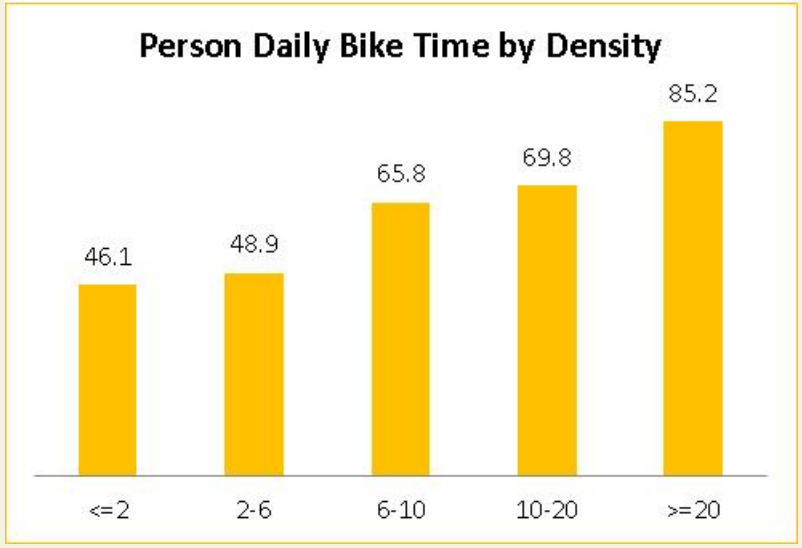


Daily Bike Time per Person

For those who made at least one bike trip during a day:

- Average daily bike time is 56 minutes per person.
- Age 55-64 bike nearly 75 minutes per day.
- People living in higher density neighborhoods tend to bike for longer time.





Summary of Bike Trip Data

- 1.1% of people bike during a weekday.

  Not much difference among age groups

- 55% of bike trips are for home-based other (social, recreation, visiting, eat out, …)

- Average bike time = 22 minutes. Bike for work travel time was the highest … 28.4 mins

- Bikers tend to spend more time on biking if living in high-density or better bike access areas

Analysis from Add-on Survey

Primary Mode to School

- Based on add-on survey, of 1,370 student samples:
  - 13% are walking to school
  - 3.3% are biking to school

Primary Mode to Work

- Based on add-on survey, of 2,645 workers:
  - 2.16% are walking to work
  - 2.08% are biking to work

Bike or Walk Incentives at Primary Job

- For employers offering incentive on bike or walk, 11% of workers take AT modes, which is higher than no incentive (3%).

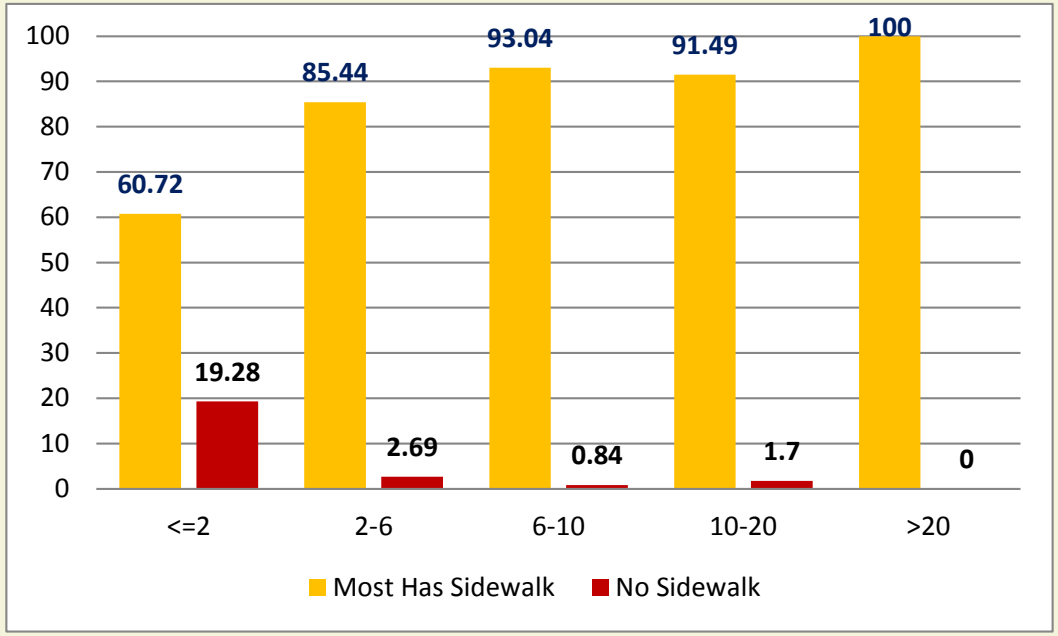
	Walk	Bike	AT
Yes	3.2	7.83	11.03
No	1.85	1.38	3.23

- For total bike commuters
  - 77.27% use bike/walk incentive program
  - 81.82% use bicycle storage facility

    * *22 samples*

Neighborhood Density & Sidewalks Availability

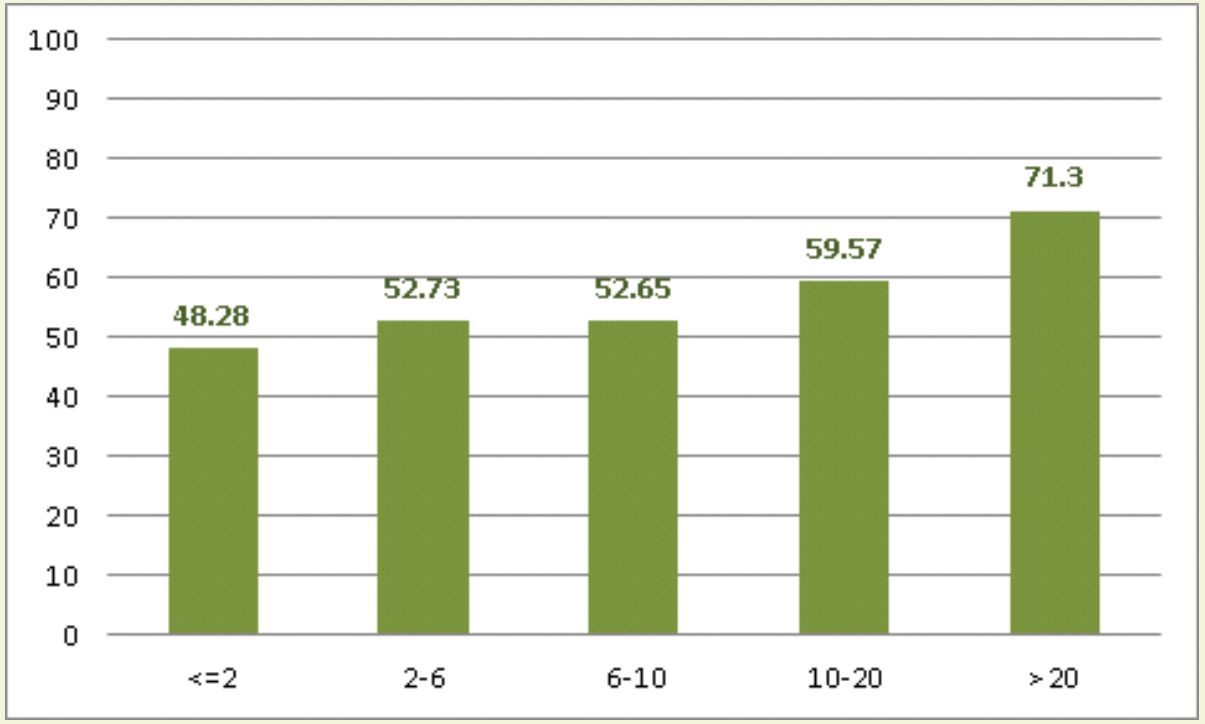
- For a question on sidewalk availability, sidewalk is available in “most of places” or “everywhere” for high-density neighborhood.
- 20% of lowest-density neighborhoods (< 2 HH per acre) have no sidewalk.



2,486 households

Members of my household regularly bike and walk in our neighborhood

- **Residents in higher-density areas tend to regularly bike and walk in neighborhoods**



2,486 households

Conclusions

- Walk Trips:
  - Shorter distance; many are for mode transfers
  - Complements transit service
- Bike Trips:
  - Highest demand is for non-work modes
- Travel Demand Model – Follow-up:
  - Skim for bike mode
  - Link AT mode demand to Land Use & Built Environment (LUBE) variables
  - Connect to health impact model

Thank you

Alan Thompson

Active Transportation Coordinator

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Item 2 Attachment:

2016 RTP/SCS Modeling Variables Matrix

Modeling and Forecasting

Guoxiong Huang

June, 2014

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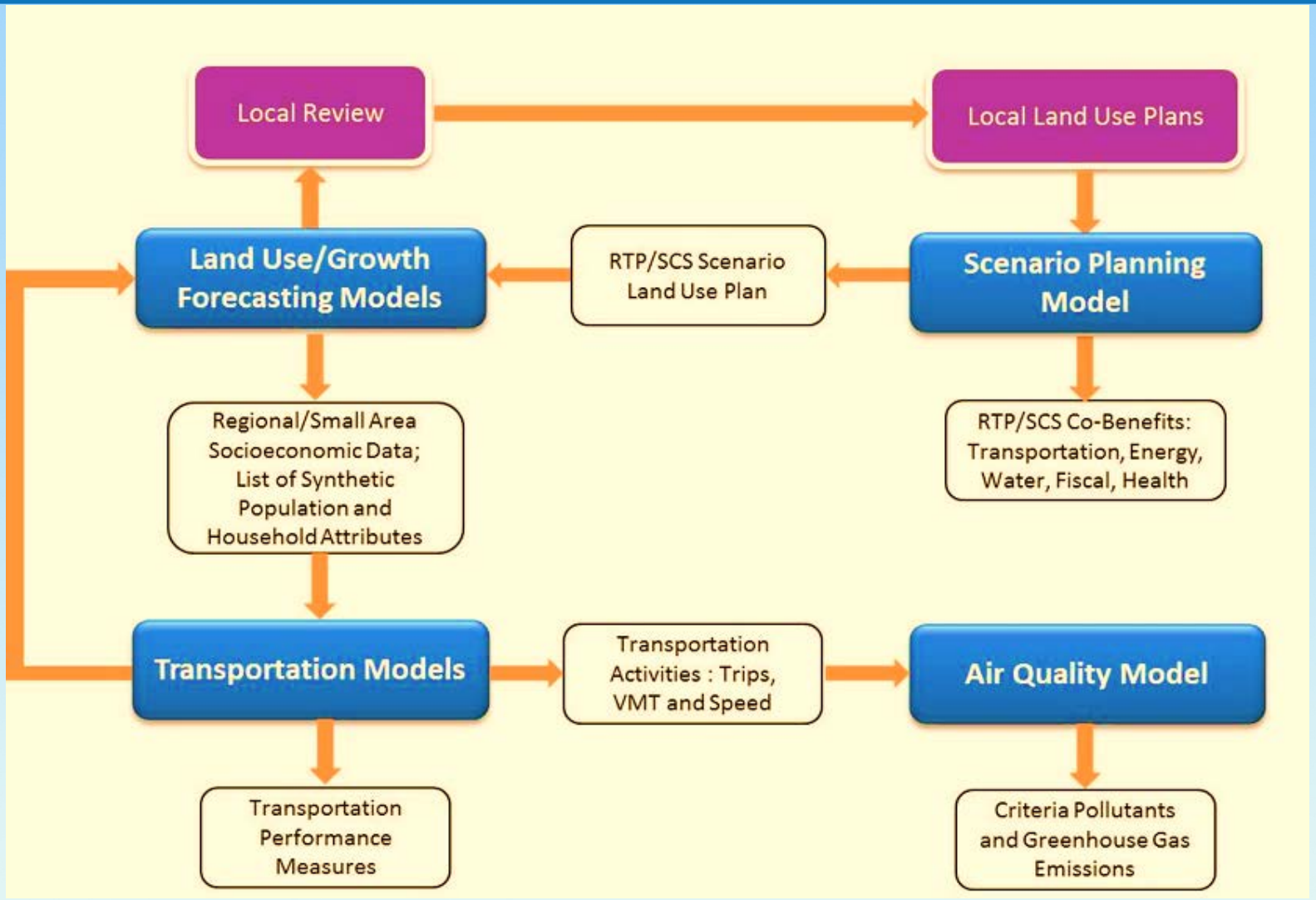
SCAG Integrated Modeling & Forecasting Framework



Scenario Planning Model

INPUTS

Parcel area and land use

Population
population by gender, by age, by level of education attainment and employment status

Household demographics
Income, number of vehicle, and tenure etc

Employment by sector

Residential /Housing

Building Square Footage by Type

Outdoor Irrigated Area
-Residential Irrigated square feet
-Commercial Irrigated square feet

Other

- Origin and Destination (O/D) pair skim matrices from regional travel model
-Vehicle fleet characteristics
-Fuel mix/carbon intensity
-CEC climate zones
-Water and Energy resources and use
-Capital infrastructure cost assumptions
-Infrastructure operations and maintenance cost assumptions
-Residential revenue assumptions by Land-

MODELS

S P M

OUTPUTS

Land Consumption

Local Fiscal Impact
- Capital cost for Local infrastructure
-Operations and Maintenance Cost
-Local Tax and Fee Revenues

Transportation
(VMT, Mode, GHG)

Building Energy Use
(residential, commercial, Building related CO2 emission)

Building Water Use
-Indoor/Outdoor
-Water related electricity Use
-Water related electricity CO2 emission

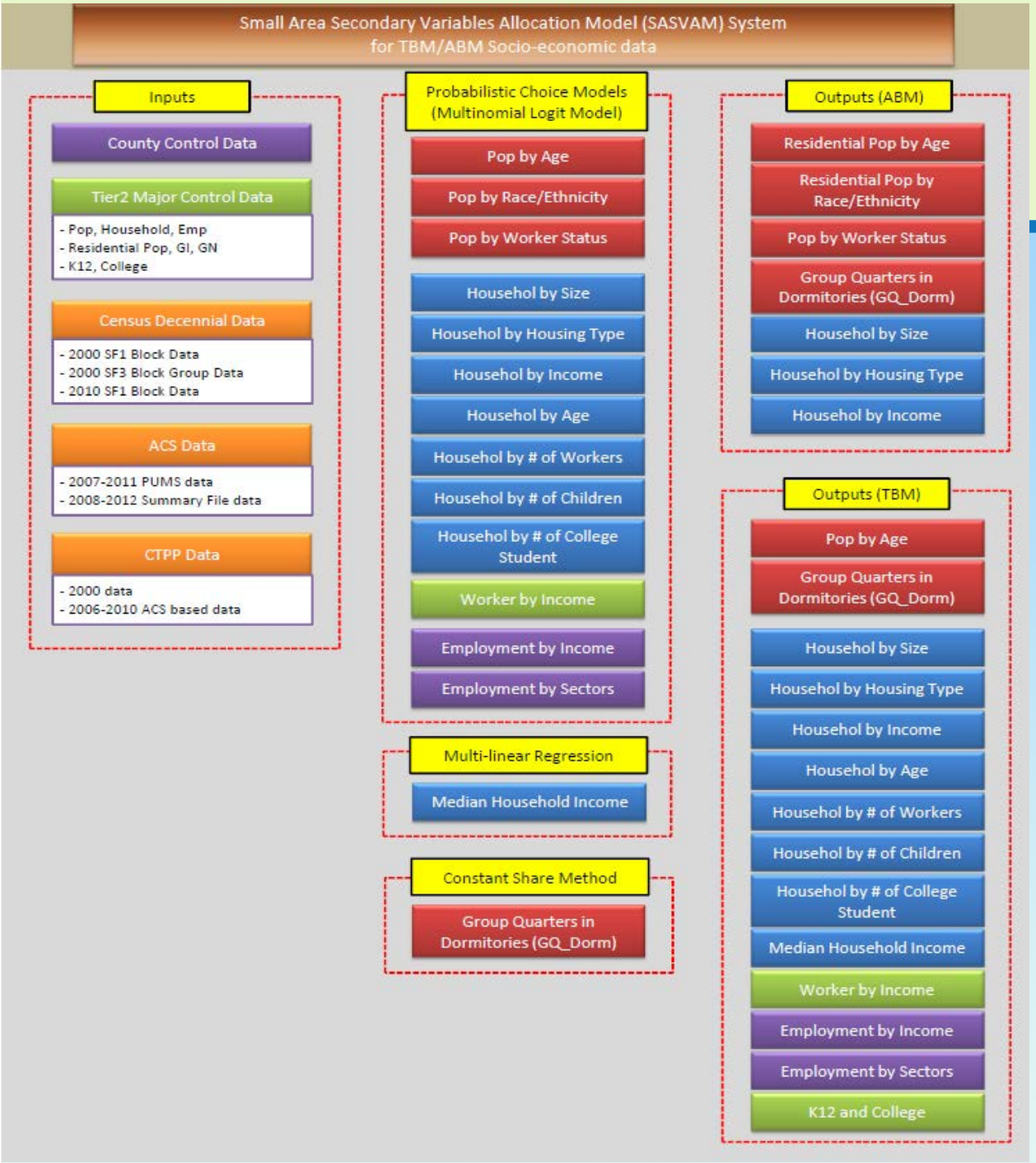
Greenhouse Gas Emission

Public Health
-Physical Activity/weight related disease incidence and cost
-Respiration/Pollution related disease incidence and cost
-Pedestrain -Auto collusions and associated cost

Houshehold Cost
- Transportation
-Residential energy and water use

Local Land Use Plans

SCAG SPM Inputs/Outputs



Scenario Planning Model

Growth Forecasting

Transportation Model System

INPUTS

SED

1. Regional/Small area Socio-Economic control data
2. Public Use Micro-Data household attributes
3. Public Use Micro-Data person

Land Use, built environment and

Business hour profile

Accessibility

- By mode (auto, transit and non-motorized
-By activity type (mandatory and non-mandatory)
-By household car sufficency level (0 car, suff and insuff car)
-By hour (time=1-24)

Zone Equivalence file

Parking cost data

Highway skim

-Network
-Capacity table
-Speed table
-Volume delay function

Transit skim

-Network
-Fare Matrix
-Link fares
-Mode table

Truck data

-Truck grade factors
-Truck Congestion factor
- Truck compisite factor

External trips

-Port trips
-Gordon trips

Models

Population Synthesis

Long term and Mobility Choices

Activity Generation and Tour/Trip Scheduling

Sub-regional Model

Heavy-Duty Truck Model

Highway and transit assignments

Outputs

Synthetic household and person atttributes

Work and School location

Driver license

Number of household vehicles

Number of activities by purpose

Number of tours by mode and by purpose

Number of trips by mode and by purpose

Number of stops by purpose

Number of truck and external vehicle trips

Highway Volumes and Speed

Other data
- Screenline count
-HPMS data
-Transit level of service data
-Parameters

Land Use/Growth Forecasting Models

Transportation Model System

Air Quality Model System

INPUTS

1. Base Input
1.Area
2.Calender Year
3. Season

2.Vehicle Miles of Travel (VMT) Profile
(for each Base Input category)
1. Vehicle Category and Technical
2. Daily VMT by vehicle category

3. Speed profile
(for each Base Input and vehicle category)
1. Speed bin
2. Speed distribution

4. Emission rates

5. Vehicle Fleet Compositions

MODELS

EMFAC2011 LDA

EMFAC2011 HD

EMFAC2011 SG

OUTPUTS

Criteria Pollutants Emissions
(tons/average weekday)
1. Total organic gases (TOG) emissions
2. Reactive organic gases (ROG) emissions
3. Carbon monoxide (CO) Emissions
4. Nitrogen oxides (NOx) emissions
5. Particulate matter 10 microns or less in diameter (PM10) emissions
6. Particulate matter 2.5 microns or less in diameter (PM2.5) emissions
7. Sulfur oxides (Sox) emissions

Greenhouse Gas Emissions
(tons/average weekday)
1. Carbon dioxide (CO2) emissions
2. Carbon dioxide (CO2) emissions (including Pavley I and LCFS adjustments)

Fuel Consumptions
(1,000 gallons/average weekday)
1. Gasoline Consumptions
2. Diesel consumptions

Transportation Models

Air Quality Model System

Questions?

For more information, please contact

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Item 3 Attachment:

Statewide and Non-Metropolitan Transportation Planning; Metropolitan Transportation Planning Notice of Proposed Rule Making (NPRM)

Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning Notice of Proposed Rule Making (NPRM)

What just happened?

On June 2, 2014, FHWA and FTA jointly released the "Statewide and Nonmetropolitan Transportation Planning; Metropolitan Transportation Planning" Notice of Proposed Rule Making (NPRM) and began soliciting formal comments, which are due to FHWA/FTA on or before September 2, 2014.

What's in this NPRM?

This NPRM proposes revisions to a variety of regulations governing the development of metropolitan transportation plans and programs for urbanized areas, state transportation plans and programs, and the congestion management process. As such, the NPRM includes a variety of revisions, including those that directly impact MPOs and some that do not.

Revisions that directly impact MPOs

- **Reporting requirements for performance-based planning:** The NPRM proposes that MPOs, in their metropolitan transportation plans: 1) describe the performance targets required by MAP-21, 2) evaluate the condition and performance of the transportation system, and 3) report on progress toward the achievement of the targets in the metropolitan transportation plan.

- **Reporting requirements for performance-based programming:** The NPRM also proposes that both states and MPOs, in the transportation improvement program (TIP), describe, "to the maximum extent practicable," the anticipated effect of the TIP's investment priorities (or program of projects) toward achieving the performance targets.

- **Delineation of interagency relationships for performance-based planning:** The NPRM requires that MPOs include a description in their metropolitan planning agreements that identifies how these parties would cooperatively implement the performance-based planning provisions.

- **Expedition of environmental review process:** The NPRM allows states and MPOs to develop programmatic mitigation plans to address potential environmental impacts of future transportation projects as part of the statewide or metropolitan transportation planning process.

- **Revision to representation of MPO governing boards:** The NPRM proposes to add providers of public transportation to the list of required parties to be represented on MPO governing boards.

- **Use of scenario planning:** Finally, the NPRM proposes to allow MPOs to utilize scenario planning during the development of the metropolitan transportation plan.

Revisions with no direct impact to MPOs

- **Relationship between states and nonmetropolitan areas:** The NPRM also requires states to work more closely with nonmetropolitan areas, and gives states the option of designating regional transportation planning organizations (RTPOs) to help address nonmetropolitan areas.

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Item 4: No Attachments