Active Transportation Database and Regional Bikeway Shapefile

Modeling Task Force

9-27-17

Rye Baerg

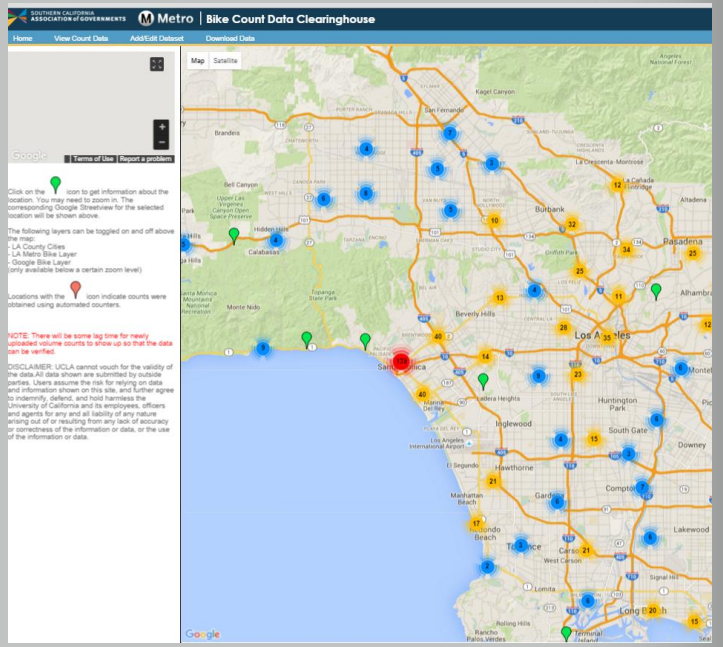
Senior Regional Planner

SCAG™

INNOVATING FOR A BETTER TOMORROW

Background

- Bicycle Data Clearinghouse Released in 2012
- Allows storage of manual counts
- Primarily focused on bicyclists



Metro®

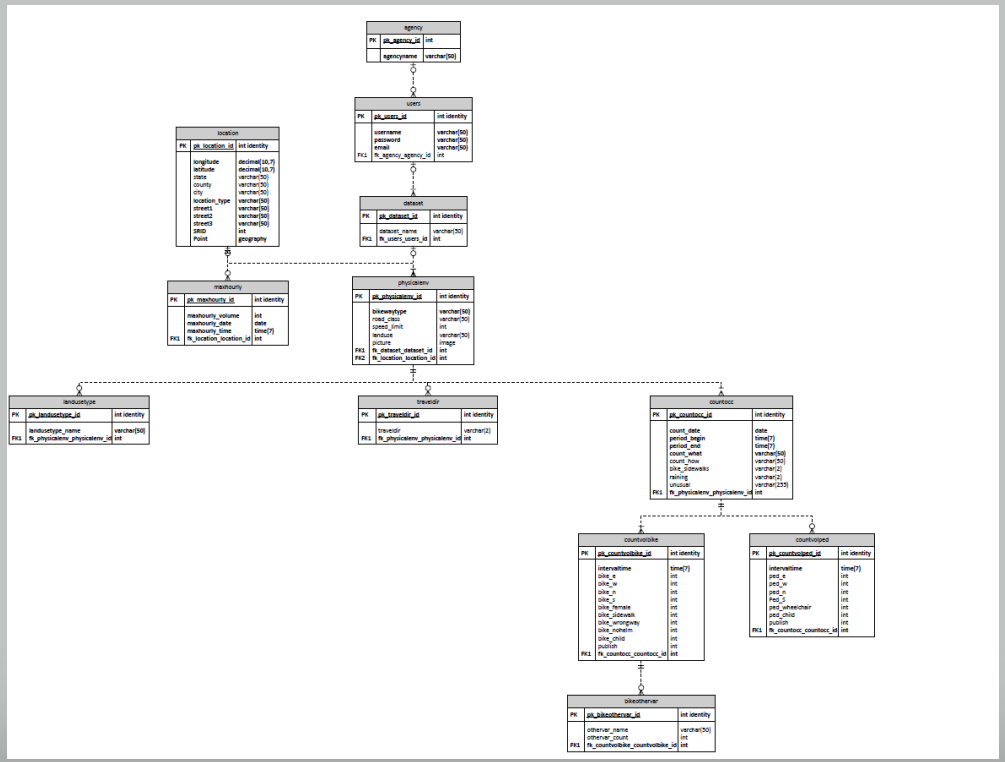
Original Deliverables

- Conducting Bicycle and Pedestrian Count Manual
- Count Forms
- Literature Review
- Modeling Integration White Paper
- Union Station Bike Count Report

Goals of the Update

- Integrate Pedestrian Data
- Improve Usability
- Improve Data Retrieval and Reporting
- Support Mobile App Integration
- Provide a Planning Tool for ATP and other Projects
- Integrate Automated Counters
- Support Regional Modeling Efforts

SCAG Manual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users
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latitude decimal(10,7)
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city varchar(50)
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street2 varchar(50)
street3 varchar(50)
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Point geography
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dataset_name varchar(50)
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maxhourly
PK pk_maxhourly_id int identity
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physicalelv
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bikewaytype varchar(50)
road_class varchar(50)
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period_end time(7)
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count_how varchar(50)
bike_Sidewalk varchar(2)
raining varchar(2)
unusual varchar(255)
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bike_w int
bike_n int
bike_s int
bike_female int
bike_Sidewalk int
bike_wrongway int
bike_noHelm int
bike_child int
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ped_n int
ped_s int
ped_wheelchair int
ped_child int
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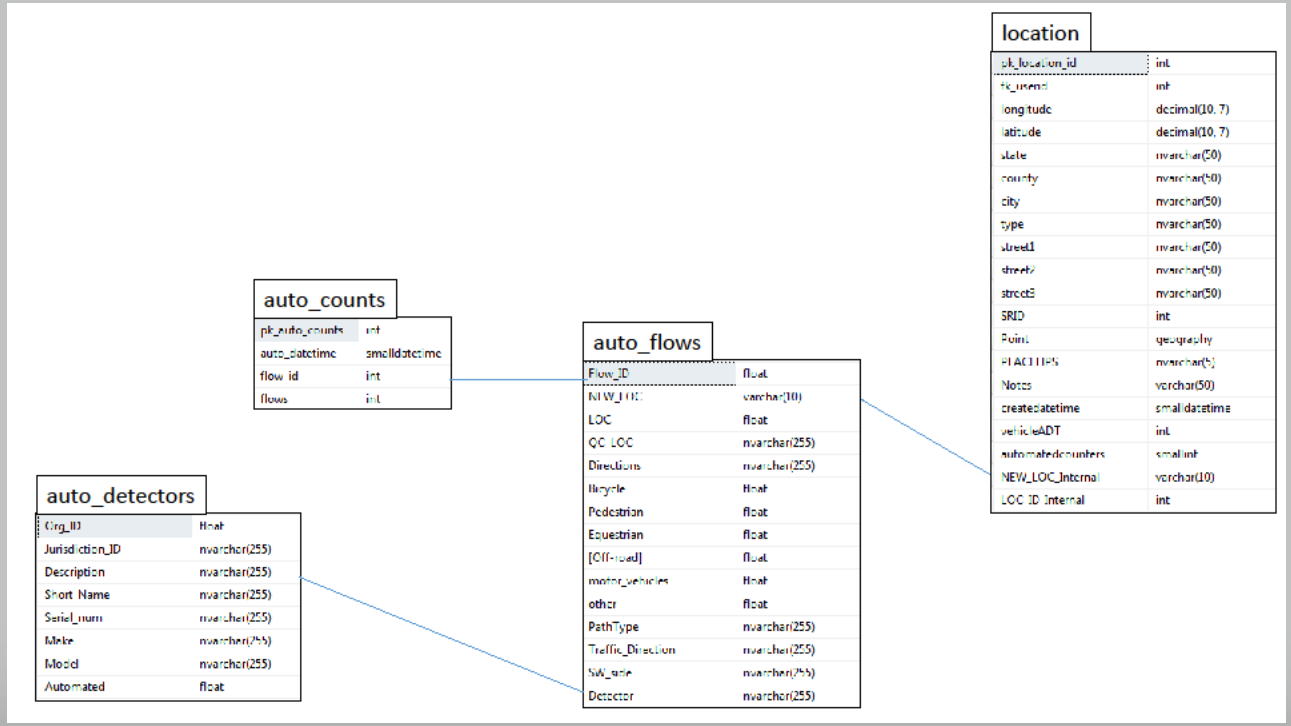
SCAG Auto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street3 nvarchar(50)
SRID int
Point geography
PLACETYPE nvarchar(5)
Notes varchar(50)
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vehicleADT int
automatedcounters smallint
NEW_LOC_Internal varchar(10)
LOC_ID_Internal int
auto_counts
pk_auto_counts int
auto_datetime smalldatetime
flow_id int
flows int
auto_flows
Flow_ID float
NEW_LOC varchar(10)
LOC float
QC_LOC nvarchar(255)
Directions nvarchar(255)
Bicycle float
Pedestrian float
Equestrian float
[Off-road] float
motor_vehicles float
other float
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Traffic_Direction nvarchar(255)
SW_side nvarchar(255)
Detector nvarchar(255)
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Jurisdiction_ID nvarchar(255)
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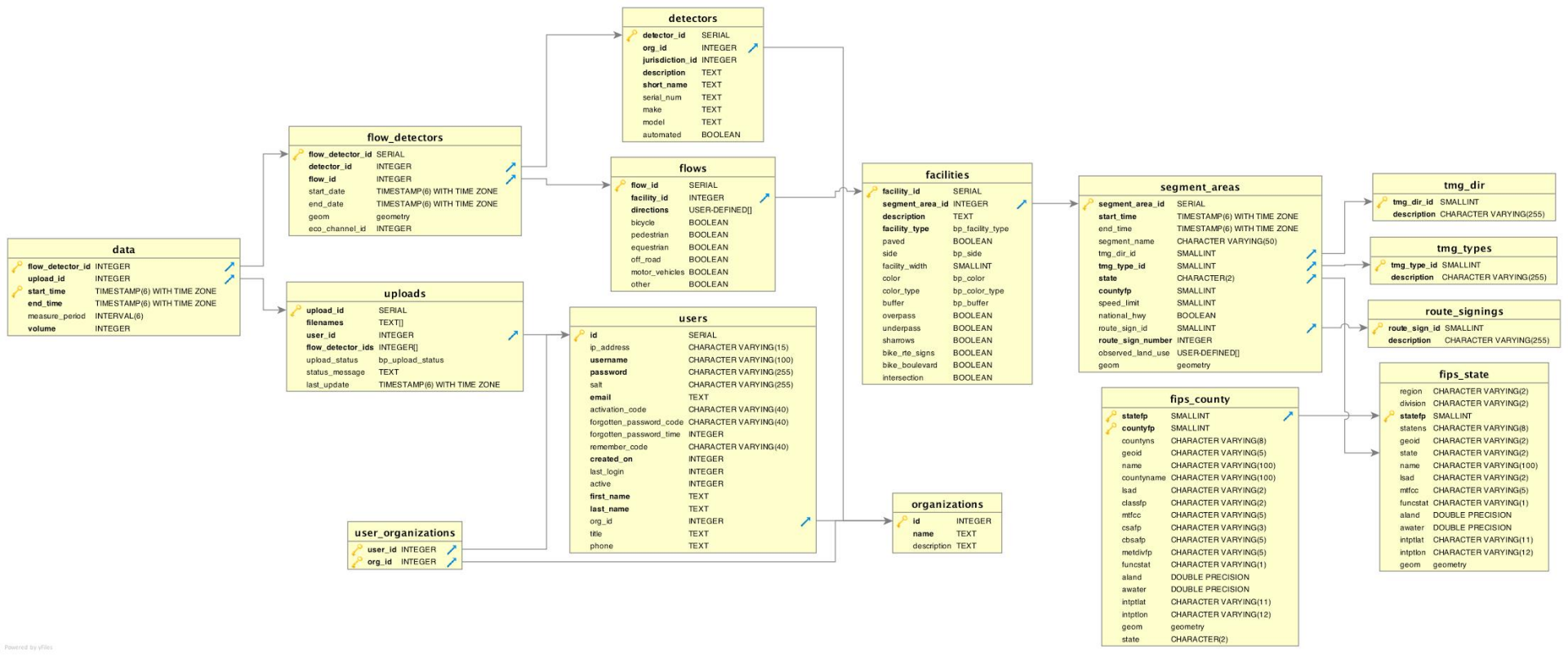
Model nvarchar(255)
Automated float

Portland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serial_num TEXT
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model TEXT
automated BOOLEAN
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flow_detector_id SERIAL
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flow_id INTEGER
start_date TIMESTAMP(6) WITH TIME ZONE
end_date TIMESTAMP(6) WITH TIME ZONE
geom geometry
eco_channel_id INTEGER
flows
flow_id SERIAL
facility_id INTEGER
directions USER-DEFINED[]
bicycle BOOLEAN
pedestrian BOOLEAN
equestrian BOOLEAN
off_road BOOLEAN
motor_vehicles BOOLEAN
other BOOLEAN
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description TEXT
facility_type bp_facility_type
paved BOOLEAN
side bp_side
facility_width SMALLINT
color bp_color
color_type bp_color_type
buffer bp_buffer
overpass BOOLEAN
underpass BOOLEAN
sharrows BOOLEAN
bike_rte_signs BOOLEAN
bike_boulevard BOOLEAN
intersection BOOLEAN
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countyfp SMALLINT
speed_limit SMALLINT
national_hwy BOOLEAN
route_sign_id SMALLINT
route_sign_number INTEGER
observed_land_use USER-DEFINED[]
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tmg_dir_id SMALLINT
description CHARACTER VARYING(255)
tmg_types
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route_signings
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user_id INTEGER
flow_detector_ids INTEGER[]
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phone TEXT
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description TEXT
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org_id INTEGER
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countyfp SMALLINT
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cbsafp CHARACTER VARYING(5)
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awater DOUBLE PRECISION
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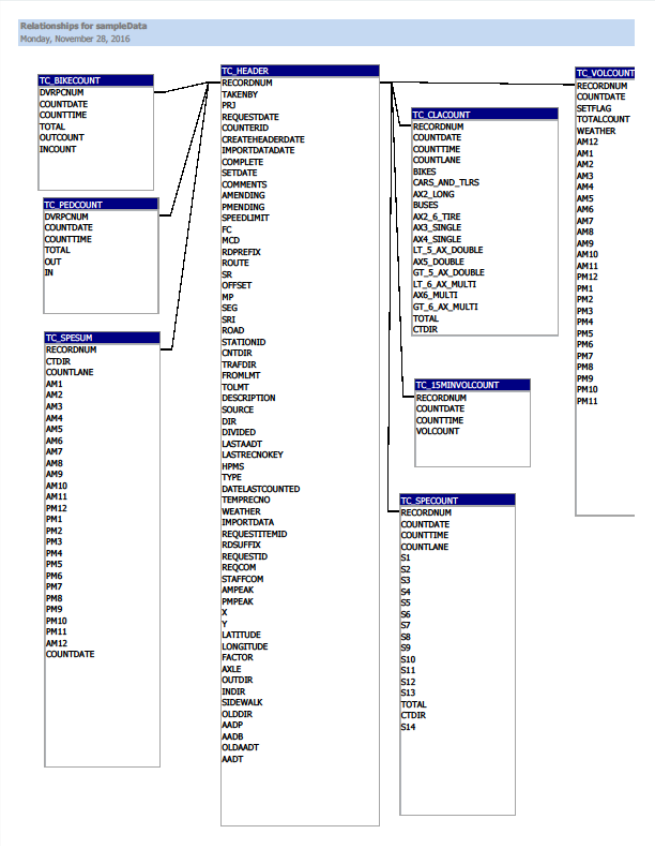
geom geometry

Deleware Valley

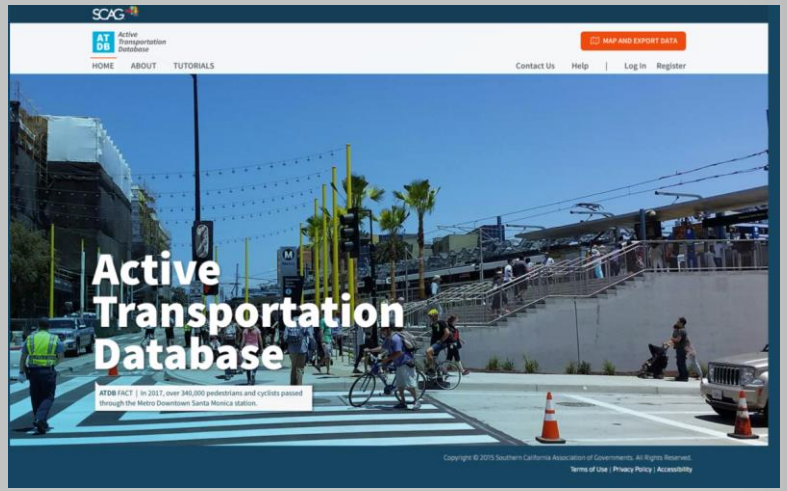


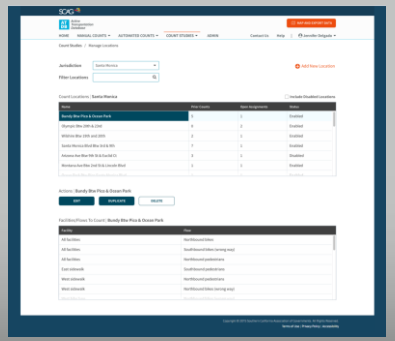
New Schema

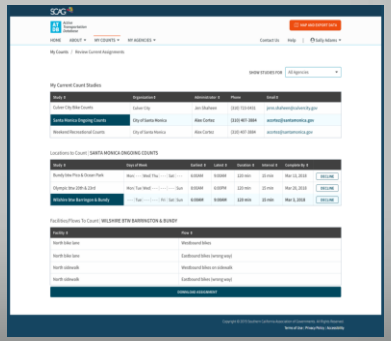
- Conforms to 2016 Traffic Monitoring Guide Standards
- Collects bicycle and pedestrian data
- Collects automated and manual count data
- Collects batched counts or individual observations

New User Interface

- Count management/ assignment
- Location management
- Data upload

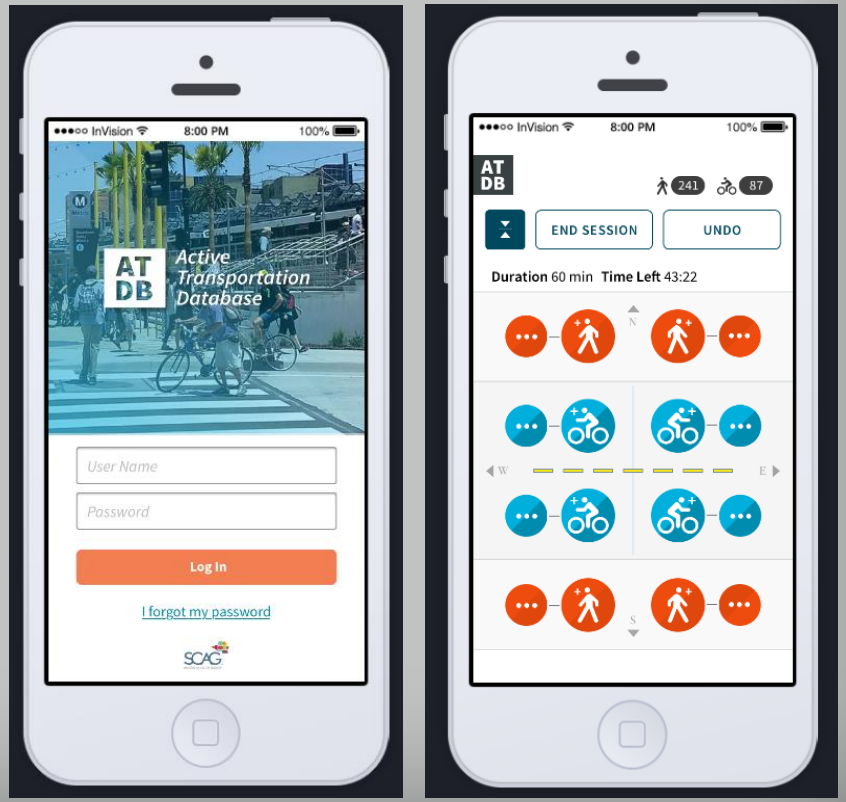






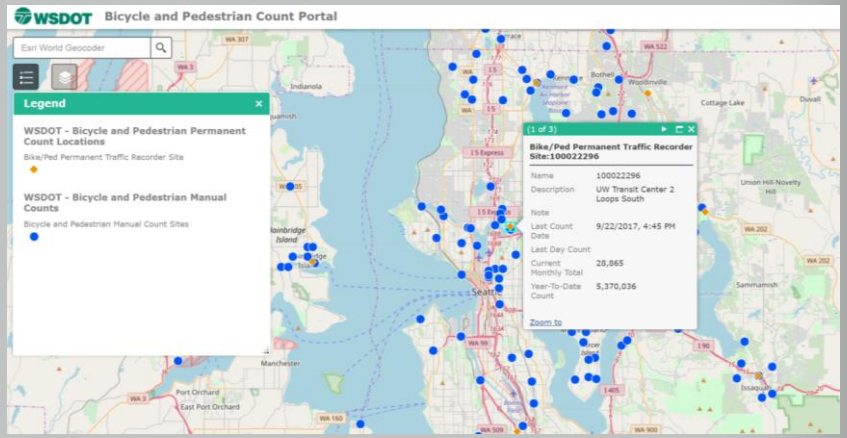
Mobile Counter App

- Collect real time observational data



Additional Components

- ESRI data viewing and download portal
- Automated counter interface (API)



Bikeway Shapefile

Regional Bikeways File Attribute Inventory										
Name	Description	Values	ATSP (METRO)	METRO PROPOSED	METRO EXISTING	OCTA	WRCOG: BACKBONE *	SCAG	NMTP: SANBAG	VENTURA CNTY
Object ID/ FID	GIS-specific object ID number	ID Number	X	X	X	X	X	X	X	X
Segment ID	ID number of bikeway segment	ID Number			X (BPID_1 ?)		X	X		
Class	Existing bikeway class type	0-4	X	X	X	X		X	X	X
Status	Bikeway implementation status	Existing or Proposed/Planned		X	X	X			X	
Facility Miles	Bikeway segment length	Length in miles	X	X	X	X	X	X	X	X
Facility Width	Bikeway segment width	Width in feet								
Proposed Class	Proposed bikeway class type	0-4	X	X		X				
Street/Path/On	Street that bikeway follows.	Street name		X	X	X		X (PARTIAL)	X	
Street From	Lateral street at/or nearest to where bikeway begins.	Street name		X	X			X (PARTIAL)	X	
Street To	Lateral street at/or nearest to where bikeway ends.	Street name		X	X			X (PARTIAL)	X	
Corridor Segment ID	ID number of corridor segment to match Caltrans LRS	Corridor segment ID								
Corridor	Corridor that bikeway follows.	Corridor name	X							
Corridor From	Lateral corridor at/or nearest to where bikeway begins.	Corridor name	X							
Corridor To	Lateral corridor at/or nearest to where bikeway begins.	Corridor name	X							
Adopted Date	Date that proposed bikeway segment was formally adopted.	MM/DD/YR		X (YR)					X	
Installation Date	Date that bikeway segment was installed.	MM/DD/YR			X					
Jurisdiction	Jurisdiction(s) in which bikeway segment is located.	Name of jurisdiction(s)	X	X	X	X		X (PARTIAL)	X	
UCOST	Estimated/actual per unit cost of bikeway segment implementation	Cost in dollars		X						
SCOST	Estimated/actual cost of complete bikeway segment implementation.	Cost in dollars		X					X	
Plan Source	Name of Active Transportation or Bicycle Master Plan for jurisdiction in which bikeway segment is located.	Name of plan	X	X				X		
Jurisdiction of Plan	Jurisdiction of Active Transportation or Bicycle Master Plan in which bikeway segment is located.	COG, County, or City name		X				X		
Plan URL	Internet URL for Active Transportation or Bicycle Master Plan for jurisdiction in which bikeway segment is located.	URL						X		
Plan Stage	Plane stage of Active Transportation or Bicycle Master Plan for jurisdiction in which bikeway segment is located.	Adopted or Draft or N/A								
Plan Date Adopted	Date on which Active Transportation or Bicycle Master Plan was adopted.	MM/DD/YR								
ATP Application ID/SPG Application ID	If applicable, ID number of Active Transportation Program (ATP) or Sustainability Planning Grant (SPG) application for project in which bikeway segment is featured or included.	ID information								
Project FTIP	If applicable, ID number of Federal Transportation Improvement Program (FTIP) project in which bikeway segment is featured or included.	FTIP number								
Comment/Note	Supplemental information regarding proposed or existing bikeway segment.	Notes							X	

Bikeway Shapefile

- Standard metadata for all 6 counties
- Required in all future SCAG ATP contracts
- Will provide to Google and 3rd party every 2 years
- Will post to open data platform

FieldName	Attribute	Description	Values	Field Type
FID	FID	GIS-generated object ID number	ID Number	Object ID
BPID	BPID	Existing county bike facility ID number	ID Number	Double
CALTRNS_ID	Corridor Segment ID	ID number of corridor segment to match Caltrans LRS	Corridor segment ID	Double
Seg_ID	Segment ID	Assigned ID number of bikeway segment	ID Number	Double
Last_Updt	Last Updated	Date the segment in the shapefile was last updated.	MM/DD/YR	Date
Name	Segment name	Project name of bikeway segment or improvement	Name of bikeway or improvement	String
JURIS	Jurisdiction	Jurisdiction(s) in which bikeway segment is located.	Name of jurisdiction(s)	String
COUNTY	County Name	County in which bikeway segment is located.	Name of county	String
Class_E	Existing Class	Existing bikeway class type	1-4 (or more)	Short
FacType_E	Existing Facility Type	Existing bikeway type	Type description	String
Class_P	Proposed Class	Proposed bikeway class type	1-4 (or more)	Short
FacType_P	Proposed Facility Type	Proposed improvement or bikeway type	Type description	String
Status	Status	Bikeway implementation status	Existing or Proposed/Planned	String
Install_Da	Installation Date	Date that bikeway segment was installed.	MM/DD/YR or blank for planned facilities	Date
Miles_E	Facility Miles	Bikeway segment length	Length in miles	Double
ON	Street	Street that bikeway follows.	Street name	String
From_	Street From	Lateral street ad/or nearest to where bikeway begins.	Street name	String
To_	Street To	Lateral street ad/or nearest to where bikeway ends.	Street name	String
Plan_Adop	Plan Adopted Date	Date that proposed bikeway segment was formally adopted in plan or circulation element.	MM/DD/YR	Date
Plan_Ref	Plan Name	Name of Active Transportation or Bicycle Master Plan for jurisdiction in which bikeway segment is located.	Name of plan	String
Plan_Juris	Jurisdiction of Plan	Jurisdiction of Active Transportation or Bicycle Master Plan in which bikeway segment is located.	COG, County, or City	String
Plan_URL	Plan URL	Internet URL for Active Transportation or Bicycle Master Plan for jurisdiction in which bikeway segment is located.	URL	String
Plan_Stage	Plan Stage	Plan stage of Active Transportation or Bicycle Master Plan for jurisdiction in which bikeway segment is located.	Adopted or Draft or N/A	String
ACOST	ACOST	Estimated/actual per unit cost of bikeway segment implementation.	Cost in dollars	String
SCOST	SCOST	Estimated/actual cost of complete bikeway segment implementation.	Cost in dollars	String
ATP_ID	ATP Application ID/SPG Application ID	If applicable, ID number of Active Transportation Program (ATP) or Sustainability Planning Grant (SPG) application for project in which bikeway segment is featured or included.	ID information	Long
RTIP_ID	Project FTIP	If applicable, ID number of Federal Transportation Improvement Program (FTIP) project in which bikeway segment is featured or included.	FTIP number	Long
Comment	Comment/Note	Supplemental information regarding proposed or existing bikeway segment.	Notes	String
Shape_Leng	Polyline Length	Length of bikeway polyline	Length in feet	Double

Bikeway Shapefile

Level of Traffic Stress Variables				
Fac_width	Facility Width	Bikeway segment width	Width in feet	Double
ADT	Average Daily Traffic	Average daily traffic (ADT) on street on which bikeway segment is located.	Average daily traffic number	Double
Num_Lanes	Number of lanes	Number of lanes on street on which bikeway segment is located.	Number of lanes	Long
Speed_lmt	Speed limit	Posted speed limit of street on which bikeway is located.	Speed limit in MPH	Short
Median_typ	Median Type	Presence/type of median on street on which bikeway segment is located.	None (no median or unprotected area less than 4 feet wide), Uprotected (median exists with a width of 4 feet or more), or Curbed (Barrier or mountable curbs with a minimum height of 4 inches)	String
Turn_confg	Turn configuration	Configuration of right (and left, if data is available) lane approach toward intersection on which bikeway segment is located.	Single lane with length <75 ft, Single lane with length between 75 to 150 ft, or Other	String
Int_Cntrl	Intersection control type	Control type of intersection	Signalized or Unsignalized	String
Slope	Slope	Slope of roadway segment, computed from elevation data imported from USGS Digital Elevation Model	Slope as percentage or categorical values (low, medium, high, extreme)	String

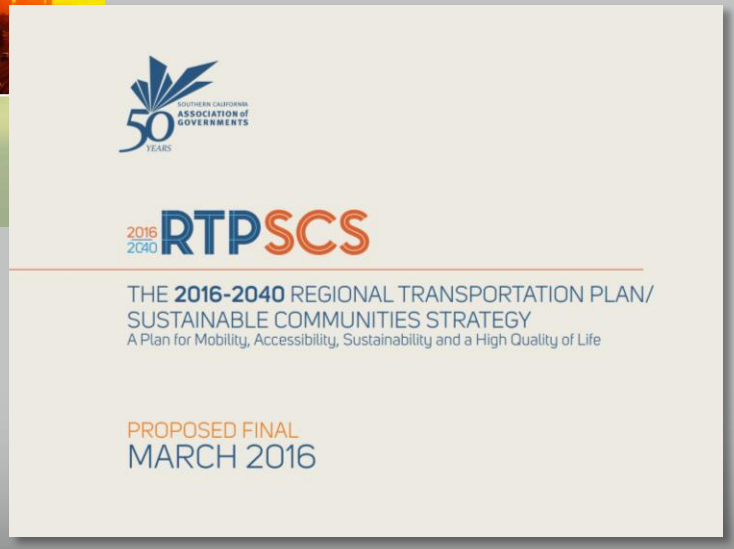
Active Transportation Health and Economic Impact Study

Rye Baerg
Senior Regional Planner

SCAG™
INNOVATING FOR A BETTER TOMORROW

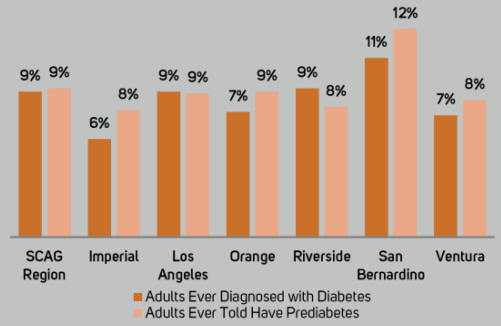
Context


REGIONAL TRANSPORTATION PLAN
2012–2035 RTP
SUSTAINABLE COMMUNITIES STRATEGY
Towards a Sustainable Future
Southern California Association of Governments
ADOPTED APRIL 2012


SOUTHERN CALIFORNIA ASSOCIATION of GOVERNMENTS
50 YEARS
2016 2040 RTPSCS
THE 2016-2040 REGIONAL TRANSPORTATION PLAN/
SUSTAINABLE COMMUNITIES STRATEGY
A Plan for Mobility, Accessibility, Sustainability and a High Quality of Life
PROPOSED FINAL
MARCH 2016

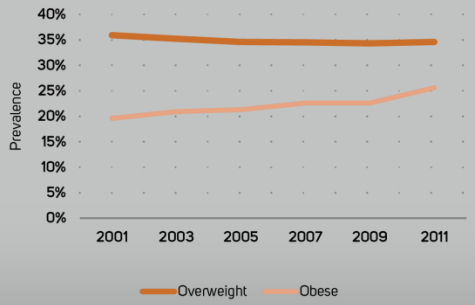
Current Chronic Disease Rates

FIGURE 8 Diabetes and Prediabetes by County 2011



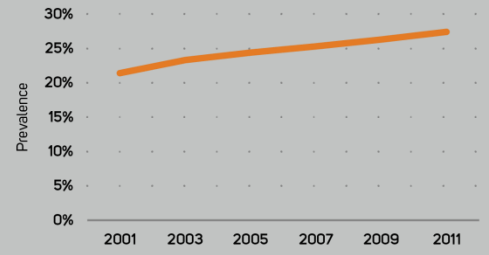
Source: http://healthpolicy.ucla.edu/chis

FIGURE 9 Overweight and Obesity Trends by Year 2001-2011



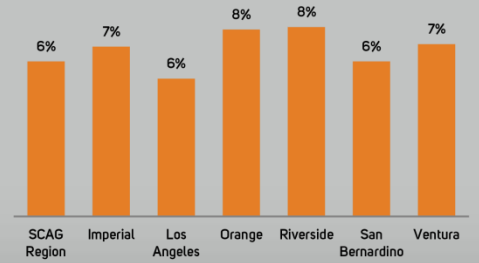
Source: http://healthpolicy.ucla.edu/chis

FIGURE 10 Hypertension Trends by Year 2001-2011



Source: http://healthpolicy.ucla.edu/chis

FIGURE 11 Heart Disease by County 2011



Source: http://healthpolicy.ucla.edu/chis

Physical Activity

"Physical activity is the closest thing we have to a wonder drug. Being active is one of the most important things people of all ages, sizes, and shapes can do to improve their health."

Dr. Thomas Frieden

Director of the Centers for Disease Control and Prevention (CDC)

Response to Stakeholders

Public Health Subcommittee

2. **Provide robust public health data and information, as feasible, to better inform regional policy, the development of the 2016-2040 RTP/SCS, and support public health stakeholder participation.**
   - To the extent feasible, include information in the following emphasis areas:
     - Monetary and health impacts of different plan alternatives
     - Physical activity
     - Emissions and exposure
       - Consider implementation of zero- and/or near-zero emissions vehicles
     - Safety
     - Health outcomes (for example, incidence of chronic disease) (Note: SCAG currently does not possess data or technical capacity to produce health outcomes).
   - Pursue feasible enhancements in data and analysis with regards to Environmental Justice report of RTP/SCS (for example, exposures and likely health issues).
   - Coordinate and provide data and technical foundation for potential regional public health policy and expanded performance measures, as feasible.

Next Steps:

Pursue scenario planning tool enhancements to include increased and dynamic public health data. Solicit technical review through technical working groups and other forums. Prepare final recommendations on plan methodologies, data and performance measures in advance of release of draft plan in late 2015.

public health alliance of southern california
A Partnership for Healthy Places

City of Long Beach Department of Health and Human Services
Los Angeles County Department of Public Health
City of Pasadena Public Health Department
County of Riverside Department of Public Health
Santa Barbara County Public Health Department
County of San Bernardino Department of Public Health
County of San Diego Health and Human Services Agency
Ventura County Public Health

June 12, 2014

Carl Morehouse, SCAG President
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

Re: Incorporating Health and Social Determinants of Health into Scenario Planning and Evaluation

The Public Health Alliance of Southern California (Alliance) is a collaboration of local health departments in Southern California. Our vision is that all Southern California communities are healthy, vibrant and sustainable places to live, work and play. We see the scenario development and evaluation process for the 2016 Regional Transportation Plan and Sustainable Community Strategy (RTP/SCS) as an opportunity to develop a land use and transportation plan that advances this vision.

The Alliance commends SCAG for its June 6, 2013 adoption of the Public Health Subcommittee's recommendations, and for the participation of SCAG staff in Alliance working groups. Through these joint discussions we've worked together to identify the best mechanisms for the integration of public health outcomes into the 2016-2040 RTP/ SCS. We look forward to continuing this dialogue as we work together to improve health outcomes for all of the people who live and work in the SCAG region.

Scenario Development:
The Alliance would like to partner with SCAG, the public, and other stakeholders to develop a scenario focused on delivering the greatest health outcome improvements in our region. Research indicates that social determinants of health—the physical and social environments we live in-- account for 70-80% of health outcomes[1], and that lower income communities have poorer health outcomes[2]. Given the interrelation of income, community design and health outcomes, the Alliance encourages the development of a scenario that improves health outcomes by advancing economic and social resiliency for low-income residents of the region.

[1] Mokdad AH, Marks JS, Stroup DF, Gerberding JL. Actual causes of death in the United States, 2000. JAMA. 2004;291(10):1238--1245. Abstract available at: http://jama.jamanetwork.com/article.aspx?articleid=198357
[2] *Health Inequities in the Bay Area*, available at www.barhii.org.

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p. 619.291.9505 | f. 619.260.1510 | www.PHASoCal.org

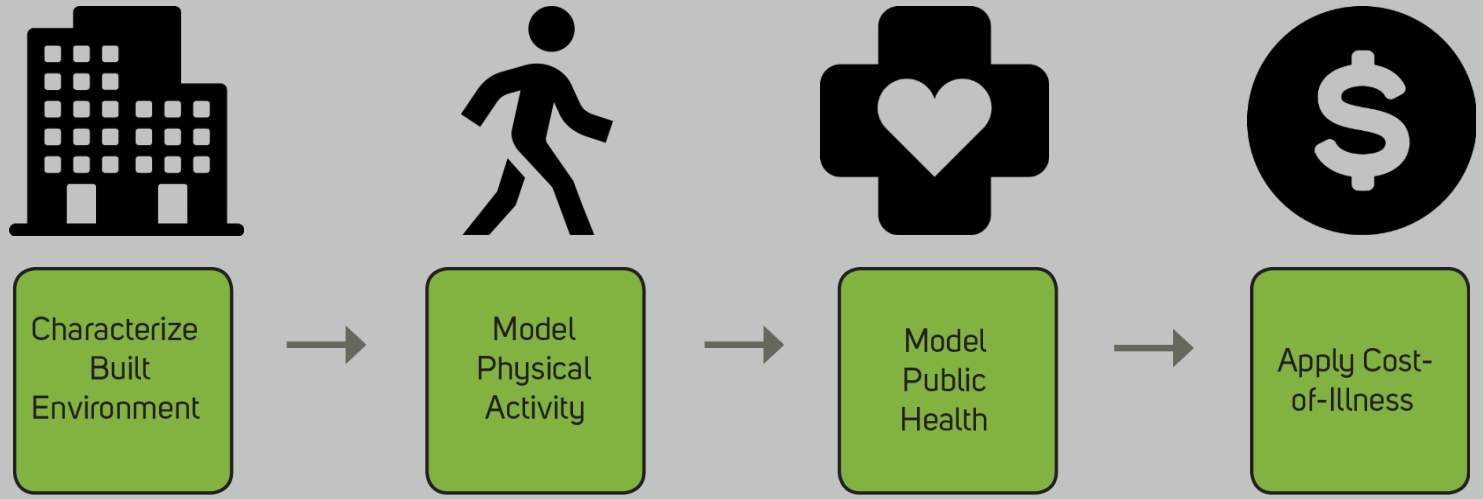
California Public Health Assessment Model

CALIFORNIA STRATEGIC GROWTH COUNCIL

Study Purpose

Goal: Estimate current annual public health, transportation and economic costs and benefits of bicycling and walking on the SCAG region's economy

Modeling Process



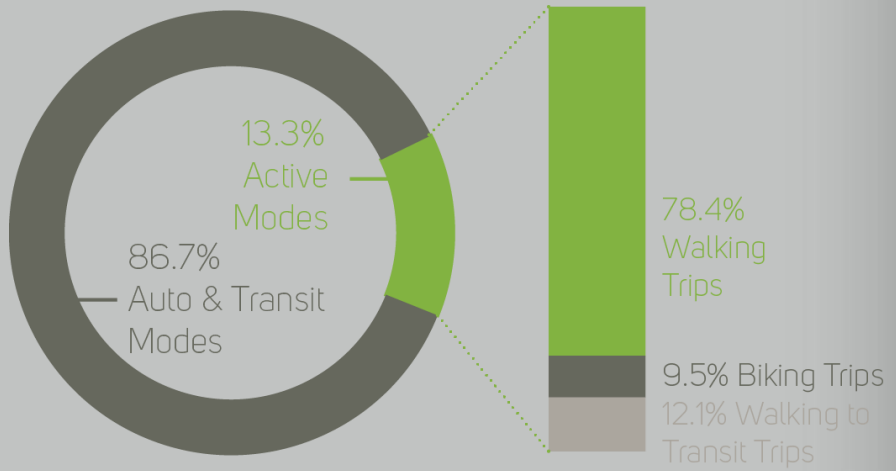
Physical Activity

Daily Trips in the SCAG Region by Mode

3.3 Million
Hours of Daily Walking

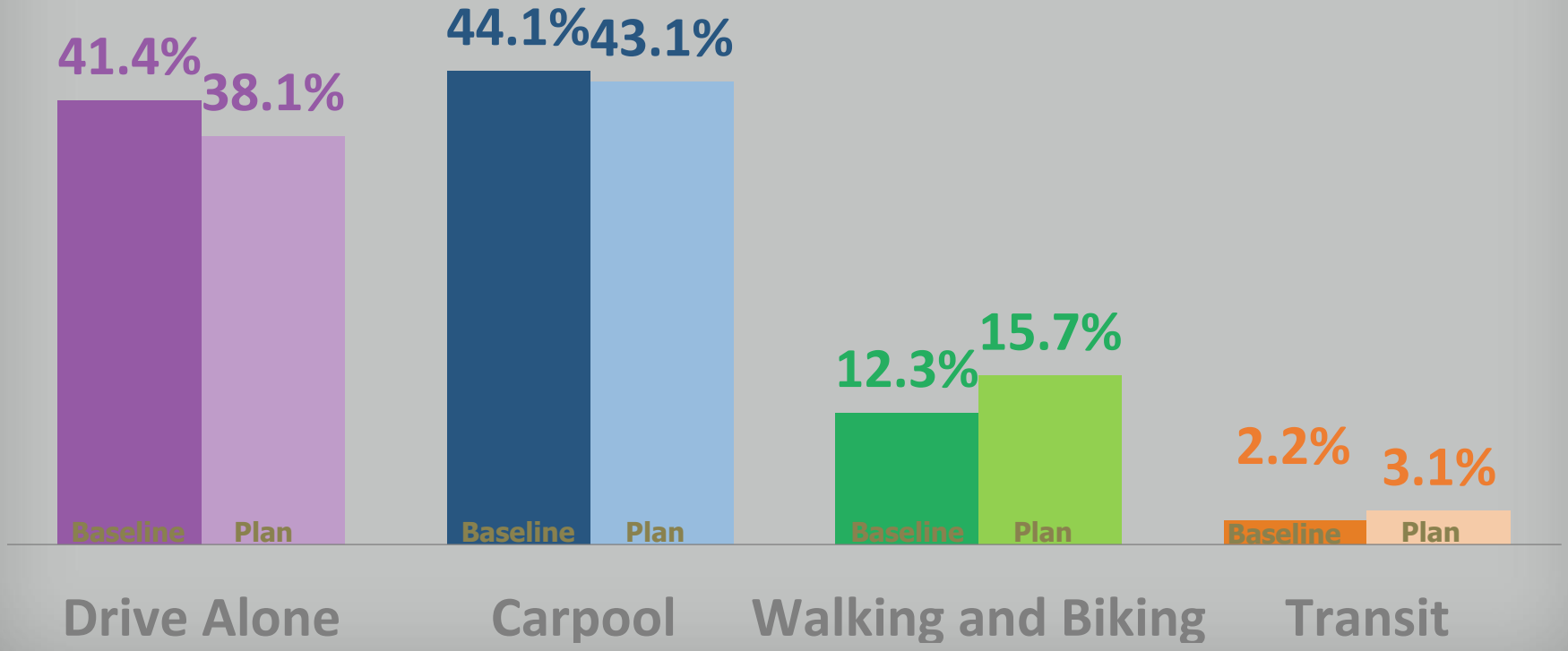
1.9 Million
Hours of Daily Biking

139 Thousand
Hours of Daily Walking to Transit



Mode Choice – Total Trips

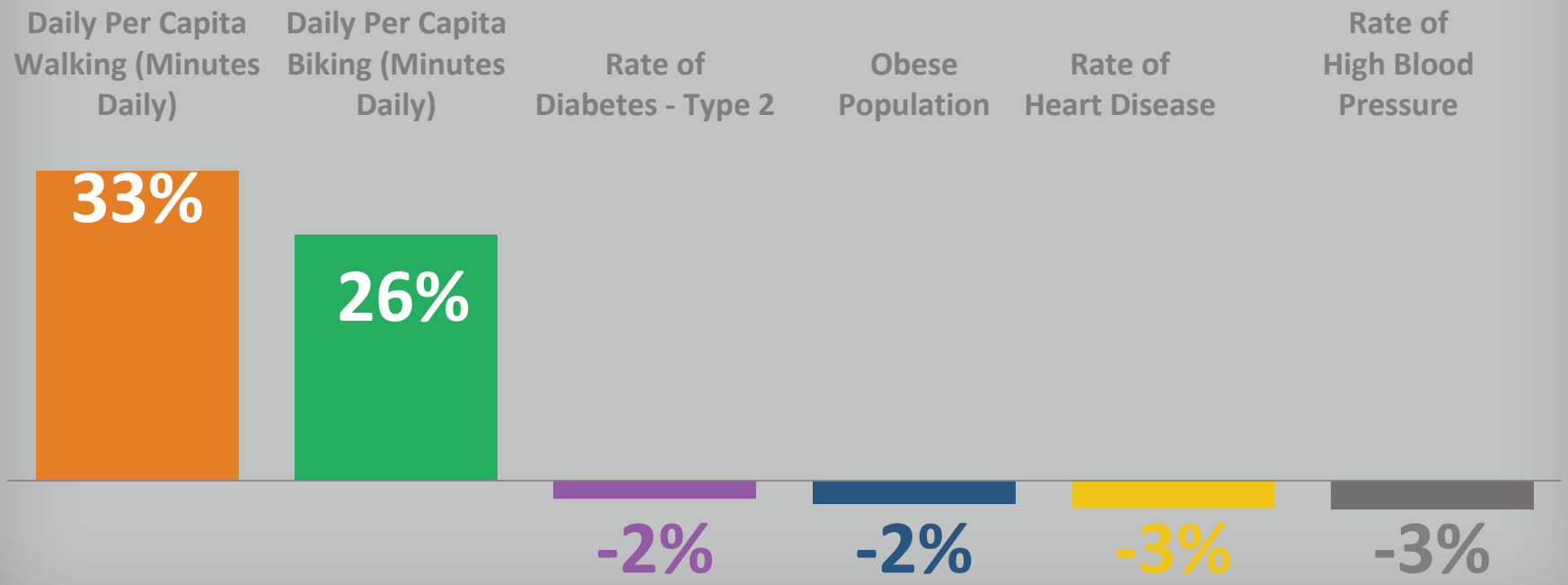
Plan vs. Trend Baseline



Note: These figures include additional improvements in walking and biking associated with the benefits of certain active transportation investments, which are analyzed as a supplement to SCAG's Regional Trip Based Model

Public Health Outcomes in 2040 – Adults Aged 18-65

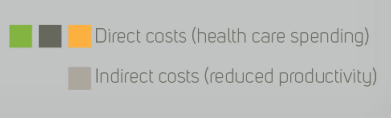
Plan vs. Trend Baseline



* Results are for the new population in areas of the plan experiencing land use changes.

Current Costs to the Region

Health Condition	Adult Prevalence (2012) (Ages 18-64)	Senior Prevalence (2012) (Ages 65+)	Cost per Case
Diabetes	6.6% 753,000 Cases	21.1% 428,000 Cases	$7,774 / $3,311
Heart Disease	3.4% 391,000 Cases	19.2% 488,000 Cases	$4,055 / $3,633
Hypertension	22.0% 2,514,000 Cases	61.1% 1,238,000 Cases	$551 / $44



Current Costs to the Region

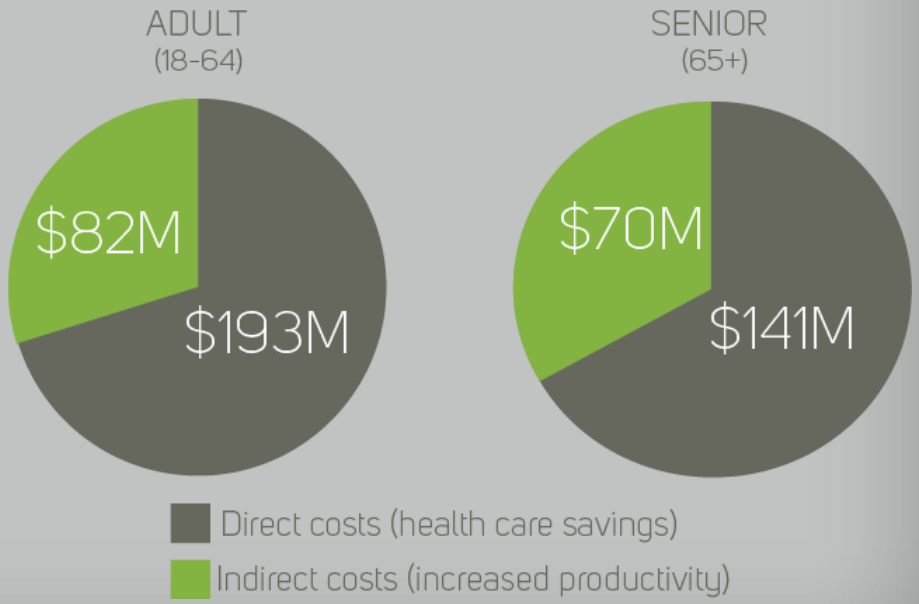
$12.8 Billion

Total annual regional costs of diabetes, heart disease, and hypertension in ages 18-64. Seniors add an additional $8.5 billion in health costs for the same conditions.

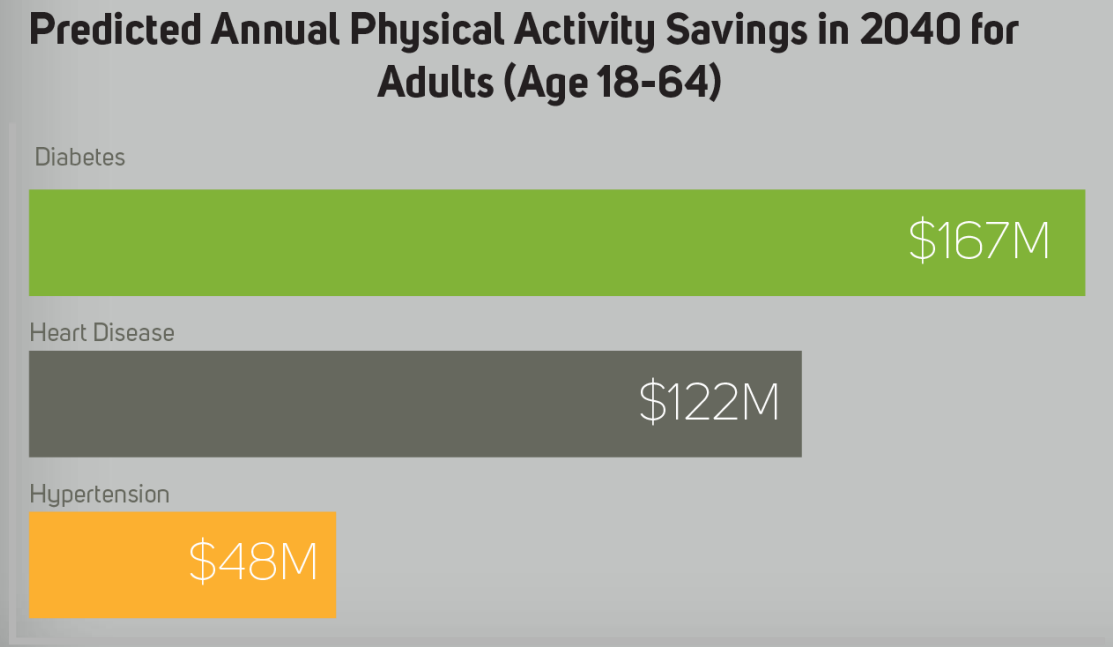
Current Infrastructure

$488 Million

Estimated total annual physical activity health savings for adults and seniors due to avoided health care expenditures and increased productivity

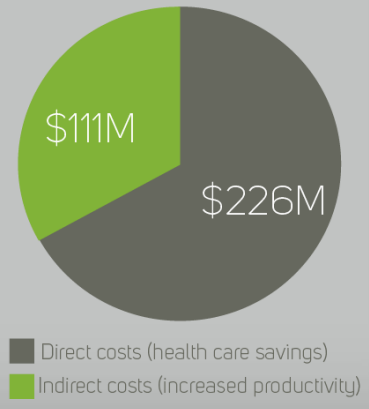


Additional Savings from 2016 RTP/SCS Implementation



$337 Million

Predicted annual physical activity savings in 2040 in adults ages 18-64 from full RTP implementation



2016 RTP/SCS Implementation

$4.5 Billion

Overall, accumulated savings from reduced hypertension, diabetes, and heart disease in adults (ages 18-64) is predicted to be $4.5 billion throughout the life of the RTP.

2016 RTP/SCS Implementation

RTP Active Transportation Investment Areas

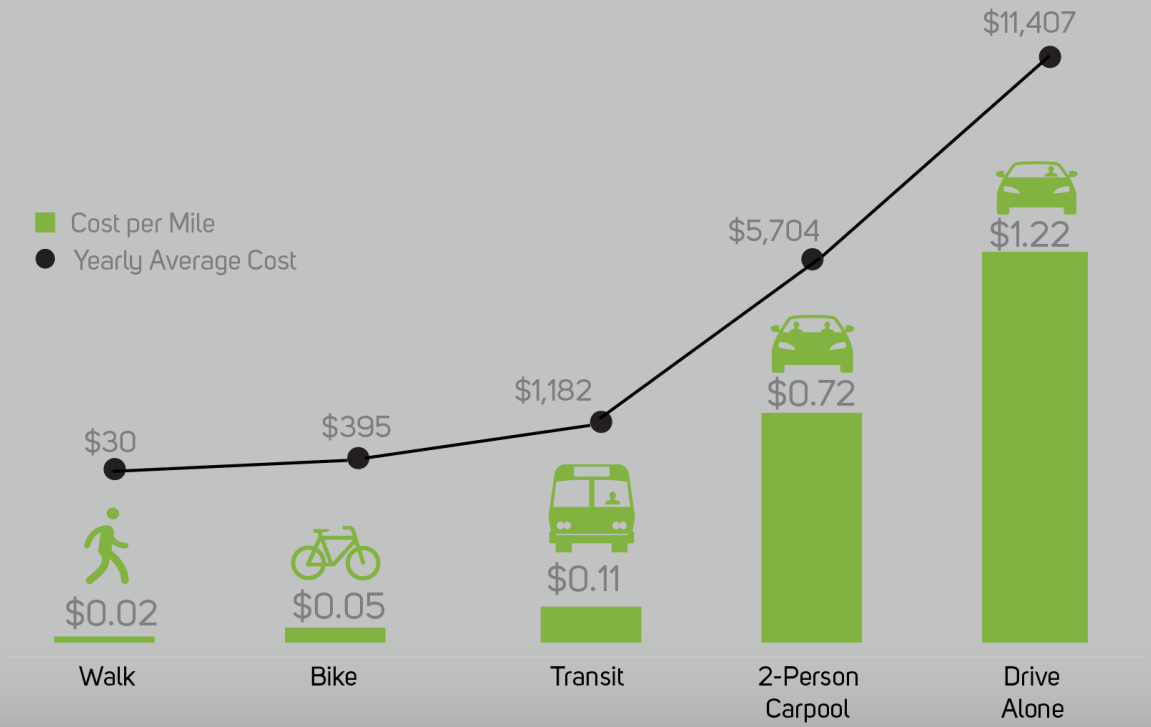
$2.8B
Regional Trip Strategies

$2.2B
Transit Integration Strategies

$7.6B
Short Trip Enhancements (sidewalks and bikeways)

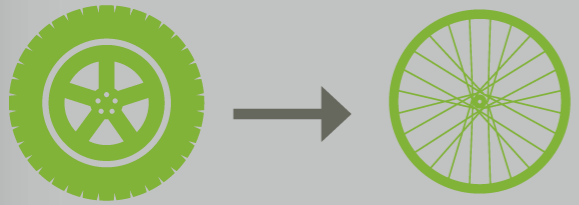
$288M
Education and Encouragement Campaigns

Consumer Savings



Yearly and Per Mile Costs by Mode

Consumer Savings



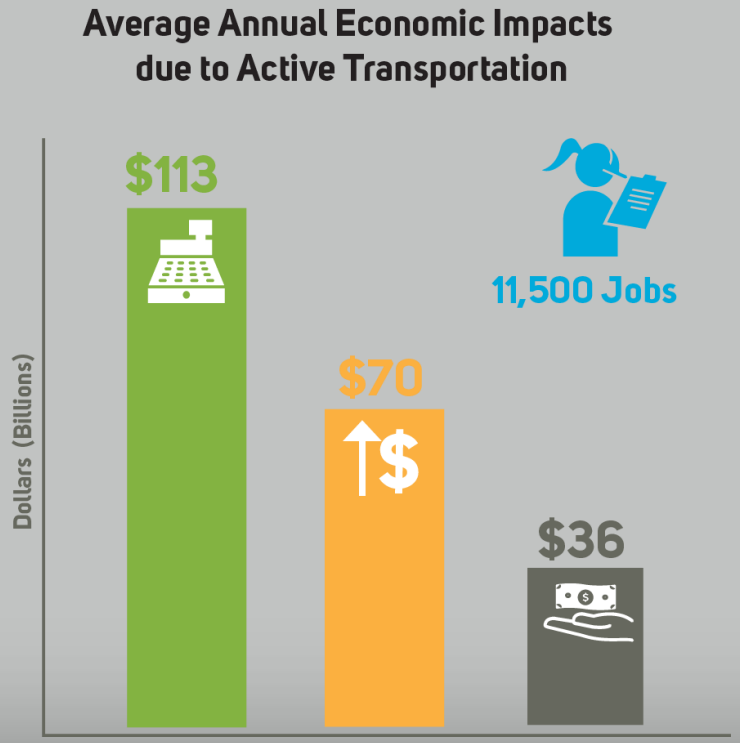
2.3 Million

Estimated annual vehicle-miles traveled daily that could be eliminated in the year 2040 through RTP active transportation programming

$976 Million

Potential annual savings in the year 2040 from estimated reduced vehicle-miles traveled

Regional Impact



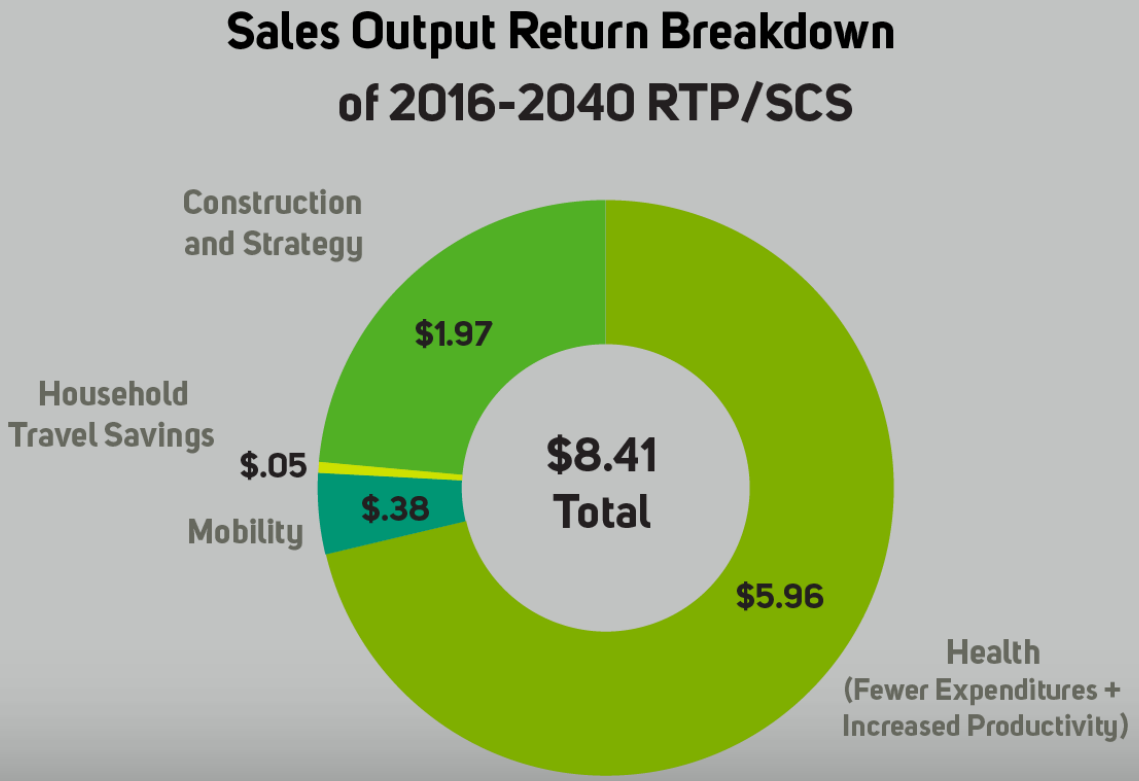
Employment (total jobs)
The total number of jobs associated with active transportation infrastructure spending and the associated health effects

Personal Income ($B)
Employment total multiplied by average wages by position type

Sales Output ($B)
Sales output discounted for prior stages of manufacturing that occurred outside the SCAG region.

Value Added ($B)
The difference between retail sale prices and the cost to purchase the item being sold.

Benefits by Input



Thank you!

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