SCAG
INNOVATING FOR A BETTER TOMORROW

SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS
900 Wilshire Blvd., Ste. 1700
Los Angeles, CA 90017
T: (213) 236-1800
www.scag.ca.gov

REGULAR MEETING

TRANSPORTATION COMMITTEE

Thursday, August 1, 2019
11:00 AM - 12:00 PM

SCAG MAIN OFFICE
900 Wilshire Blvd., Ste. 1700
RC Board Room
Los Angeles, CA 90017
(213) 236-1800

If members of the public wish to review the attachments or have any questions on any of the agenda items, please contact Tess Rey-Chaput at (213) 236-1908 or via email at REY@scag.ca.gov. Agendas & Minutes for the TC - Transportation Committee are also available at: www.scag.ca.gov/committees

SCAG, in accordance with the Americans with Disabilities Act (ADA), will accommodate persons who require a modification of accommodation in order to participate in this meeting. SCAG is also committed to helping people with limited proficiency in the English language access the agency's essential public information and services. You can request such assistance by calling (213) 236-1908. We request at least 72 hours (three days) notice to provide reasonable accommodations and will make every effort to arrange for assistance as soon as possible.

TC - Transportation Committee
Members – August 2019

1. **Hon. Cheryl Viegas-Walker**
   TC Chair, El Centro, RC District 1

2. **Hon. Jess Talamantes**
   TC Vice Chair, Burbank, RC District 42

3. **Hon. Sean Ashton**
   Downey, RC District 25

4. **Hon. Rusty Bailey**
   Riverside, RC District 68

5. **Hon. Kathryn Barger**
   Los Angeles County

6. **Hon. Ben Benoit**
   Air District Representative

7. **Hon. Will Berg**
   Port Hueneme, VCOG

8. **Hon. Austin Bishop**
   Palmdale, North L.A. County

9. **Hon. Drew Boyles**
   El Segundo, President's Appt. (Member at Large)

10. **Hon. Art Brown**
    Buena Park, RC District 21

11. **Hon. Joe Buscaino**
    Los Angeles, RC District 62

12. **Hon. Ross Chun**
    Aliso Viejo, OCCOG

13. **Hon. Jonathan Curtis**
    La Canada Flintridge, RC District 36

14. **Hon. Diane Dixon**
    Newport Beach, OCCOG

15. **Hon. JJohn Dutrey**
    Montclair, SBCTA

16. **Hon. Emily Gabel-Luddy**
    Burbank, AVCJPA

17. **Hon. James Gazeley**
    Lomita, RC District 39

18. **Hon. Jack Hadjinian**
    Montebello, SGVCOG

19. **Sup. Curt Hagman**
    San Bernardino County

20. **Hon. Ray Hamada**
    Bellflower, GCCOG

21. **Hon. Jan Harnik**
    RCTC

22. **Hon. Dave Harrington**
    Aliso Viejo, OCCOG

23. **Hon. Steven Hofbauer**
    Palmdale, RC Disctrict 43

24. **Hon. Jose Huizar**
    Los Angeles, RC District 61

25. **Hon. Mike Judge**
    VCTC

26. **Hon. Trish Kelley**
    Mission Viejo, OCCOG

27. **Hon. Paul Krekorian**
    RC District 49/Public Transit Rep.

28. **Hon. Linda Krupa**
    Hemet, WRCOG

29. **Hon. Randon Lane**
    Murrieta, RC District 5

30. **Hon. Clint Lorimore**
    Eastvale, RC District 4

31. **Hon. Steve Manos**
    Lake Elsinore, RC District 63

32. **Hon. Ray Marquez**
    Chino Hills, RC District 10

33. **Hon. Larry McCallon**
    Highland, RC District 7

34. **Hon. Brian McDonald**
    Tribal Govt Regl Plng Board

35. **Hon. Marsha McLean**
    Santa Clarita, RC District 67

36. **Hon. Dan Medina**
    Gardena, RC District 28

37. **Hon. LDennis Michael**
    Rancho Cucamonga, RC District 9

38. **Hon. Lisa Middleton**
    Palm Springs, CVAG

39. **Hon. Fred Minagar**
    Laguna Niguel, RC District 12

40. **Hon. Carol Moore**
    Laguna Woods, OCCOG

41. **Hon. Ara Najarian**
    Glendale, SFVCOG

42. **Hon. Frank Navarro**
    Colton, RC District 6

43. **Hon. Chuck Puckett**
    Tustin, RC District 17

44. **Hon. Teresa RealSebastian**
    Monterey Park, RC District 34

45. **Hon. Dwight Robinson**
    Lake Forest, OCCOG

46. **Hon. Carlos Rodriguez**
    Yorba Linda, Pres. Appt., Member at Large

47. **Hon. Crystal Ruiz**
    San Jacinto, WRCOG

48. **Hon. Ali Saleh**
    Bell, RC District 27

49. **Hon. Damon Sandoval**
    Morongo Band of Mission Indians

50. **Hon. Tim Sandoval**
    Pomona, RC District 38

51. **Hon. Rey Santos**
    Beaumont, RC District 3

52. **Hon. Marty Simonoff**
    Brea, RC District 22

53. **Hon. Thomas Small**
    Culver City, WSCCOG

54. **Hon. Karen Spiegel**
    Riverside County

55. **Hon. Cynthia Sternquist**
    Temple City, SGVCOG

56. **Hon. Brent Tercero**
    Pico Rivera, GCCOG

57. **Hon. Steve Tye**
    Diamond Bar, RC District 37

58. **Hon. Donald Wagner**
    Orange County

59. **Hon. Alan Wapner**
    SBCTA

60. **Hon. Alicia Weintraub**
    Calabasas, LVMCOG

61. **Mr. Paul Marquez, Ex-Officio Member**
    Caltrans District 7

This Page Intentionally Left Blank

TRANSPORTATION COMMITTEE AGENDA

Southern California Association of Governments
900 Wilshire Boulevard, Suite 1700 – RC Board Room
Los Angeles, California 90017
Thursday, August 1, 2019
11:00 AM

The Transportation Committee may consider and act upon any of the items on the agenda regardless of whether they are listed as Information or Action items.

CALL TO ORDER AND PLEDGE OF ALLEGIANCE
(The Honorable Cheryl Viegas-Walker, Chair)

PUBLIC COMMENT PERIOD
Members of the public desiring to speak on items on the agenda, or items not on the agenda, but within the purview of the Committee, must fill out and present a Public Comment Card to the Assistant prior to speaking. Comments will be limited to three (3) minutes per speaker. The Chair has the discretion to reduce the time limit based upon the number of speakers and may limit the total time for all public comments to twenty (20) minutes.

REVIEW AND PRIORITIZE AGENDA ITEMS

CONSENT CALENDAR

Approval Item

1. Minutes of the Meeting, June 6, 2019 — Page 8

Receive and File

2. Green Region Initiative - Sustainability Map Update — Page 16
3. Caltrans District Vulnerability Assessments — Page 22

INFORMATION ITEMS

4. Aviation Program Update: Regional Air Passenger and Cargo Forecast — 15 mins. — Page 42
(Hiroshi Ishikawa, Associate Regional Planner, SCAG)

5. Connect SoCal New Mobility Framework — 30 mins. — Page 57
(Marco Anderson, Program Manager, SCAG)

CHAIR'S REPORT
(The Honorable Cheryl Viegas-Walker, Chair)

METROLINK REPORT
(The Honorable Art Brown, SCAG Representative)

STAFF REPORT
(John Asuncion, SCAG Staff)

FUTURE AGENDA ITEMS

ANNOUNCEMENT/S

ADJOURNMENT

Southern California Association of Governments
900 Wilshire Boulevard, Suite 1700, Los Angeles, California 90017
August 1, 2019

TRANSPORTATION COMMITTEE
MINUTES OF THE MEETING
THURSDAY, JUNE 6, 2019

THE FOLLOWING MINUTES ARE A SUMMARY OF ACTIONS TAKEN BY THE TRANSPORTATION COMMITTEE. A DIGITAL RECORDING OF THE ACTUAL MEETING IS AVAILABLE FOR LISTENING IN SCAG'S OFFICE.

The Transportation Committee (TC) met at SCAG, 900 Wilshire Blvd., 17th Floor, Los Angeles, CA 90017. The meeting was called to order by Chair Hon. Cheryl Viegas-Walker, El Centro. A quorum was present.

Members Present:

Hon.	Sean Ashton, Downey	District 25
Hon.	Kathryn Barger	Los Angeles County
Hon.	Ben Benoit, Wildomar	South Coast AQMD
Hon.	Will Berg, Port Hueneme	VCOG
Hon.	Russell Betts, Desert Hot Springs	CVAG
Hon.	Drew Boyles	El Segundo
Hon.	Art Brown, Buena Park	District 21
Hon.	Ross Chun, Aliso Viejo	OCTA
Hon.	Emily Gabel-Luddy	AVCJPA
Hon.	James Gazeley, Lomita	District 39
Hon.	Jack Hadjinian, Montebello	SGVCOG
Hon.	Curt Hagman	San Bernardino County
Hon.	Ray Hamada	Bellflower
Hon.	Jan Harnik, Palm Desert	RCTC
Hon.	Mike T. Judge, Simi Valley	VCTC
Hon.	Trish Kelley, Mission Viejo	OCCOG
Hon.	Randon Lane, Murrieta	District 5
Hon.	Clint Lorimore, Eastvale	District 4
Hon.	Steve Manos, Lake Elsinore	District 63
Hon.	Ray Marquez, Chino Hills	District 10
Hon.	Larry McCallon, Highland	SBCTA
Hon.	Marsha McLean, Santa Clarita	District 67
Hon.	Dan Medina, Gardena	District 28
Hon.	L. Dennis Michael	District 9

Hon.	Ara Najarian, Glendale	AVCJPA
Hon.	Frank Navarro, Colton	District 6
Hon.	Charles Puckett, Tustin	District 17
Hon.	Teresa Real Sebastian, Monterey Park	SGVCOG
Hon.	Carlos Rodriguez, Yorba Linda	President's Appointment
Hon.	Tim Sandoval, Pomona	District 38
Hon.	Marty Simonoff, Brea	District 22
Hon.	Karen Spiegel	Riverside County
Hon.	Jess Talamantes **(Vice Chair)**	SFVCOG
Hon.	Steve Tye	District 37
Hon.	Cheryl Viegas-Walker, El Centro **(Chair)**	District 1
Hon.	Don Wagner	Orange County
Hon.	Alan Wapner, Ontario	SBCTA/SBCOG
Hon.	Alicia Weintraub, Calabasas	LVMCOG
Mr.	Paul Marquez, Caltrans District 7	Ex-Officio Member

Members Not Present:

Hon.	Rusty Bailey, Riverside	District 68
Hon.	Austin Bishop, Palmdale	North L.A. County
Hon.	Joe Buscaino, Los Angeles	District 62
Hon.	Jonathan Curtis, La Cañada-Flintridge	District 36
Hon.	Diane Dixon, Newport Beach	OCCOG
Hon.	Lena Gonzalez, Long Beach	District 30
Hon.	Dave Harrington, Aliso Viejo	OCCOG
Hon.	Steven Hofbauer, Palmdale	District 43
Hon.	Jose Huizar, Los Angeles	District 61
Hon.	Paul Krekorian	District 49
Hon.	Linda Krupa, Hemet	WRCOG
Hon.	Brian McDonald	Tribal Government Board
Hon.	Fred Minagar, Laguna Niguel	District 12
Hon.	Carol Moore, Laguna Woods	OCCOG
Hon.	Dwight Robinson, Lake Forest	OCCOG
Hon.	Crystal Ruiz, San Jacinto	WRCOG
Hon.	Ali Saleh, Bell	GCCOG
Hon.	Damon Sandoval	Morongo Band of Mission Indians
Hon.	Thomas Small, Culver City	Culver City
Hon.	Cynthia Sternquist, Temple City	SGVCOG
Hon.	Brent Tercero, Pico Rivera	GCCOG

CALL TO ORDER & PLEDGE OF ALLEGIANCE

Hon. Cheryl Viegas-Walker, Imperial County Transportation Commission, called the meeting to order at 10:03 a.m. Hon. Curt Hagman, San Bernardino County, led the Pledge of Allegiance.

PUBLIC COMMENT

Aaron Klemm, Chief of Energy and Sustainability, California State University Chancellor's Office, requested to comment following the presentation on agenda item 9.

ACTION ITEMS

1. I-105 Corridor Sustainability Study Status Report

Gary Hamrick, Cambridge Systematics, provided an update on the I-105 Corridor Sustainability Study. Mr. Hamrick stated the purpose of the study is to examine multi-modal conditions in the corridor which is an approach that goes beyond traditional freeway planning. He noted additional objectives of the study include improving connectivity between modes, transit, walking and bicycling as well as increasing system efficiency. Also, to reduce vehicles miles travelled and serious and fatal collisions. He noted the project study area is a 3 mile area around all sides of the I-105. Mr. Hamrick reviewed land use patterns and study area demographics and noted the study included significant stakeholder outreach to understand current corridor use.

Mr. Hamrick listed the corridor improvement projects in the study area including active transportation, arterials, goods movement, highway and transit and noted how each would improve mobility and corridor efficiency. He reviewed the total cost of corridor projects examined and noted that the $21 billion total includes currently planned large scale infrastructure and transit projects.

Hon. Larry McCallon, Highland, asked if consideration was given to making a connection between the Green Line and Metrolink. Mr. Hamrick responded that one of the projects involved closing the gap between those rail services.

Hon. Jess Talamantes, Arroyo Verdugo Cities, asked if the I-105 study took into account Metro's Next Gen Study. Mr. Hamrick responded that data and recommendations from the Next Gen Study was used in the I-105 study particularly those for transit and sustainability.

A MOTION was made (Brown) and SECONDED (Hagman) to direct staff to transmit the final report to California Department of Transportation, the Federal Highway Administration and other interested stakeholders. The Motion passed by the following votes:

AYES: Ashton, Barger, Benoit, Berg, Betts, Boyles, Brown, Gabel-Luddy, Gazeley, Hadjinian, Hagman, Hamada, Harnik, Judge, Kelley, Lorimore, Manos, Marquez, McCallon, McLean, Michael, Najarian, Navarro, Puckett, Real Sebastian, Rodriguez, Sandoval, Simonoff, Spiegel, Talamantes, Tye, Viegas-Walker, Wagner, Wapner, Weintraub (35)
NOES: None (0)
ABSTAIN: None (0)

CONSENT CALENDAR

Approval Item

2. Minutes of the April 4, 2019 Meeting

Receive and File

3. Safety Leadership Symposium and Workshop Series
4. ADA Paratransit Demand Forecast
5. Transit Asset Management Target Setting
6. Connect SoCal Technical Methodology and Submittal to California Air Resources Board
7. Local Input Survey Results

A MOTION was made (Navarro) and SECONDED (Ashton) to approve Consent Calendar items 2 - 7. The Motion passed by the following votes:

AYES: Ashton, Barger, Benoit, Berg, Betts, Boyles, Brown, Gabel-Luddy, Gazeley, Hadjinian, Hagman, Hamada, Harnik, Kelley, Lorimore, Manos, Marquez, McCallon, McLean, Michael, Najarian, Navarro, Puckett, Real Sebastian, Rodriguez, Sandoval, Simonoff, Spiegel, Talamantes, Viegas-Walker, Wagner, Wapner, Weintraub (33)
NOES: None (0)
ABSTAIN: Tye (1)

INFORMATION ITEMS

8. Connect SoCal Financial Plan Development Update

Annie Nam, SCAG staff, provided an update on Connect SoCal financial plan development. Ms. Nam stated that the 2020 Regional Transportation Plan/Sustainable Communities Strategy (Connect SoCal) must include a financial plan that estimates how much funding will

be needed to implement recommended improvements and operate and maintain the transportation system over the planning horizon. She noted that 60% of revenue is derived from local sources, 32% from the state and 8% from federal sources. It was further noted 57% of local revenue is generated from sales taxes, 12% from the Transportation Development Act, 9% from farebox revenue and 10% from other local sources. Ms. Nam stated that total revenue for Connect SoCal is approximately $506 billion which includes local, state and federal revenue sources through 2045. She stated next steps include refinement of project cost and revenue forecast and noted the committee will be provided additional financial plan updates as development of the 2020 RTP/SCS continues.

Hon. Curt Hagman, San Bernardino County, asked that the financial plan development consider identifying opportunities for project cost savings so committee members may consider a response such as seeking regulatory relief to facilitate those cost savings. Ms. Nam responded that project cost savings will be examined and brought forth.

Hon. Alan Wapner, Ontario, stated that county revenues traditionally only cover capital expenses and asked if operation and maintenance costs are considered in the development of the financial plan. Ms. Nam responded that SB 1 addresses a significant portion of operation and maintenance costs and a breakdown of lifecycle costs will be presented to the committee in the next iteration of the financial plan.

9. SCAG Transportation Demand Management Strategic Plan Update

Steve Fox, SCAG staff, provided an update on the Transportation Demand Management (TDM) Strategic Plan. Mr. Fox stated that TDM is a set of strategies aimed at reducing the demand for roadway travel particularly in single occupancy vehicles. He noted that TDM investments reduce congestion and shift trips to other modes while costing significantly less than roadway or transit capital expansion projects. TDM strategies include carpooling, vanpooling, telecommuting as well as new technology such as transportation network companies (TNCs), carshare, bikeshare and multi-modal trip planning smart phone applications. Mr. Fox noted important strategic goals include assessing the current state of TDM planning and understanding the impact and opportunities from new mobility and technology innovations as well as develop performance measures to evaluate the effectiveness of corridor level, local and regional TDM strategies.

Mr. Fox noted draft recommendations include creating a dedicated web page to share the TDM Strategic Plan deliverables such as the updated TDM toolbox and to convene periodic trainings sessions throughout the region. Also, establish a TDM regional data clearinghouse and formalize performance metrics and facilitate data collection and reporting. He noted next steps include further incorporating comments received on the draft recommendations into the draft TDM strategic plan.

Hon. Cheryl Viegas-Walker, El Centro, stated that the region is a significant tourist destination and a greater effort can be made to assist visitors in getting around the region using transit and other options so they are not restricted to renting a vehicle. Mr. Fox responded that some of the strategies in the updated toolbox will address that need. Additionally, one study activity is to address 10 congested corridors including the intersection of I-10 and I-110, an important corridor for the upcoming 2028 Olympics.

Hon. Alan Wapner, Ontario, expressed concern that TNCs such as Uber and Lyft are considered as TDM strategies as there is evidence that they increase vehicle miles travelled. Mr. Fox responded that TNCs are thought to be an alternative to single occupancy vehicle driving but there is evidence that TNCs increase roadway travel particularly when driving on the roadways waiting for their next trip.

Aaron, Klemm, Chief of Energy and Sustainability, California State University Chancellor's Office, commented that California state universities are major employment and student destinations throughout the state and they are seeking to partner with SCAG on traffic demand issues and to be a member of the technical advisory committee.

10. The Future of the Workplace: Regional Summary and Travel Impacts

Michele Bina, Cambridge Systematics, reported on the Future of the Workplace and telecommuting study. Ms. Bina stated that new technology and work concepts have emerged which can affect transportation planning. She noted the working trends examined include teleworkers, or those who work from a fixed office space but telecommute once per week and home workers who work only at home. She reviewed total teleworkers for each county in the SCAG region and the total days telecommuting noting that those who telework tend to be higher income earners. Ms. Bina further noted that there is an increasing trend in coworking spaces or short-term shared office space. These are commonly used by younger workers often in information technology and consulting. She noted that 40% of those surveyed indicate that their coworking offices are closer to home and involve less daily travel.

Ms. Bina next reviewed the emergence of "Gig Economy" workers or those workers who are independent contractors, seasonal, temporary or on-call contract workers. She reviewed job sectors that may be affected by automation in the future noting that business and finance specialist sectors face the least likelihood of automation while those in the farming production sectors could experience a greater level of automation.

Hon. Tim Sandoval, Pomona, asked if there has been an examination of the link between

workforce automation and the increase in homelessness. Ms. Bina responded that it is worth investigating as some industry sectors have seen considerable displacement through automation.

CHAIR'S REPORT

Hon. Cheryl Viegas-Walker, El Centro, announced that an employee wellness program is underway and committee members Hon. Alan Wapner and Hon. Randon Lane will serve as team leaders. Committee members interested in participating can contact one of the committee team leaders.

METROLINK REPORT

Hon. Art Brown, Buena Park, reported that Metrolink saw a slight 0.8 percent growth in ridership during January. February ridership decreased 1.1 percent but March increased 1.8 percent. He noted the LINK US project has completed CEQA environmental review and is progressing toward the design phase. This effort includes the L.A. Union Station run-through tracks. Additionally, Metrolink offered free rides on Monday, April 22, 2019 to promote Earth Day. This produced an overall ridership increase of 40% over a normal weekday. Also, with the April schedule change, Metrolink introduced an additional late night round trip from San Bernardino to Union Station.

STAFF REPORT

John Asuncion, SCAG staff, announced that SCAG's 30th Annual Demographic Workshop will take place Tuesday June, 11, 2019 at USC and registration remains open.

ADJOURNMENT

Chair Cheryl Viegas-Walker, El Centro, adjourned the meeting at 11:39 a.m.

[MINUTES ARE UNOFFICIAL UNTIL APPROVED BY THE TRANSPORTATION COMMITTEE]

TC

2019															
MEMBERS	CITY	Representing	JAN (dark)	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	Total Mtgs Attended To Date
Ashton, Sean	Downey	District 25		1	1	1		1							4
Bailey, Rusty	Riverside	WRCOG			1	1									2
Barger, Kathryn	Los Angeles County	Los Angeles County		1		1		1							3
Benoit, Ben	Wildomar	South Coast AQMD			1	1		1							3
Berg, Will	Port Hueneme	VCOG		1		1		1							3
Betts, Russell	Desert Hot Springs	CVAG		1	1	1		1							4
Bishop, Austin	Palmdale	North L.A.													0
Boyles, Drew	El Segundo	El Segundo		1	1			1							3
Brown, Art	Buena Park	District 21		1	1	1		1							4
Buscaino, Joe	Los Angeles	District 62													0
Chun, Ross	Aliso Viejo	OCTA		1	1			1							3
Curtis, Jonathan	La Cañada Flintridge	District 36		1	1	1									3
Dixon, Diane	Newport Beach	OCCOG													0
Gabel-Luddy, Emily	Burbank	AVCJPA		1	1	1		1							4
Gazeley, James	Lomita	District 39		1	1	1		1							4
Gonzalez, Lena	Long Beach	District 30													0
Hadjinian, Jack	Montebello	SGVCOG		1	1	1		1							4
Hagman, Curt	San Bernardino Cnty	San Bernardino Cnty		1		1		1							3
Hamada, Ray	Bellflower	Bellflower				1		1							2
Harnik, Jan	Palm Desert	RCTC			1	1		1							3
Harrington, Dave	Aliso Viejo	OCCOG													0
Hofbauer, Steven	Palmdale	District 43		1	1										2
Huizar, Jose	City of Los Angeles	District 61													0
Judge, Mike	Simi Valley	VCTC		1	1	1		1							4
Kelley, Trish	Mission Viejo	OCCOG		1	1	1		1							4
Krekorian, Paul	Public Transit Rep	District 49													0
Krupa, Linda	Hemet	WRCOG			1										1
Lane, Randon	Murrieta	District 5		1	1			1							3
Lorimore, Clint	Eastvale	District 4		1	1			1							3
Manos, Steve	Lake Elsinore	District 63		1	1	1		1							4
Marquez, Paul	Caltrans District 7	Ex-Officio		1	1	1		1							4
Marquez, Ray	Chino Hills	District 10		1	1	1		1							4
McCallon, Larry	Highland	SBCTA		1	1	1		1							4
McDonald, Brian	Tribal Gov't Board	Tribal Gov't Board													0
McLean, Marsha	No. L.A. County	District 67		1	1	1		1							4
Medina, Dan	Gardena	District 28		1	1	1		1							4
Michael, L. Dennis	Rancho Cucamonga	District 9			1			1							2
Minagar, Fred	Laguna Niguel	District 12		1	1	1									3
Moore, Carol	Laguna Woods	OCCOG		1	1	1									3
Najarian, Ara	Glendale	AVCJPA		1	1			1							3
Navarro, Frank	Colton	District 6			1	1		1							3
Puckett, Charles	Tustin	District 17		1	1			1							3
Real Sebastian, Teresa	Monterey Park	SGVCOG		1	1	1		1							4
Robinson, Dwight	Lake Forest	OCCOG													0
Rodriguez, Carlos	Yorba Linda	President's Appt		1	1	1		1							4
Ruiz, Crystal	San Jacinto	WRCOG		1		1									2
Saleh, Ali	City of Bell	GCCOG		1	1	1									3
Sandoval, Damon	Morongo Mission Indians	Morongo Mission Indians													0
Sandoval, Tim	Pomona	District 38		1		1		1							3
Simonoff, Marty	Brea	District 22			1	1		1							3
Small, Thomas	Culver City	Culver City			1	1									2
Spiegel, Karen	Riverside County	Riverside County			1	1		1							3
Sternquist, Cynthia	Temple City	SGVCOG		1		1									2
Talamantes, Jess	Burbank	SFVCOG		1	1	1		1							4
Tercero, Brent	Pico Rivera	GCCOG		1	1										2
Tye, Steve	Diamond Bar	District 37						1							1
Viegas-Walker, Cheryl	El Centro	District 1		1		1		1							3
Wagner, Don	Orange County	Orange County						1							1
Wapner, Alan	Ontario	SBCTA		1	1	1		1							4
Weintraub, Alicia	Calabasas	LVMCOG		1				1							2

Attachment: TC Attendance (Minutes of TC Meeting, June 6, 2019)

REPORT

Southern California Association of Governments
900 Wilshire Boulevard, Suite 1700, Los Angeles, California 90017
August 1, 2019

To: Community
Economic & Human Development Committee (CEHD)
Energy & Environment Committee (EEC)
Transportation Committee (TC)
Regional Council (RC)

From: Grieg Asher, Program Manager I, Sustainability, (213) 236-1869, asher@scag.ca.gov

Subject: Green Region Initiative - Sustainability Map Update

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

RECOMMENDED ACTION FOR RC:
For Information Only – No Action Required

RECOMMENDED ACTION FOR CEHD, EEC AND TC:
Receive and File

STRATEGIC PLAN:
This item supports the following Strategic Plan Goal 2: Advance Southern California's policy interests and planning priorities through regional, statewide, and national engagement and advocacy.

EXECUTIVE SUMMARY:
The CivicSpark program is a statewide Governor's Initiative AmeriCorps program administered by the State of California's Office of Planning and Research and the Local Government Commission (LGC). SCAG is a regional partner and beneficiary of the CivicSpark program and has hosted CivicSpark Fellows working in the Sustainability Department for the past five (5) years. SCAG's 2018-19 CivicSpark Fellows—April Crain, Guadalupe Franco, and Elisa Barrios—have prepared an update on the SCAG Green Region Initiative (GRI) map. The goal of GRI is to illustrate the status and progress of the region across 28 sustainability indicators.

BACKGROUND:
To enhance the development of the existing Green Region Initiative Sustainability Indicators project, SCAG partnered with the Local Government Commission (LGC) to host three CivicSpark Fellows. The project provides a visual resource of sustainability progress across the 191 cities and six counties within the SCAG region in both policy and performance. The policies and performance mapped for this project help identify existing best practices across 28 sustainability indicators.

The CivicSpark program is a statewide Governor's Initiative AmeriCorps program administered by the State of California's Office of Planning and Research and the LGC. The program places 90 Fellows in local governments around the state to help build local capacity around climate, housing, water and resiliency issues. SCAG is a regional partner and beneficiary of the CivicSpark program and has hosted CivicSpark Fellows in the Sustainability Department for the past five years.

This year's CivicSpark Fellows have continued work on the GRI Sustainability Indicators project, which charts and maps progress across 28 sustainability topics in every city and county in the SCAG region. The final deliverables of the 2018-19 CivicSpark program year are 11 updated maps, which create a polished and enhanced GRI v 3.6, individual GIS shapefiles to be accessed via SCAG's Open Data Portal, as well as simplified regional sustainability statistics through utilization of the GRI data. Overall, the GRI provides a resource for SCAG staff, local governments, and the public to explore best practices in the region, facilitate collaboration, and advance sustainability and resiliency planning in Southern California.

This project supports the 2020 RTP/SCS land use strategy to support local sustainability planning, highlighting best practices around the region and serving as a resource for other cities to replicate existing projects and tailor them to suit their unique needs.

SCAG's partnership with CivicSpark will continue through the next 2019-20 program year. The CivicSpark Fellows will continue collecting data on sustainability progress across the SCAG region. The Fellows will also conduct outreach from stakeholders on the map's functionality, purpose, and the indicators as a whole. They will then use this feedback to further refine and update the map. Finally, the Fellows will help organize webinars and meetings to provide technical assistance for local governments on sustainability best practices in the region.

FISCAL IMPACT:
The CivicSpark program is funded jointly by the LGC, and SCAG in its FY 19-20 Overall Work Program (065.137.10).

ATTACHMENT(S):
1. PowerPoint Presentation - CivicSpark

CivicSpark 2018-19 Climate Fellows

Elisa Barrios, April Crain, and Lupe Franco

Agenda

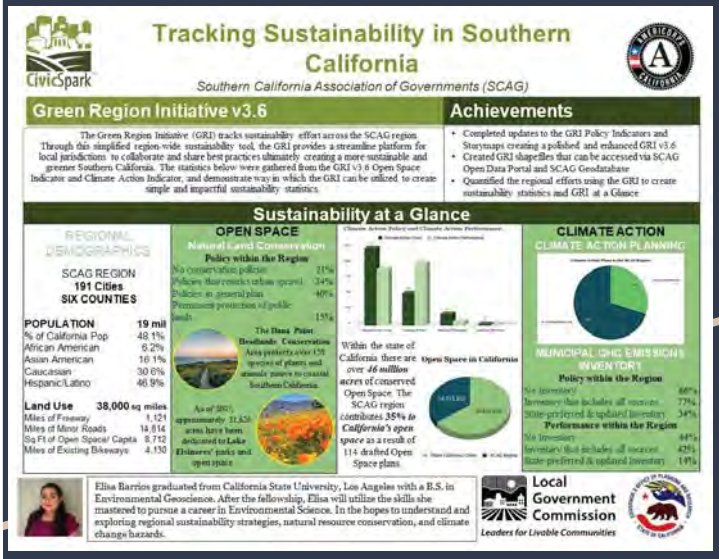
- SCAG and Civicspark
- Green Region Initiative
- Regional Climate Adaptation Framework
- Go Human
- CivicSpark Projects
- Next Steps

CivicSpark and SCAG

- To enhance the development of the existing Green Region Initiative (GRI) Sustainability Indicators project, SCAG partnered with the Local Government Commission (LGC) to host three CivicSpark Fellows.
- The project provides a visual resource of sustainability progress across the 191 cities and six counties within the SCAG region in both policy and performance.
- The policies and performance mapped for this project help identify existing best practices across 28 sustainability indicators.

- The CivicSpark program is a statewide Governor's Initiative AmeriCorps program administered by the State of California's Office of Planning and Research and the Local Government Commission (LGC).
- SCAG is a regional partner and beneficiary of the CivicSpark program and has hosted CivicSpark Fellows working in the Sustainability Department for the past five (5) years.

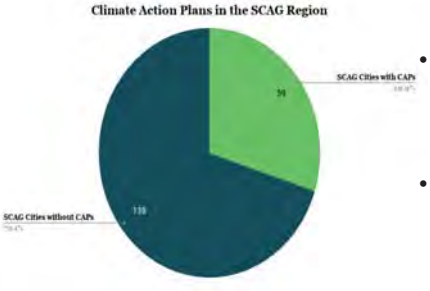
Green Region Initiative



scaggreenregion@scag.ca.gov

Green Region Initiative v3.6

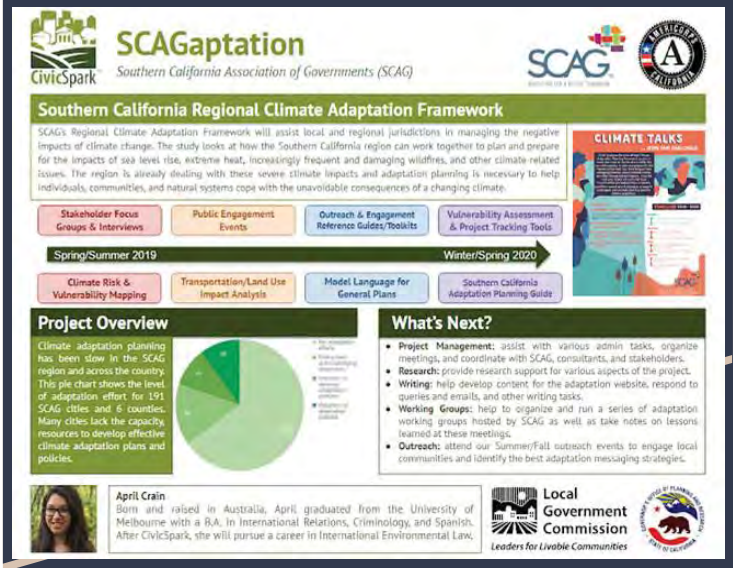
The Green Region Initiative (GRI) tracks sustainability effort across the SCAG region. Through this simplified region-wide sustainability tool, th GRI provides a streamline platform for local jurisdictions to collaborate a share best practices ultimately creating a more sustainable Southern California.



Achievements

- Completed updates to the GRI Policy Indicators and Storymap creating a polished and enhanc GRI v3.6
- Created GRI shapefiles that ca be accessed via SCAG Open Data Portal and SCAG Geodatabase
- Quantified the regional efforts using the GRI to create sustainability statistics and GR at a Glance

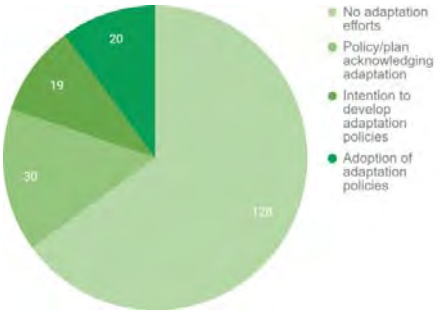
Climate Adaptation



Sustainability website: sustain.scag.ca.gov
Adaptation email: adaptation@scag.ca.gov

Regional Climate Adaptation Framework

- Adaptation and resilience planning efforts in the region and across the country have been slow.
- Of the 191 cities and 6 counties in the SCAG region, only 20 have adopted adaptation plans/policies, whereas 128 have made little to no adaptation planning efforts.
- SCAG's Regional Climate Adaptation Framework will build a roadmap, offer support, and provide useable data and projections for our member cities to start planning for climat adaptation.
- This is absolutely vital to developing geographic, social, and economic resilience in the region.



Working with Active Transportation

Go Human

- Go Human is the Active Transportation and Special Programs Departments campaign.
- Created with the goal of promoting pedestrian and bicyclist safety and a more active mode of transportation.
- The Fellows volunteered in two Go Human events: COAST Santa Monica and LA CoMotion.

Civicspark Projects

Volunteer Engagement

Service

Trainings

Next Steps

Lupe Franco

Attend San Jose State University in the Fall for Environmental Studies with a focus on Environmental Justice and Climate Research.

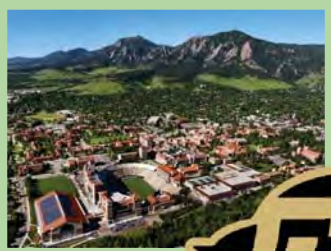
Elisa Barrios

Looking to continue my environmental career in a position that combines my passion for conservation and sustainability.

Attending a masters program in GIS and/or environmental science

April Crain

Attending the University of Colorado at Boulder Law School focusing on International Environmental Law.



Southern California Association of Governments
900 Wilshire Boulevard, Suite 1700, Los Angeles, California 90017
August 1, 2019

To: Energy & Environment Committee (EEC)
Transportation Committee (TC)

EXECUTIVE DIRECTOR'S APPROVAL

From: Jason Greenspan, Manager of Sustainability, Planning Division, 213-236-1859, greenspan@scag.ca.gov

Subject: Caltrans District Vulnerability Assessments

RECOMMENDED ACTION FOR EEC:
For Information Only – No Action Required

RECOMMENDED ACTION FOR TC:
Receive and File

STRATEGIC PLAN:
This item supports the following Strategic Plan Goal 2: Advance Southern California's policy interests and planning priorities through regional, statewide, and national engagement and advocacy.

EXECUTIVE SUMMARY:
Caltrans is in the process of preparing reports on the vulnerability of the state highway system to the effects of climate change. The intention of the these vulnerability assessment reports is to provide data to support the discussion about how climate change impacts the way the state highway system is planned, designed, built, operated and maintained. The vulnerability assessment reports for twelve districts throughout California will ultimately evaluate which state highways are most vulnerable to flooding and other damage, assess possible consequences, and evaluate methods for deciding how to prioritize action. Representatives from Caltrans will provide a broad overview of the statewide goal, purpose and process of developing vulnerability assessment reports.

BACKGROUND:
In an effort to address Climate Change for both mitigation and adaptation purposes, Caltrans is taking steps to fully integrate climate change into transportation investment decision making, from planning to project development, operations and maintenance. Caltrans' objective is to make the state highway system more resilient, sustainable, and adaptable to climate-spurred events and extreme weather. To identify where the state highway system is most vulnerable to the impacts of climate change and extreme events, Caltrans is conducting vulnerability assessments throughout the state at the district level using five climate stressors: sea level rise, storm surge, changes in

precipitation, changes in temperature, and increased wildfires. Although the vulnerability assessment reports neither propose specific projects nor discuss costs, they use the best science currently available on potential temperature changes and sea level rise to assess the various types of risks the state will need to prepare for in the future. District vulnerability assessment reports will project future climate scenarios, quantify and map impacts of climate change stressors, and identify transportation assets as risk.

Three vulnerability assessments have been completed thus far for the Oakland/San Francisco, Fresno and Redding Caltrans districts. Vulnerability assessments for Los Angeles, San Bernardino and San Diego are pending release this fall, with six additional districts next in line, including Orange County.

FISCAL IMPACT:
None.

ATTACHMENT(S):
1. PowerPoint Presentation - Caltrans District Vulnerability Assessments

TOWARD A CLIMATE RESILIENT STATE TRANSPORTATION DEPARTMENT

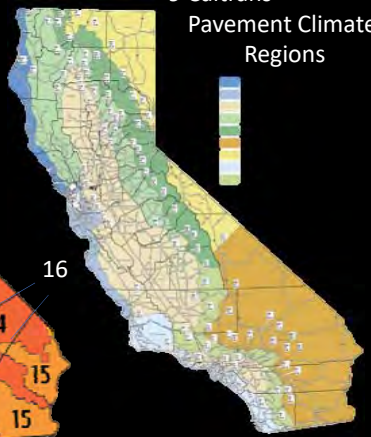
Reza Navai, Ph.D, AICP
Assistant Division Chief
Transportation Planning
California Department of Transportation

Southern California Association of Governments
Energy and Environmental Committee
August 1, 2019

California's Diverse Landscape and Climate Zones

- Diverse Local climates from temperate rainforests in the North to arid deserts in the South
- Within 80 miles of one another lie the highest and lowest points in the lower 48 states. Mount Whitney at 14,495 ft. and Death Valley at -282 ft.

9 Caltrans Pavement Climate Regions



Climate Change Impacts to Transportation Infrastructure








Severe Storms and Emergency Repairs State Highway Network


R-91 rock slide


Big Sur Rock Slide

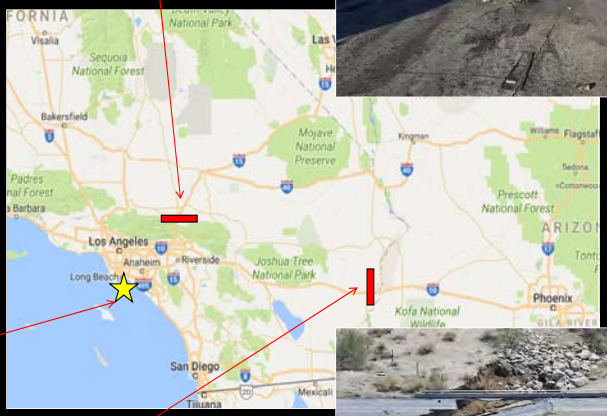
Over $250 Million Storm Damage in Caltrans District 4 (2017)

Attachment: PowerPoint Presentation - Caltrans District Vulnerability Assessments (Caltrans District Vulnerability Assessments)

Impact on Regional & Interstate Network

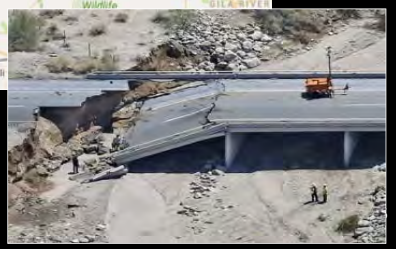
- **A facility can be affected even if it is not directly exposed to a climate stressor**
- **In the summer of 2015, 2 separate incidents shut down the main truck routes between the ports and rest of the U.S.**

I-15 Cajon Pass Fire
(July 2015)

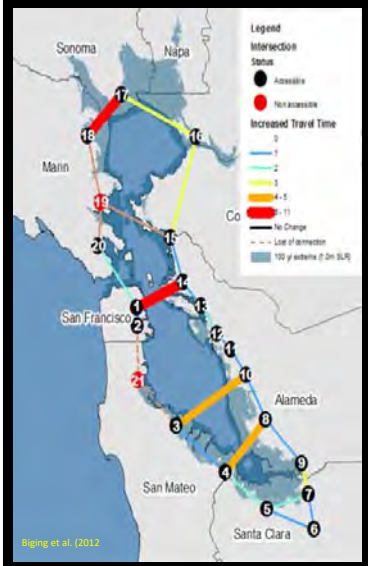


Ports of Los Angeles
& Long Beach

I-10 flooding & bridge
collapse
(July-Sept 2015)



Increase Travel Time in Bay Area



Ports at Risk

Coastal Properties at Ris

California's 4th Climate Change Assessment 2018

Pathway to Resiliency

What Are We Doing ?

Vulnerability Assessments

- Project climate Impacts on state highways and transportation assets
- Develop GIS Map and Data base
- Local and Regional partnership

Climate Adaptation Strategies

- Prioritize assets at risk
- Develop adaptation strategies
- Integrate into Caltrans business practices
- Develop Standards for planning, design, and project programming

Adaptation Based on Historical Data (Reactive Adaptation)

- **Adapting to Recurring Events or where Impact is already Visible**
- **Data is available and Collected Overtime**
- **No – Regrets Adaptation Actions**

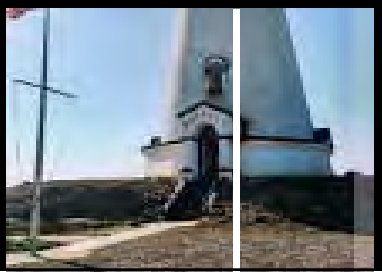
Rock slope protection along 101

Major erosion event along 101, in need of repair

Seawall protecting HWY 1 in Malibu (District 7)

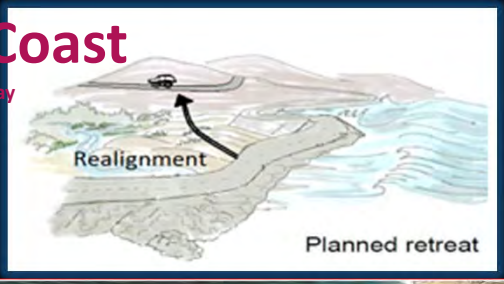
Storm Surge - Piedras Blancas, Highway 1, San Luis Obispo

Realignment - Piedras Blancas



Devil's Slide Coast

Pacifica and Half Moon Bay



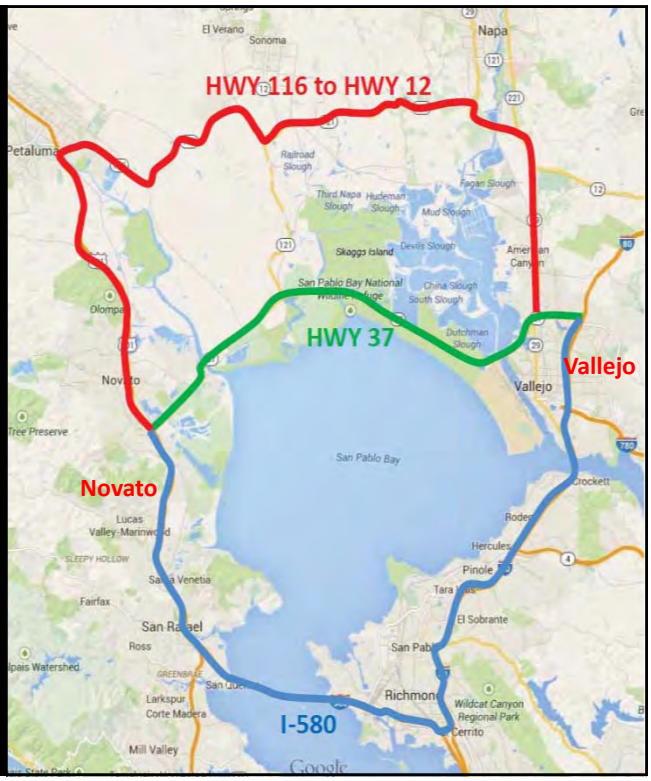

• The largest track of tidal salt marsh in CA outside of SF Bay
Elkhorn Slough Sea Level Rise Adaptation Efforts
Pacific Coast Highway, Monterey County
Adapt


State Route 37 Adaptation Efforts
Daily high tide mark
Streams
State Highway
State Highway 37
County Boundary
Estuarine and Marine Wetland
Freshwater Emergent Wetland
101
116
121
29
221
12
37

SR 37 Alternative Routes Betweenl-80 and 101

- SR 37 Corridor is 21 miles
- Northern Rte (Hwy 12 to Hwy 116) = 44 miles
- Southern Rte (Richmond Bridge –580) = 43 miles

- SR-37 closure would have severe impact to I-80, SR 101 and sub corridors



The Weakest Link …

San Pablo Bay National Wildlife Refuge

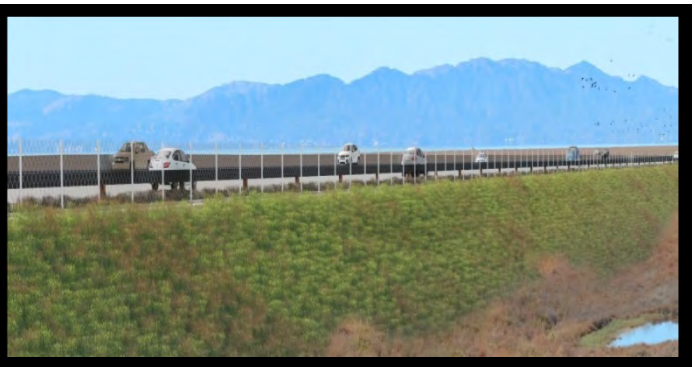
Novato Creek

Mare Island Bridge

Attachment: PowerPoint Presentation - Caltrans District Vulnerability Assessments (Caltrans District Vulnerability Assessments)

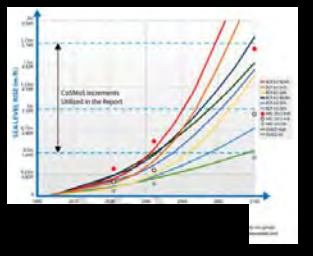
Adaptive Structural Scenarios Considered

- Berm/Embankment
- Box Girder Causeway (over land)
- Bridge/causeway (over land-water)



Adapting to Future Conditions – Raising the Bar (Proactive Adaptation)

- Challenges:
  - ➢ Risk-Based – Planning/Design with Uncertainty
  - ➢ Better Data – Narrowing Uncertainty
  - ➢ Training – Adaptive Design & Natural Infrastructure
  - ➢ Complex Models - Projections vs. Historical Data
    - ➢Global Climate Models (GCMs) i.e., IPCC
    - ➢Probabilistic/Scenario-Based projections i.e., RCPs
    - ➢Applied Models i.e., CoSMoS (storm model)



Toward Resiliency in Transportation System

Vulnerability Assessments by Regions

- Project future climate scenarios (2050, 2070, 2100)
- Quantify and map impacts of climate stressors
- Identify assets at risk (roads, bridges, culverts, etc.)

Climate Change Stressors Studied


Sea Level Rise


Storm Surge


Precipitation

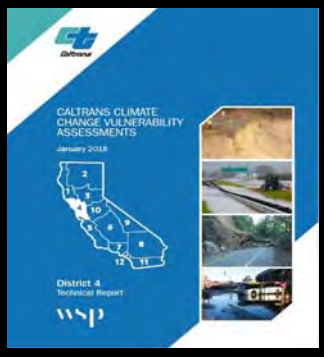

High Temperatures


Wildfires

All 12 Caltrans Districts Will Receive:

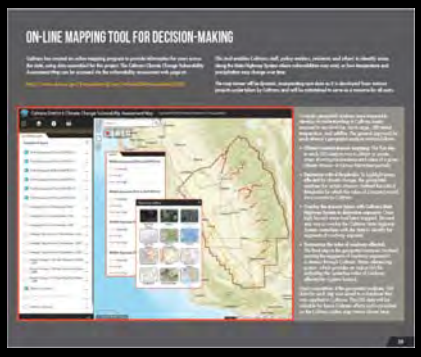
Summary Report

- Overview of the natural environment and transportation infrastructure
- Description of the interaction of the transportation system and identified stressors



Technical Report

- Background on data used to develop reports
- Vulnerability assessment methodology

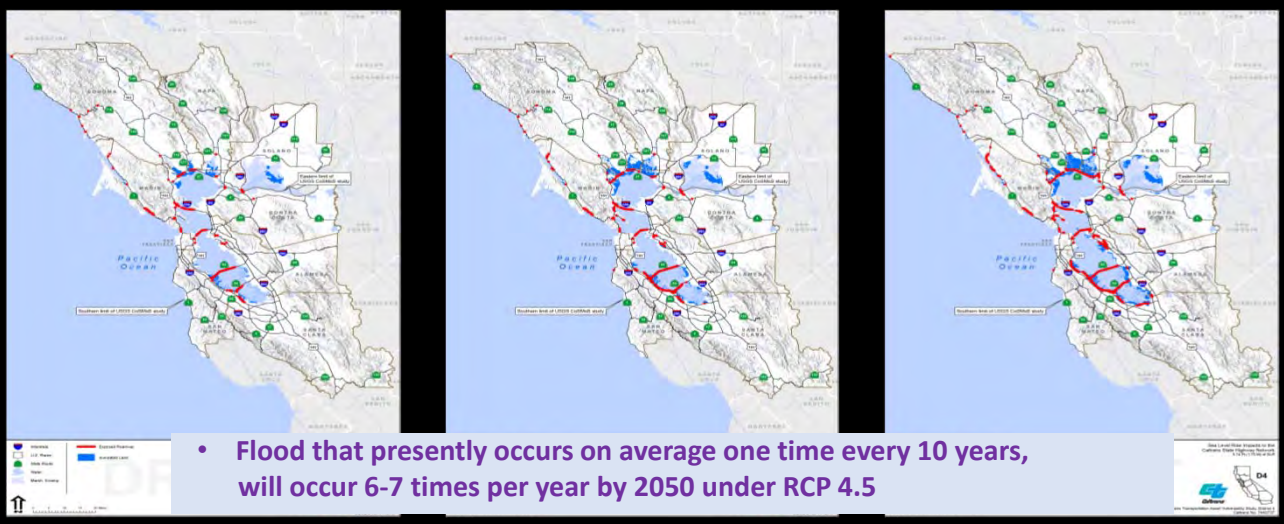


On-line viewer Tool

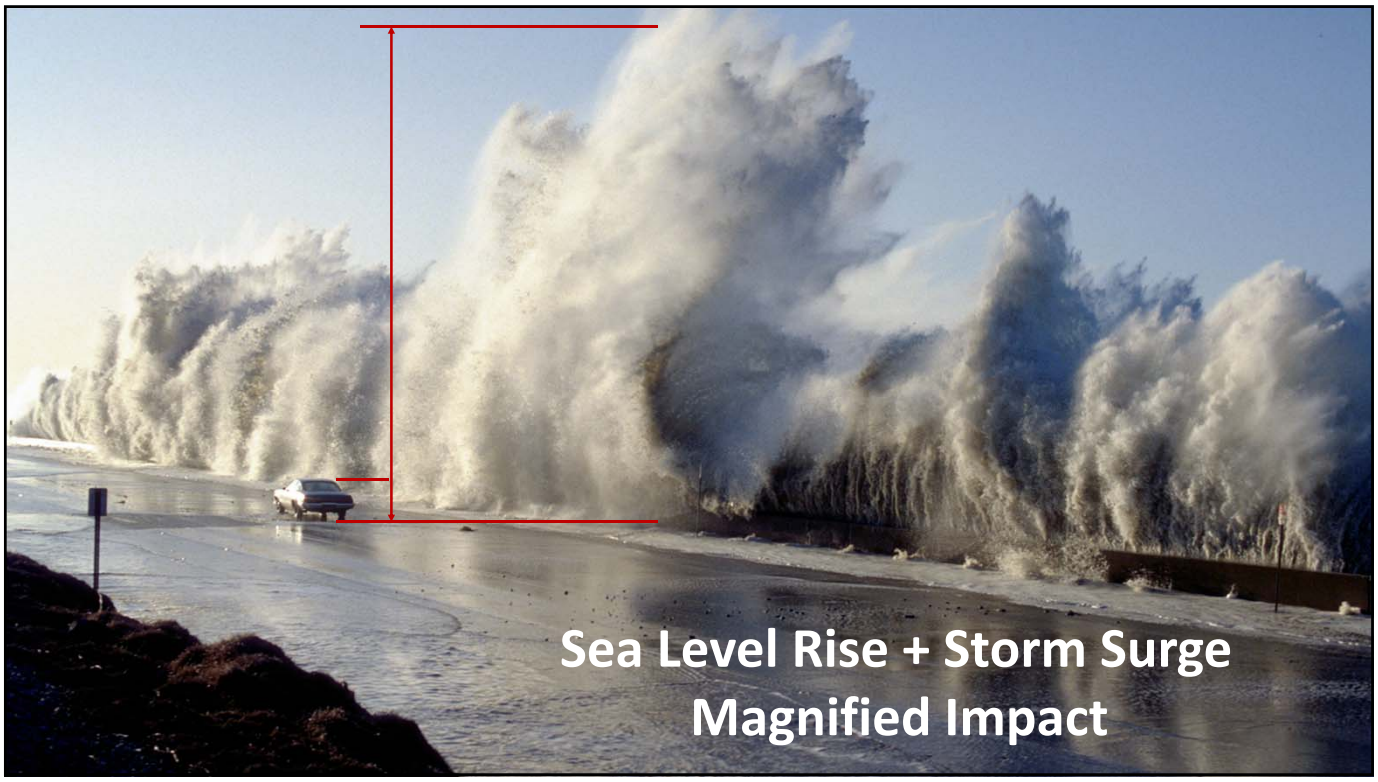
- Posted online, the tool allows users to toggle stressors on and off to visualize locations of the stressors

Sea Level Rise Impacts under the High Emission Scenario
Caltrans District 4 – Bay Area

2050	2070	2100
0.5 M (20 in) Sea Level Rise	1.0 M (39 in) Sea Level Rise	1.75 M (69 in) Sea Level Rise



- Flood that presently occurs on average one time every 10 years, will occur 6-7 times per year by 2050 under RCP 4.5

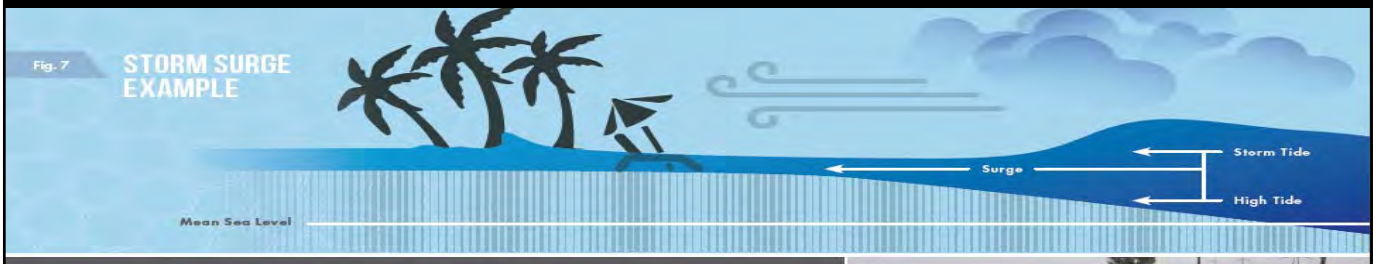


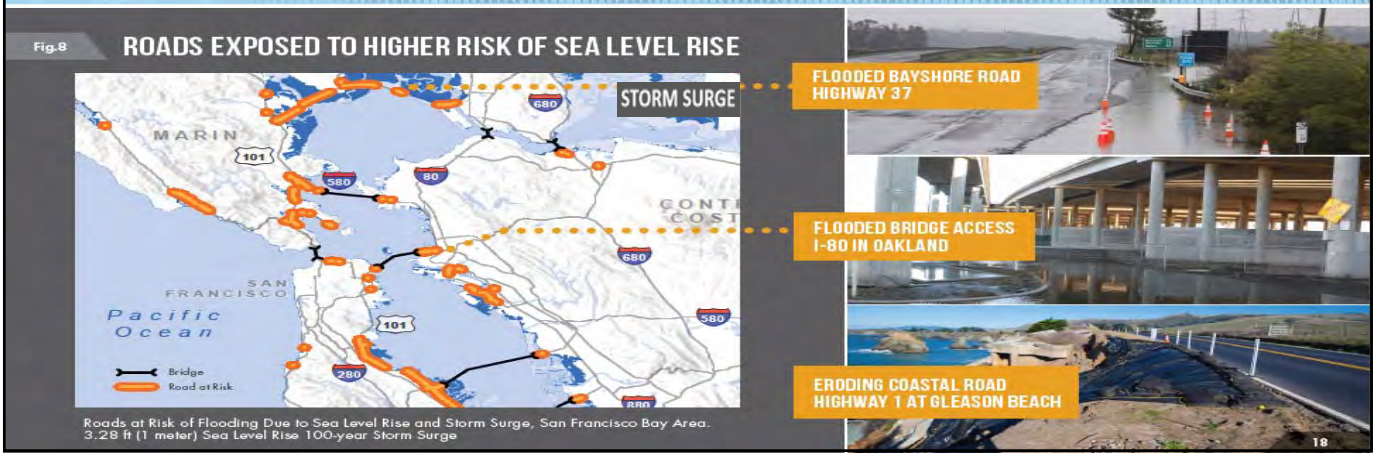
Sea Level Rise with Storm Surge

110 MILES OF ROADWAYS AND BRIDGES IN DISTRICT 4 ARE EXPOSED TO STORM SURGE BY THE END OF THE CENTURY, WITH 30 OF THOSE MILES IN SAN MATEO COUNTY

County	Estimated Sea Level Rise with Storm Surge			Miles of State Highway Exposed
	0.5 meter (1.64 ft) 2048 - 2100	1.0 meter (3.28 ft) 2064 - 2100	1.75 meter (5.74 ft) 2081 - 2100	
Alameda	5.6	10.0	25.3	
Contra Costa	2.3	2.3	4.4	
Marin	10.6	13.5	19.5	
Napa	0.1	0.1	0.4	
Santa Clara	2.3	4.3	5.4	
San Francisco	5.1	5.1	6.7	
San Mateo	15.9	25.7	30.4	
Solano	2.6	2.9	11.7	
Sonoma	4.7	5.0	6.4	

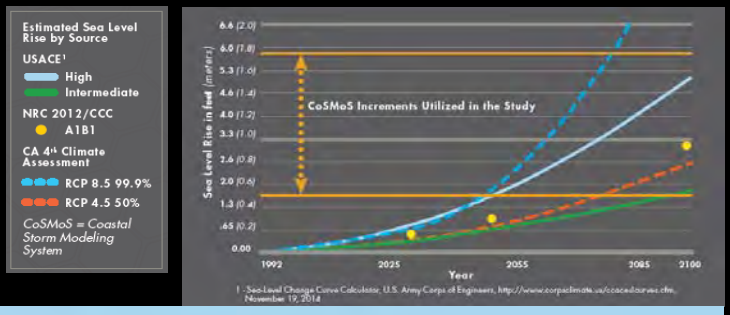
Sea Level Rise with Storm Surge

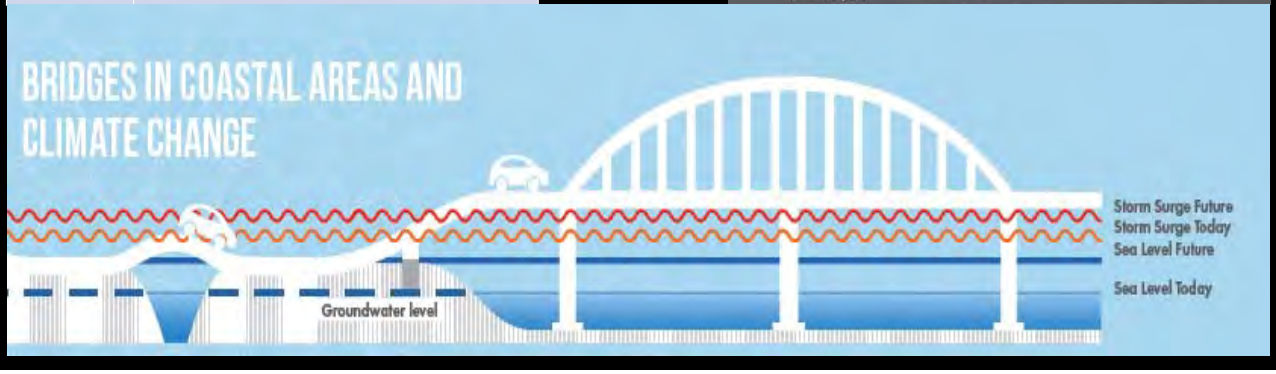




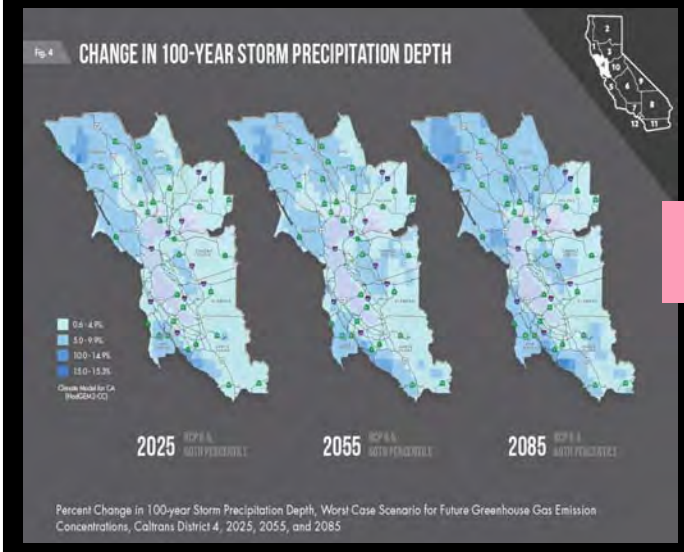
Projected Sea Level Rise and Impacts Bridge Exposure

Climate Impact	Potential Transportation Impact
Sea Level Rise	• Roadway washout • Flooding of roadways • Disruption of transit services • Bridge Scour • Railway flooding • Damage to roadway substructure • Route closure • Travel Delays • Increased need for emergency response services





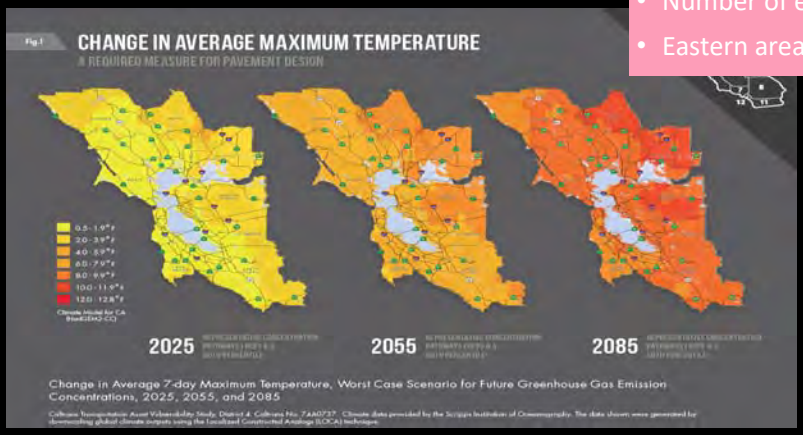
Heavier Precipitation



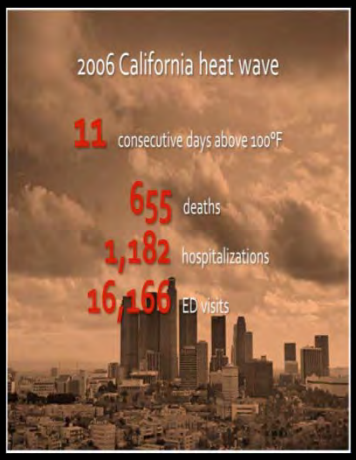
100 Year Rainfall depth is expected to increase up to 15 Percent

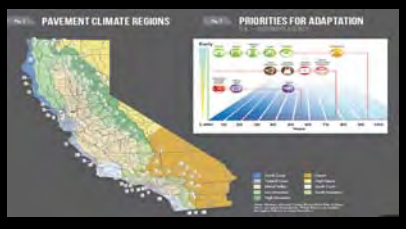
- **Rainstorms are expected to be less frequent, but stronger when they occur**

Temperatures Rising

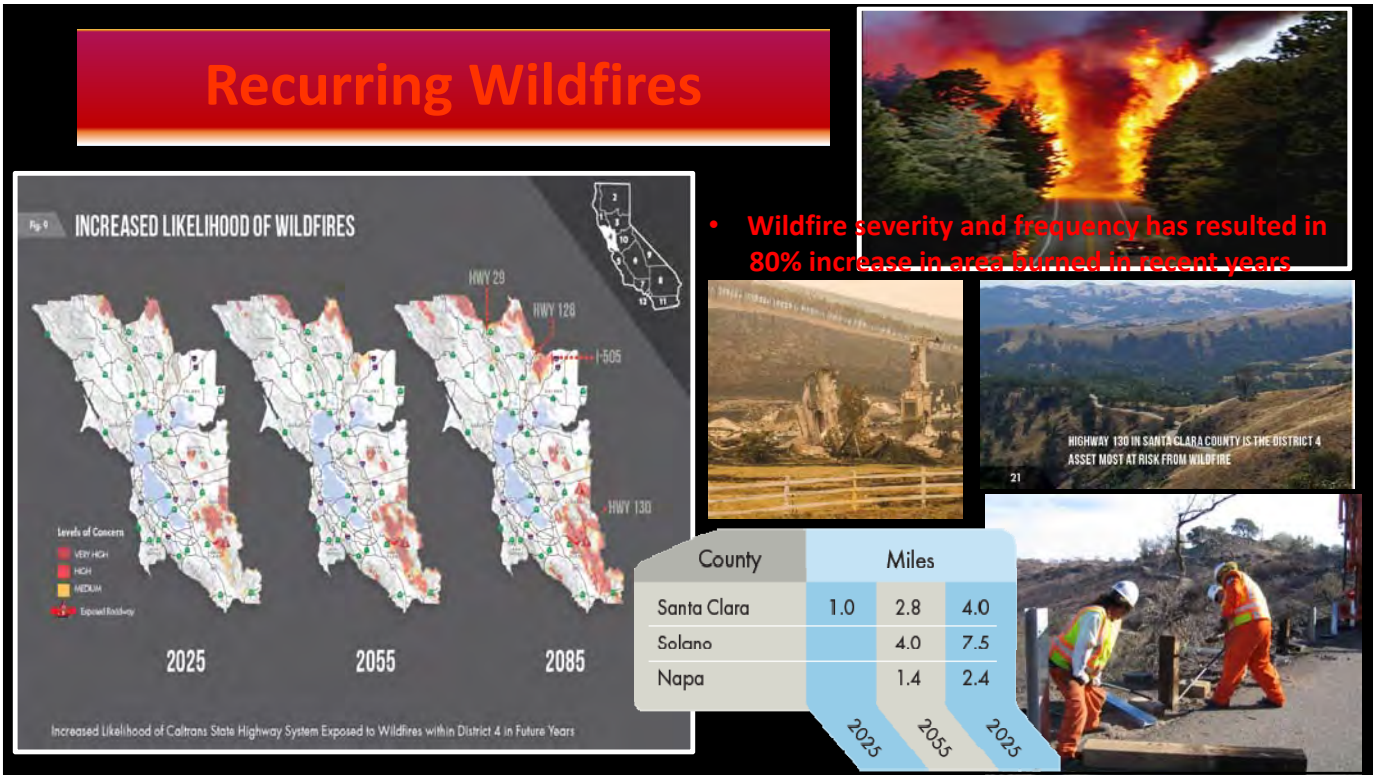


- Number of extremely hot days projected to increase.
- Eastern areas show greatest increase






POCKET FIRES
TUBBS FIRE
NUNS FIRE
ATLAS FIRE
NAPA
SANTA ROSA
SOLANO
MARIN
WILFIRE
• 2017-18 - one of the most destructive years in CA
• 42 miles of State highway network impacted


Recurring Wildfires
INCREASED LIKELIHOOD OF WILDFIRES
HWY 29
HWY 128
I-505
HWY 130
2025
2055
2085
Increased Likelihood of Caltrans State Highway System Exposed to Wildfires within District 4 in Future Years
• Wildfire severity and frequency has resulted in 80% increase in area burned in recent years
HIGHWAY 130 IN SANTA CLARA COUNTY IS THE DISTRICT 4 ASSET MOST AT RISK FROM WILDFIRE
21
County
Miles
Santa Clara 1.0 2.8 4.0
Solano 4.0 7.5
Napa 1.4 2.4
2025
2055
2025

Asset-level assessments

- Identify Localized Exposure
- Develop Facility Management Plans'
- Local Coordination
- Develop complementary practices

ON-LINE INTERACTIVE MAPPING TOOL FOR DECISION-MAKING

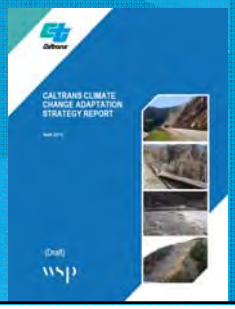
Climate Adaptation Strategy

Recommending adaptation strategies for integration into transportation investment decisions

Climate Adaptation Strategy Report

Develop adaptation strategies guide

- Best Practices
- How to mainstream adaptation into planning, programming, project development, maintenance and operations



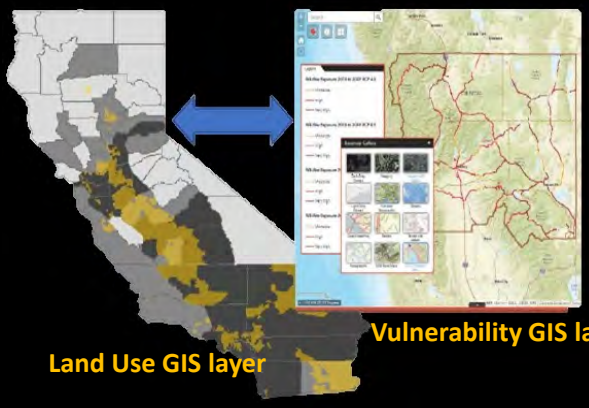
District Adaptation Reports

Evaluate at-risk assets, prioritize, and design project alternatives within districts

Climate Change is an Equity Issue

- Inter-generational Equity
- Interaregional Equity

San Jose, California, after rising floodwaters.
CBS News, Feb. 2017



REPORT

Southern California Association of Governments
900 Wilshire Boulevard, Suite 1700, Los Angeles, California 90017
August 1, 2019

To: Transportation Committee (TC)

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

From: Hiroshi Ishikawa, Associate Regional Planner, Aviation Department, (213) 236-1838, ishikawa@scag.ca.gov

Subject: Aviation Program Update: Regional Air Passenger and Cargo Forecast

RECOMMENDED ACTION:
For Information Only - No Action Required

STRATEGIC PLAN:
This item supports the following Strategic Plan Goal 1: Produce innovative solutions that improve the quality of life for Southern Californians. 4: Provide innovative information and value-added services to enhance member agencies' planning and operations and promote regional collaboration.

EXECUTIVE SUMMARY:
SCAG Aviation Program staff have been gathering data and conducting analysis, including surveying and evaluating different regional aviation forecasts, in preparation of the Aviation Element of the Draft 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) (Connect SoCal). Based on research and analysis of different aviation forecasts, including discussions with key stakeholders and experts, projected growth rates for the SCAG region passenger and cargo demand forecasts have been determined. SCAG staff have chosen to utilize passenger and cargo growth rate projections developed by the Federal Aviation Administration.

BACKGROUND:
As a metropolitan planning organization (MPO), SCAG does not have any regulatory, developmental, operational, or planning authority over the airports. Development authority rests with the airports (i.e. airport sponsors retain authority over planning and development decisions) and the Federal Aviation Administration (FAA). Rather, as the designated MPO for the six-County Southern California Region, and thus primarily a surface transportation planning agency, SCAG is focused on air and passenger cargo activity from the perspective of how the traffic coming and going from the airports affects the region's roads, highways, and transit system. More specifically, California State Law (CA Government Code Section 65081.1) requires that regions that contain a primary air carrier airport (i.e. at least 10,000 annual scheduled passenger boardings) include an

airport ground access improvement program within the MPO regional transportation plan. Normally, MPOs address ground access improvements to the airports by discussing ongoing and proposed airport ground access projects, and maintaining an updated list of ongoing and proposed transportation projects, including airport ground access projects. In addition to the updated list of ground access projects, another way SCAG addresses airport ground transportation needs is by analyzing the current and the future passenger and air cargo demand within the region as part of the Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Update.

In order to assess the impact of airport activity on the surface transportation system, SCAG includes an analysis of historic, current, and projected aviation passenger and cargo demand as part of the RTP/SCS. Specifically for the Connect SoCal, SCAG aviation program staff have gathered airport activity data from the airports and other sources, analyzed that data, reviewed aviation demand forecasts from different agencies and organizations (e.g. FAA, AECOM), conducted internal forecasts using airport activity data, met with the airports and other experts, vetted initial analysis and findings with the Aviation Technical Advisory Committee and the Transportation Committee, and come to an empirically-driven conclusion on annual projected growth rates for passenger and cargo demand in the region based on the above research, analyses, and discourse.

SCAG REGION PASSENGER ACTIVITY AND FORECASTS:

SCAG region air passenger activity and trends: Despite some downturns, air passenger traffic in the region has increased at a steady rate over the past two decades, with a particularly vigorous growth rate in recent years. While the air passenger growth from 88.5 MAP in 2000 to 110.17 MAP in 2017 appears relatively modest at 1.3 percent annual growth, the overall growth during this seventeen-year time period reflects downturns that occurred following 9/11 and the Great Recession that started in 2007 and ended around 2011/12. After starting off the century at 88.5 MAP, air passenger travel experienced a significant decline following 9/11, going from 81.9 MAP in 2001 to 77.9 MAP in 2002. Air travel increased again until the Great Recession in 2006, which saw air travel demand go down as low as 79.1 MAP in 2009. However, following the dips in 2002 and 2009, air travel in the region has grown at a steady rate, with a noticeable increase following 2012.

Post-Great Recession, the increase in air passenger traffic has been robust. The region saw an increase from 85.8 MAP in 2012 to 110.17 MAP in 2017, an increase of 28 percent or 5.12 percent per year growth, making the SCAG region one of the fastest growing for passenger traffic when compared to other metropolitan regions, such as New York/New Jersey and Washington, DC. Overall, the SCAG region is one of the most active in terms of air passenger traffic, as well as annual air passenger demand growth.

Comparison of passenger demand with other regions: In 2017, the six-county SCAG region was one of the most active and fastest growing regions for air passenger traffic in the United States. At

110.17 MAP, SCAG was second only to the New York/New Jersey region for air passenger traffic, which saw a total of 132.69 MAP. Moreover, the growth rate of 5.12 percent for the SCAG region from 2012 to 2017 was second only to the Bay Area at 5.33 percent for the same time period. In general, the high air passenger activity and growing demand seen in the SCAG region is a trend occurring throughout the United States. Other major metropolitan regions in the United States saw significant air passenger activity and growth. Moreover, most regional forecasts project the growth in passenger demand to continue going forward.

SCAG region passenger demand forecast: In order to develop regional air passenger and cargo forecasts for Connect SoCal, a comprehensive review was conducted of different forecasts and their respective methodologies, including work done by the Federal Aviation Administration (FAA), and AECOM for the 2016 RTP/SCS. Both the FAA and AECOM utilized logarithmic regression (i.e. natural log transformations of the dependent and independent variables) analysis to develop their forecasted growth rates. Logarithmic regression analysis is a commonly accepted method for forecasting aviation travel demand by academics, at the University of California, Institute of Transportation Studies, and the Transportation Research Board.

In addition to logarithmic regression analysis being the standard method for aviation demand forecasting, utilizing the economy and airfare as key explanatory or independent variables for the response/dependent variable of passenger activity/demand is also the generally accepted industry and academic practice. For instance, the University of California, Institute of Transportation Studies, and the FAA Terminal Area Forecast (TAF), both use economy and airfare as key variables in their aviation forecast modeling. A healthy economy (usually measured in GDP or personal income) is correlated with increased air traffic. Conversely, the price of airfare is said to be negatively correlated with air travel demand (i.e. as prices increase then demand decreases, as prices decrease then demand increases). Therefore, for the purposes of air passenger demand modeling and forecasting, economy and airfare have proven to be statistically and practically significant variables.

Due to generally accepted industry and academic practice, both the FAA and AECOM focused their logarithmic regression analyses and forecasts on the impact that airfare and the economy (e.g. income, gross domestic product) have on air passenger demand. The FAA-TAF forecasted a growth rate of 2.1 percent for passenger enplanements at the commercial airports in the SCAG region from 2017 to 2045 (i.e. the base year and horizon year for the upcoming SCAG RTP/SCS). The AECOM 2016-2045 RTP forecasted annual growth rate of 1.6 percent was much more conservative in comparison. Due to the conservative projected growth rate, and the lower base year number of 2013/88.4 MAP caused by a region still recovering from the Great Recession, the 2040 projection from the 2016 RTP is relatively low in comparison to previous SCAG air passenger demand forecasts, the most recent FAA-TAF, and other regional, national, and international forecasts. Furthermore, in comparison to the actual passenger activity growth rates from around the world and the United States for 2012 to 2017, both the AECOM projected growth rate for the 2016

RTP/SCS and the 2018 FAA-TAF growth rate for the SCAG region were relatively modest growth estimates. Understanding the AECOM and FAA-TAF projected growth rates and forecasts within the context of actual activity data and growth rates, and comparable projections and forecasts, informed the decision-making process for the Connect SoCal regional forecasts.

Based on the 2016 AECOM and the FAA-TAF analyses, with input from the airports and ATAC, and an analysis conducted by an independent expert, a base year/passenger demand number of 2017/110.17 MAP and a growth rate of 2.1 percent for Connect SoCal was established. Determining the base (2017) and horizon (2045) years was relatively straightforward. The base year for the 2016-2040 RTP/SCS aviation demand forecast, conducted by AECOM, was 2013. Thus, the base year for the Connect SoCal demand forecast was moved forward by four years to 2017. Furthermore, 2017 was the most recent year available with complete airport passenger activity data. Although the base year for most of the analyses for Connect SoCal is 2016, a base year of 2017 empirically made the most sense for the Aviation Element. The horizon year of 2045 was already predetermined by the RTP/SCS development process. Much more complex was the determination of 2.1 percent as the projected annual growth. The proposed growth rate of 2.1 percent for the SCAG region is still relatively low when compared to the forecasted growth rates for other comparable city (e.g. San Francisco), North American (e.g. United States), and international (e.g. Africa, Asia, the world), points of comparison. However, 2.1 percent is a slightly more reasonable estimate for the SCAG region when one factors in the airport-level forecasts and constraints, and the long forecast horizon (2017 – 2045). Thus, based on an analysis of domestic and international growth rates by SCAG staff with support from an aviation planning expert, Mike Armstrong, the FAA-TAF 2.1 percent growth rate was determined to be a conservative but reasonable growth rate for the SCAG region.

Once the methodological assumptions were discussed, vetted, and finalized, the base year of 2017 with the passenger demand of 110.17 MAP, was then compounded at an annual rate of 2.1 percent for a 28-year growth period (2017 to 2045) to project 197.3 MAP for 2045.

SCAG Region Air Passenger Forecast

- Base year (2017): 110.17 MAP
- Projected growth rate for air passenger demand: 2.1 percent
- Horizon year (2045): 197.1 MAP

SCAG REGION AIR CARGO ACTIVITY AND FORECASTS:

SCAG region air cargo activity and trends: Although the air cargo activity in the region is currently operating at high levels, similar to or even more so than air passenger travel, air cargo can be sensitive to changes in the economy. Due to significant downturns in the air cargo industry caused by 9/11 and the Great Recession, the overall growth in regional air cargo traffic has been relatively

flat. From 2000 to 2017, air cargo grew marginally at 0.52 percent annual growth, going from 2.87 million tons of cargo in 2000 to 3.14 million tons in 2017. However, the steady to low growth in air cargo is also a reflection of the depressions caused by 9/11 and the Great Recession. Following 2010, air cargo experienced a boom, with air cargo demand hitting especially robust growth from 2012 onwards.

In recent years, air cargo activity in the region has experienced a dramatic upsurge. From 2012 to 2017, air cargo grew at an increased annual rate of 4.6 percent. The growth over the last decade is due in great part to a relatively healthy post-Great Recession economy. Whether the recent upward trend for cargo will continue remains to be seen, but the FAA is fairly optimistic in its cargo industry forecast. In the 2019 FAA Aerospace Forecast, the FAA forecasted annual cargo demand growth at 3.3 percent. Given the current and the forecasted growth in air cargo, and the subsequent increase in truck traffic coming and going from the region's airports, planning and strategizing for the surface transportation system into the future will be critical.

Federal Aviation Administration Aerospace Forecast: The regional cargo forecast for the Connect SoCal was calculated using the Federal Aviation Administration (FAA) Aerospace Forecast. The 2019 FAA Aerospace Forecast estimates an annual growth rate for air cargo at 3.3 percent a year. Cargo forecasts are based on the assumptions that existing security restrictions will remain, most of the shift from air to ground transportation has occurred, and that long-term cargo growth is driven by economic growth. As a result, most forecast models of cargo activity are linked to gross domestic product.

Based on the FAA growth rate (3.3 percent), using a base year of 2017 and 3.14 million tons, the air cargo forecast for the SCAG region in 2045 is 7.7 million tons.

SCAG Region Air Cargo Forecast

- Base Year (2017): 3.14 million tons
- Projected growth rate for cargo demand: 3.3 percent
- Horizon Year (2045): 7.77 million tons

DECLINING AIRCRAFT OPERATIONS AND FLATTENING FORECASTS:

SCAG region aircraft operations have been declining: Overall growth in passenger and cargo demand has not resulted in increased aircraft operations. Although air passenger traffic has increased steadily from 2000 to 2017, and dramatically from 2012 to 2017, aircraft operations have actually decreased overall from 2000 to 2017, and flattened from 2012 to 2017. The SCAG region commercial, reliever, and general aviation airports went from 5.1 million operations in 2000 to 3.7 million operations in 2017. After hitting a dip of 3.6 million operations in 2012, aircraft operations

began to flatten out and slowly increase. Overall, aircraft operations in the region decreased by an annual rate of 1.8 percent, or 26.51 percent total, from 2000 to 2017, and then increasing slightly from 2012 to 2017 at an annual rate of 0.8 percent. Therefore, as evidenced by the data, increased passenger and cargo activity does not result in aircraft operations increasing at the same rate.

Due to various factors, the number of total aircraft operations did not grow as dramatically as the number of air passengers or cargo activity. Much of the discrepancy between air passenger traffic and aircraft operations annual growth rates can be explained by the newer model larger aircraft (e.g. Airbus A380, Boeing 747-8), planes with smaller seats and more rows, and airlines running at higher load factors (e.g. over 90 percent versus 70 percent) than in the past[1].

Federal Aviation Administration (FAA) forecasting flatter growth for aircraft operations: Unlike forecasted increases in air passenger and cargo activity, forecasted increases in aircraft operations are projected at a significantly lower rate. Given breakthroughs in technology and manufacturing, it is likely that newer aircraft with higher capacity (and lower emissions and sound) will be replacing the older planes in the airline fleets[2]. Moreover, it is also likely that the airlines will continue to increase their load factors[3]. In addition to changes in the commercial airline industry, the decline in general aviation operations has and will continue to impact the overall number of aircraft operations. Therefore, due in part to these key factors (e.g. larger planes, increased load factors, decreasing general aviation), the 2018 FAA-TAF estimates a relatively conservative annual growth rate of 0.74 percent for total aircraft operations in the SCAG region from 2017 to 2045.

SCAG Region Aircraft Operations Forecast (2017 to 2045)

- Base Year (2017): 3.7 million operations
- Projected growth rate for aircraft operations: 0.74 percent
- Horizon Year (2045): 4.58 million operations

NEXT STEPS:

Follow up with airports to finalize airport-level forecasts and capacity constraints: Following the determination of the projected growth rate and passenger demand for the SCAG region, the next

[1] Goldstein, Michael. 2018. "Meet the Most Crowded Airlines: Load Factor Hits All-Time High." Forbes. https://www.forbes.com/sites/michaelgoldstein/2018/07/09/meet-the-most-crowded-airlines-load-factor-hits-all-time-high/#51f151b554fb

[2] Federal Aviation Administration (FAA). History of Noise. https://www.faa.gov/regulations_policies/policy_guidance/noise/history/

[3] Goldstein, Michael. 2018. "Meet the Most Crowded Airlines: Load Factor Hits All-Time High." Forbes. https://www.forbes.com/sites/michaelgoldstein/2018/07/09/meet-the-most-crowded-airlines-load-factor-hits-all-time-high/#51f151b554fb

step will be to drill down and develop airport-level passenger demand forecasts. The development of the airport-level passenger forecasts for the Connect SoCal requires follow-up with the SCAG region's airports, particularly regarding projected airport activity and airport capacity constraints (institutional and physical).

A critical component of the analytical process throughout the development of the Connect SoCal air passenger forecasts has been working with the airports to sync the regional forecast with the individual airport forecasts and capacity constraints. Each of the commercial airports in the region have their own project timelines and internal passenger activity forecasts, as well as physical, institutional, and legal capacity constraints. Thus, in determining a projected annual growth rate for the region, the SCAG Aviation Program staff was, and continues to be, mindful of how airport-specific forecasts and constraints correspond with the broader regional forecast.

FISCAL IMPACT:
Work associated with this item is included in the FY 2019-2020 Overall Work Program (230-0174.05: 2016 RTP/SCS Regional Aviation Program Implementation and Preparation for the 2020 RTP/SCS)

ATTACHMENT(S):
1. PowerPoint Presentation - Regional Passenger Forecast

Regional Passenger Forecast

Transportation Committee

Hiroshi John Ishikawa, Ph.D.
Transportation Planning-Aviation Program
August 1, 2019

www.scag.ca.gov

Today's Meeting

- Completed Tasks: Data collection, analysis, and regional level forecasts
- Regional passenger activity and forecast
- Regional cargo activity and forecast
- Passenger and cargo activity does not translate into operations
- Next Steps: Work with airports to finalize airport forecast numbers and constraints, and upcoming deadlines.

Reminder: SCAG/ATAC has no authority over airports

- As a metropolitan planning organization (MPO), SCAG is a surface transportation planning agency
- State law (CA Government Code Section 65081.1) requires that regions that contain a primary air carrier airport (at least 10,000 annual scheduled passenger boardings) include airport ground access improvement projects within the MPO RTP/SCS
- Moreover, federal law encourages MPOs to consult with officials responsible for other types of planning activities that are affected by transportation in the area, including airport operations [23 U.S. Code Section 134 (g)(3)(A)]
- Beyond maintaining the list of ground access projects and the consultative relationship with airport officials, **SCAG has no regulatory, planning, or operational authority over the region's airports**

Federal and State Aviation Requirements for RTP (continued)

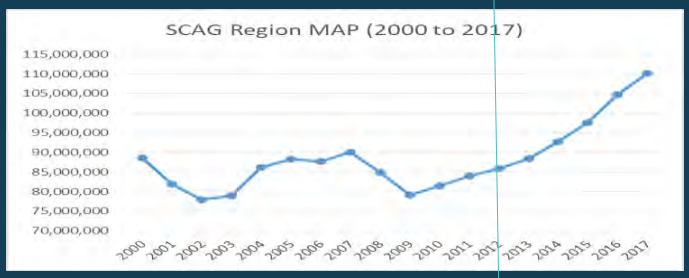
- In summary, the focus of MPO aviation planning is to ensure adequate ground transportation improvements in response to potential future airport demands.
- Moreover, the purpose of MPO regional aviation planning is not to dictate airport operation and/or development.

Completed Tasks: Research and analysis for the RTP/SCS

- Data collection from airports, airport activity reports, and government and academic reports and websites.
- Analyses of airport current and historic activity data
- Reviewed/surveyed different regional aviation forecasts and their methodology
- Established base (2017) and horizon (2045) years for regional forecast: Base year = 2017 (110.17 MAP), Horizon year = 2045 (??? MAP)
- Analyzed existing forecasts and projections, and consulted with airports and experts to determine regional forecast growth rate.
- Worked with consultant, Mike Armstrong.
- Meeting and working with airports to finalize airport level forecasts and constraints.

Review: Passenger Activity in SCAG Region

- Regional air passenger travel has increased at an annual growth rate of 1.3% a year, from 88.5 MAP in 2000 to 110.17 MAP in 2017.
- However, the overall growth rate from 2000 to 2017 factors in depressions caused by 9/11 and the housing recession of 2006.
- From 2009 onward, air travel in the region has experience steady growth, hitting its peak from 2012 to 2017, at an annual growth of 5.12% per year.



Review: Key Elements of the FAA Terminal Area Forecast

The FAA Terminal Area Forecast-Modernization (TAF-M) is the official FAA forecast for aviation activity for U.S. airports.

- Dependent/Response variable: Passengers (e.g. ticket data, arrivals and departures)
- Independent/Regressor variables: Airfare, economy (e.g. GDP, personal income), and other variables (e.g. population, route, travel distance).
- The regression is a logarithmic (i.e. log-log) regression due in part to the coefficients being interpreted as elasticities

$$\log(Passenger_{i-j,t}) = \beta_0 + \beta_1 \log(Fare_{i-j,t}) + \beta_2 \log(Route_{i-j,t}) + \beta_3 \log(Distance_{i-j}) + \beta_4 \log(Income\ Origin_{it}) + \beta_5 \log(Income\ Dest_{jt}) + a_{i-j} + u_{i-j,t} \quad (1)$$

FAA-TAF Passenger Demand Forecast for SCAG Region

- After internal analysis (e.g. in-house regression), review of other forecasts (e.g. AECOM, FAA-TAF), and discussions with airports and experts, the decision was made to use the FAA-TAF projection for the 2020-2045 RTP/SCS passenger demand forecast for the region.
- Based on an analysis of different forecasts and the recommendation of our consultant, we opted for the FAA-TAF projection.
- The 2018 FAA-TAF CAGR from 2017 to 2045 for passenger enplanements is 2.1%. (Note: prior meetings referenced the 2017 FAA-TAF CAGR)(Note: average annual growth from 2017 to 2045 is 2.8%)

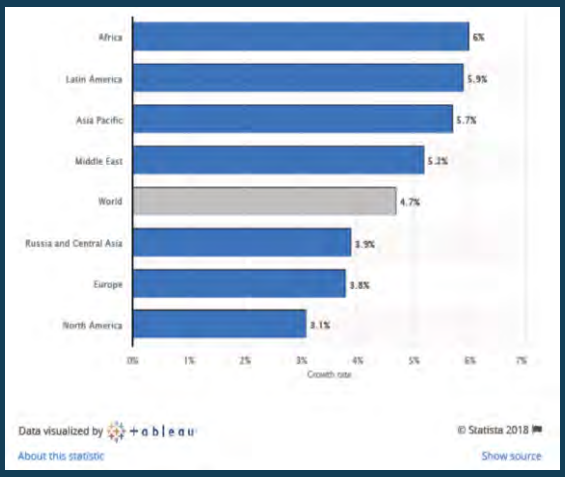
  SCAG Region Air Passenger Forecast
  - Base Year (2017): 110.17 million annual passengers
  - Projected growth rate for air passenger demand: 2.1%
  - Horizon Year (2045): 197.1 million annual passengers

SCAG vs the World Forecasts

In comparison to global air passenger traffic, North American (i.e. traveler residence is the United States) air travel is forecasted to grow at a slower rate than the rest of the world.

Forecasted Annual Passenger Growth Rates (2018 to 2037)

Region	Estimated Annual Growth
Africa	6%
Latin America	5.9%
Asia Pacific	5.7%
Middle East	5.2%
World	4.7%
Russia and Central Asia	3.9%
Europe	3.8%
North America	3.1%



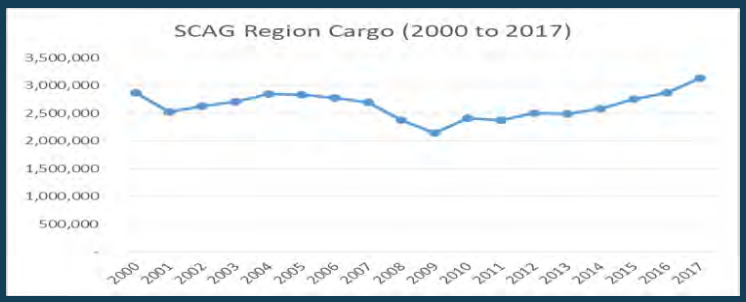
Comparison of Air Traffic Forecasts/Growth Rates

Based on prior and current work conducted by AECOM and the FAA TAF-M, there are a range of growth rates and forecasts for the SCAG Region. Moreover, these growth rates and forecasts can be compared to national and other regional forecasts.

Source	Rate (Per Year)	Time Period	Region/Airport
SCAG (Airports)(Actual)	1.30%	Per Year (2000 to 2017)	SCAG
SCAG (Airports)(Actual)	5.12%	Per Year (2012 to 2017)	SCAG
FAA TAF CAGR	2.1%	Per Year (2017 to 2045)	SCAG
AECOM (2016 RTP)	1.61%	Per Year (2013 to 2040)	SCAG
FAA TAF	1.83%	Per Year (2016 to 2045)	ATL
FAA TAF	2.11%	Per Year (2016 to 2045)	ORD
FAA TAF	2.17%	Per Year (2016 to 2045)	JFK
FAA TAF	2.56%	Per Year (2016 to 2045)	SFO
SFO	2.70%	Per Year (2018 to 2023)	SFO
Statista	3.10%	Per Year (2018 to 2037)	North America
Statista	4.70%	Per Year (2018 to 2037)	World

Air Cargo Trends and Forecasts

- Although the overall annual growth rate for air cargo (in tons) appeared relatively flat from 2000 to 2017, at compounded annual growth of 0.52%, air cargo activity was also volatile during that time period.
- Cargo activity was impacted by 9/11 and the housing recession.
- However, after dipping down to a low of 2.15 million tons in 2009, from 2012 to 2017, cargo experienced rapid growth at an annual rate of 4.6%.



FAA Aerospace Forecast for SCAG Region

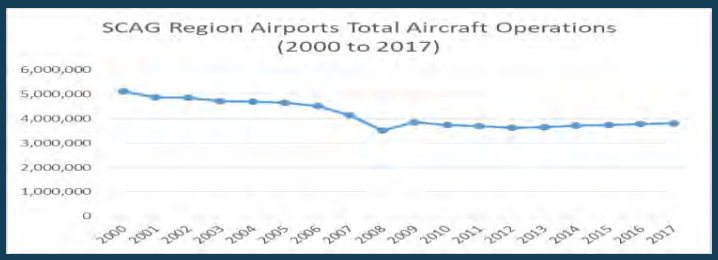
- The FAA Aerospace Forecast 2019-2039 is developed using statistical models to explain and incorporate emerging trends of the different segments of the aviation industry.
- Based on an analysis of different cargo forecasts and the recommendation of our consultant, we opted for the FAA Aerospace Forecast projection.
- The 2019 FAA Aerospace Forecast projects a CAGR of 3.3% for cargo activity. (Note: prior meetings referenced the 2018 FAA Aerospace Forecast) (Note: the 2019 Forecast average annual growth is 4.6%)

SCAG Region Air Passenger Forecast

- Base Year (2017): 3.14 million tons
- Projected growth rate for air cargo demand: 3.3%
- Horizon Year (2045): 7.77 million tons

Declining and flattening aircraft operations

- Unlike air passenger and cargo demand, aircraft operations decreased from 2000 to 2017 at a rate of -1.8%.
- However, after the reductions caused by 9/11 and the housing recession, aircraft operations flattened to 0.8% from 2012 to 2017
- Due to newer planes with higher passenger and cargo capacity, and airlines operating at higher load factors, aircraft operations do not mirror air and passenger demand.



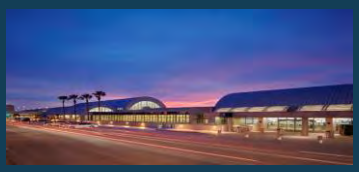
Aircraft Operations Forecast for SCAG Region

- In addition to enplanements, the FAA-TAF also forecasts aircraft operations.
- Not surprisingly, the FAA-TAF operations forecast was impacted by the historic decline and recent flattening of aircraft operations.
- The 2018 FAA-TAF projects an annual growth rate of .74% for total aircraft operations in the SCAG region.

  SCAG Region Aircraft Operations Forecast
  - Base Year (2017): 3.7 million operations
  - Projected growth rate for air cargo demand: .74%
  - Horizon Year (2045): 4.58 million operations

Next Steps:

- Work with airports on airport forecasts and capacity constraints
- Report final forecast numbers to ATAC and TC
- Preliminary Draft Aviation Element to TC by September 2019
- Release Draft 2020 RTP/SCS October 2019


CONNECT SoCal

Thank you!
Mahalo nui loa!
Gracias!

Hiroshi John Ishikawa, Ph.D.
Ishikawa@scag.ca.gov
213-236-1838
www.scag.ca.gov

SCAG
INNOVATING FOR A BETTER TOMORROW

This Page Intentionally Left Blank

REPORT

Southern California Association of Governments
900 Wilshire Boulevard, Suite 1700, Los Angeles, California 90017
August 1, 2019

To: Transportation Committee (TC)

EXECUTIVE DIRECTOR'S APPROVAL

Kome Ajise

From: Philip Law, Manager of Transit/Rail, 213-236-1841, LAW@scag.ca.gov
Subject: Connect SoCal New Mobility Framework

RECOMMENDED ACTION:
Direct staff to include the proposed policy framework, which incorporates feedback from the Emerging Technologies Committee, in Connect SoCal, the 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS).

STRATEGIC PLAN:
This item supports the following Strategic Plan Goal 1: Produce innovative solutions that improve the quality of life for Southern Californians. 2: Advance Southern California's policy interests and planning priorities through regional, statewide, and national engagement and advocacy. 4: Provide innovative information and value-added services to enhance member agencies' planning and operations and promote regional collaboration.

EXECUTIVE SUMMARY:
Staff will present a matrix that can serve as a framework with which to view potential policies and strategies to assess new technologies in the region. These policies represent examples that SCAG could assist local jurisdictions in adopting as part of the implementation of the plan. Staff presented the proposed framework to the Emerging Technologies Committee (ETC) at their July 24, 2019 meeting. Feedback from the ETC is incorporated into the framework presented in this report.

BACKGROUND:
Emerging technology is a topic of intense speculation and interest at the regional planning level. Numerous popular press and academic articles have advanced the argument that the transportation sector is currently experiencing a period of changing transportation that has not been seen since the first decades of the previous century. Like that period, changes are now predominantly driven by private sector companies. In addition, the companies driving these changes are doing so through disruptive business models.

At the state, regional and local levels, public agencies have begun to develop and implement policies that encourage technological innovation, and concurrently set boundaries regarding public

safety, use of the public right-of-way and more transparency with regards to data sharing. Larger cities in particular have learned valuable lessons since the sudden advent of TNCs took them completely by surprise. Many large cities across the state are working together on data platforms, which facilitate partnerships between technology innovators and the public sector.

Jurisdictions in the SCAG region should work on developing customized frameworks for working with and anticipating technological change such as this. These frameworks allow cities and other public agencies to meet with emerging technology providers and assess whether the service benefits the jurisdiction beyond the novelty factor of hosting a new product. Cities in the SCAG region should continue to consider how these new services benefit residents. In addition, to avoid a future in which the SCAG region suffers from increased congestion and GHG emissions, reduced active transportation and compromised livable communities, the region should encourage adoption of policies that encourage what has been described as the Three Revolutions: Electrification, Sharing, and Automation.

In addition to the examples cited earlier, SCAG has prepared a set of recommended policies. These policies represent examples that SCAG could assist local jurisdictions in adopting as part of implementation of the plan. These policies are recommendations that would need to be customized and adopted by local jurisdictions. They have been organized into three policy areas:

- Land Use Policies - reflect collaborative ideas, incentives and regulations that local jurisdictions could adopt to shape how emerging technologies interact with the built environment and urban design.
- Street Design Policies - reflect concepts that local jurisdictions and transportation agencies could partner to implement, which would guide how emerging technologies operate in the public right of way and the curb zone.
- Pricing/System Management Policies - comprise the most effective and challenging policies for influencing how users will choose to use emerging technologies in different urban and suburban settings.

This matrix can help policymakers frame their initial reactions and policy solutions to both challenges and opportunities that arise from new technologies that enter our region.

FISCAL IMPACT:
Funding to support work on this report is included in 010.1631.02 (FY 19/20 OWP).

ATTACHMENT(S):
1. Emerging Technology Policy Matrix_190724
2. PowerPoint Presentation - Connect Socal-Emerging_Tech_Report

Technology Specific Policies

SCAG has prepared a set of recommended policies that will be featured in the Connect SoCal Emerging Technology Technical Report. These policies represent examples that SCAG could assist local jurisdictions in adopting as part of implementation of the plan. These policies are recommendations that would need to be studied, customized and adopted by local jurisdictions to fit the local context. For example, they would apply differently in urban areas than in suburban areas. They have been organized into three policy areas:

- Land Use Policies – reflect collaborative ideas, incentives and regulations that local jurisdictions could adopt to shape how emerging technologies interact with the built environment and urban design.
- Street Design Policies – reflect concepts that local jurisdictions and transportation agencies could partner to implement, which would guide how emerging technologies operate in the public right of way, including the curb zone, as part of a comprehensive curb space management system.
- Pricing and System Management Policies - comprise the most effective and challenging policies for influencing how users will choose to use emerging technologies in different urban and suburban settings.

Local Government & Transportation Agencies Emerging Technology Policy Matrix			
	Land Use	**Street Design**	**Pricing / System Mgmt.**
.**Vehicle Electrification** - light duty electric vehicles (EV) and charging stations.	Encourage EV charging at public fast charging locations, workplaces, and multi-family housing.	Encourage curbside EV charging stations and parking.	Provide rebates for charging stations and EVs.
Carshare - Cars that can be rented for a short period, either return-trip or point to point parking.	Encourage Carshare vehicles and parking as transportation demand management (TDM) strategies at workplaces, and multi-family housing.	Provide more on-street parking spaces or "pods" for car share vehicles.	Include car share as a service available on a Mobility as a Service (MaaS) platform. See below for definition of MaaS. Encourage carshare use as an alternative to single occupant vehicles (SOV).

Micro-mobility (including Bike share) - combination of docked and dockless shared bikes, ebikes, and escooters.	Increase designated parking areas for micromobility devices.	Expand protected slow speed lanes for bikes and micromobility devices.	Include micro-mobility as a service available on a MaaS platform and encourage as a SOV alternative.
Smart Parking Systems - combination of variably priced metered parking, signs that indicate parking availability, and smartphone apps-for payment and navigation.	Decrease cost of long term off-street pricing relative to on-street parking to encourage turn-over of on-street parking.	Implement smart, dynamically priced on-street parking with app based navigation in more urban areas.	Dynamically price parking by location, time of day, and even parking purpose (package delivery, v. passenger parking).
Transportation Network Companies (TNCs) - also called ridehailing, refers to companies like Lyft and Uber.	Reduce parking minimums for new developments based on research that demonstrates reduced parking need due to TNC usage. Consider how TNCs might support TDM at workplaces, and multi-family housing (e.g., guaranteed ride home, first/last mile).	Designate more pick-up and drop-off parking spaces, particularly at popular destinations to avoid dangerous double parking. Implement parking protected slow speed lanes to reduce conflicts with pick-up and drop-offs.	Include ridehailing as a service available on a MaaS platform. Use pricing (fees) on TNC rides to encourage more pooled (multi-passenger) TNC rides.
Transit/TNC Partnerships - arrangements where public transit agencies subsidize TNC trips as a replacement for low ridership routes or expensive dial-a-ride services.	Design transit/TNC partnerships to encourage trips to and from transit and selected destinations, such as downtowns, employment centers.	Same as above but tailored to the goals of the partnership.	Continue experimenting with partnerships in order to supplement low performing routes or provide first/last mile service.

Microtransit - on demand transportation service ordered through smartphone apps and provided by vans or shuttles.	Work with large building owners to designate locations around their property for physical and virtual stops. Encourage subsidized microtransit service as a TDM strategy at workplaces, and multi-family housing.	Designate more pick up & drop off spaces for "virtual" shuttle stops. Implement parking protected slow speed lanes to reduce conflicts with pick-up and drop-offs.	Include microtransit on a MaaS platform, particularly with regards to transfers on universal fare media, as an SOV alternative. Allow microtransit vehicles to use bus-only lanes.
Mobility as a Service (MaaS) - a combination of a universal fare payment system with multi-modal navigation provided on a smart phone app.	Work with large building owners and employers to include traveler information screens in popular locations.	Provide wayfinding and arrival time information at physical and virtual stops.	Support development of a MaaS platform to plan and pay for multi-modal travel options. Use MaaS, along with pricing strategies, to incentivize and encourage alternatives to SOV use.
Automated/Connected Vehicles (AV) - also known as self-driving, or autonomous vehicles, these are vehicles that can navigate under certain conditions without human input.	Reduce parking minimums based on research that demonstrates reduced need due to shared vehicle usage. Implement smart growth policies to discourage AV induced sprawl. Identify parking, storage and charging areas for AVs near workplaces and popular destinations to avoid extensive deadheading (empty miles).	Designate more pick & drop off parking spaces, particularly at popular destinations to avoid dangerous double parking. Implement parking protected slow speed lanes to reduce conflicts with pick-up and drop-offs.	Implement pricing, such as vehicle miles traveled (VMT) fees, and experiment with layered pricing, including zero occupancy fees to discourage deadheading (empty vehicles).

Emerging Technology

Regional Implications of the New Tomorrow

Marco Anderson
Program Manager, Sustainability Department
August 1st, 2019

www.scag.ca.gov

Agenda

1. Technical Approach
2. Policy Approach
3. Implementation

Mobility Innovations – 2016

GHG REDUCTIONS FROM MOBILITY INNOVATIONS 2040

ZERO-EMISSION VEHICLE (ZEV)

1.0%

NEIGHBORHOOD ELECTRIC VEHICLE (NEV)

0.1%

CARSHARING/ RIDESOURCING

0.9%

lyft

UBER

16% of Uber trips in LA started or ended near a Metro Station

22% of those trips took place during peak commute times (7-10am & 4-7pm, M-F)

3

Research Questions

- What is happening in the private & public sectors?
- How can SCAG collect data and model these innovations?
- If these innovations produce outcomes that work against our regional goals, how do we develop and encourage policies?

4

Emerging Technologies Discussed

Existing & Near-term Emerging Technologies

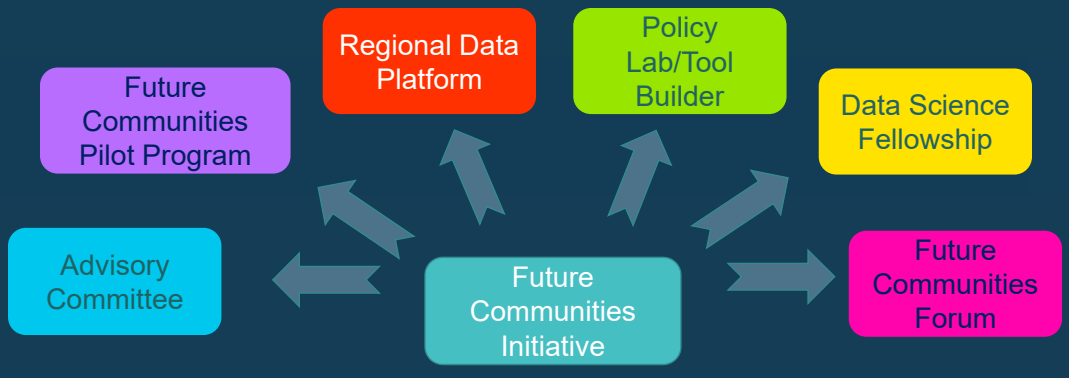
- Alternative Fuel Vehicles*
- Carshare*
- Bike Share / Micromobility*
- Neighborhood Electric Vehicles
- Smart Parking*
- Transportation Network Companies (TNC)
- Transit / TNC partnerships*
- Microtransit
- Mobility as a Service (MaaS)
- Advanced ITS – Connected Vehicles
- Goods Movement Technologies

Medium to Long term technologies

- Automated / Connected Vehicles
- Hyperloop
- Vertical Take Off and Landing

5

Future Communities Initiative: Program Details



Partnership Framework

- SCAG launched a 3-year, $8 m initiative to advance priority projects
- The initiative will leverage public/private funds, including $4.5 M in SCAG resources
- Projects will be administered by SCAG leveraging existing relationships and programs with cities/counties

6

Agenda

1. Technical Approach
2. **Policy Approach**
3. Implementation

What Stakeholders Have Asked For

Main Themes:

- Mobility
- Accessibility
- Public Health/Safety
- Climate Change

San Francisco's Guiding Principles

TEN GUIDING PRINCIPLES

Collaboration

Emerging Mobility Services and Techno with each other and the community to

Safety

Emerging Mobility Services and Techno Francisco's goal for achieving Vision Z security.

Transit

Emerging Mobility Services and Techno services, must account for the operati occupancy modes.

Congestion

Emerging Mobility Services and Technologies must consider the effects on traffic congestion, including the resulting impacts on road safety, modal choices, emergency vehicle response time, transit performance and reliability.

Sustainability

Emerging Mobility Services and Technologies must support sustainability, including helping to meet the city's greenhouse gas (GHG) emissions reduction goals, promote use of all non-auto modes, and support efforts to increase the

Equitable Access

Emerging Mobility Services and regardless of age, race, color, g any other protected category, sl and groups who have historically benefit most.

Accountability

Emerging Mobility Services and and the public can effectively e system and determine whether

Labor

Emerging Mobility Services and Technologies must ensure fairness in pay and labor policies and practices. Emerging Mobility Services and Technologies should support San Francisco's local hire principles, promote equitable job training opportunities, and maximize procurement of goods and services from disadvantaged business enterprises.

Disabled Access

Emerging Mobility Services and Technologies must be inclusive of persons with disabilities. Those who require accessible vehicles, physical access points, services, and technologies are entitled to receive the same or comparable level of access as persons without disabilities.

Financial Impact

Emerging Mobility Services and Technologies must promote a positive financial impact on the City's infrastructure investments and delivery of publicly-provided transportation services.

Common Proposed Policies

Road Pricing
- Layered pricing to include congestion pricing, and high zero-occupancy pricing

Integrated Payment Systems

Reform Parking Requirements
- Design future parking for flexible use

Smart Growth policies to mitigate AV induced sprawl

Job Centers Concept to reduce commute mileage

Require more private sector data sharing

Smart curb space management

Emerging Technology Policy Matrix

Local Government & Transportation Agencies Emerging Technology Policy Matrix			
	Land Use	Street Design	Pricing / System Mgmt.
.Vehicle Electrification - light duty electric vehicles (EV) and charging stations.	Encourage EV charging at public fast charging locations, workplaces, and multi-family housing.	Encourage curbside EV charging stations and parking.	Provide rebates for charging stations and EVs.
Carshare - Cars that can be rented for a short period, wither return-trip or point to point parking.	Encourage Carshare vehicles and parking as transportation demand management (TDM) strategies at workplaces, and multi-family housing.	Provide more on-street parking spaces or "pods" for car share vehicles.	Include car share as a service available on a Mobility as a Service (MaaS) platform. See below for definition of MaaS. Encourage carshare use as an alternative to single occupant vehicles (SOV).

Agenda

1. Technical Approach
2. Policy Approach
3. Implementation

Policy Integration

Land-Use
Street Design
Pricing and System Management

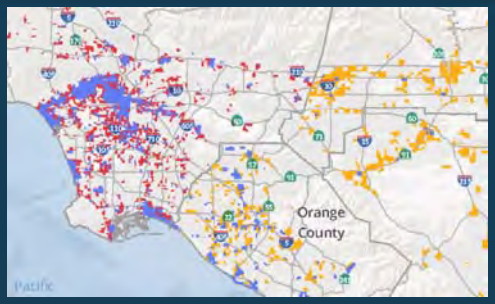
13

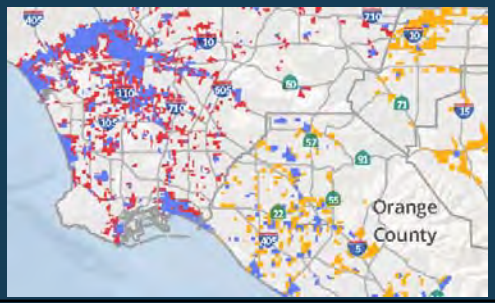
Land-Use & Sustainability

Neighborhood Mobility Areas

Identified TAZ's with

1. High number of Intersections
2. Low observed travel speeds
3. High mix of uses
4. High accessibility to "everyday" destinations





14

Land-Use and New Mobility

Neighborhood Mobility Areas

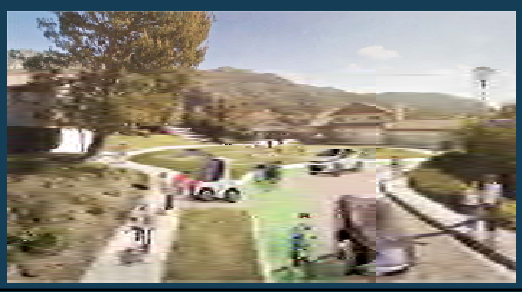
Employ Complete Streets strategies:

- Bike lanes, roundabouts, wider sidewalks & better lighting,
- Connected network of low-speed lanes
- Neighborhood design

Shift short trips to Non-SOV modes.

15

Street Design & New Mobility



16

Street Design & New Mobility

17

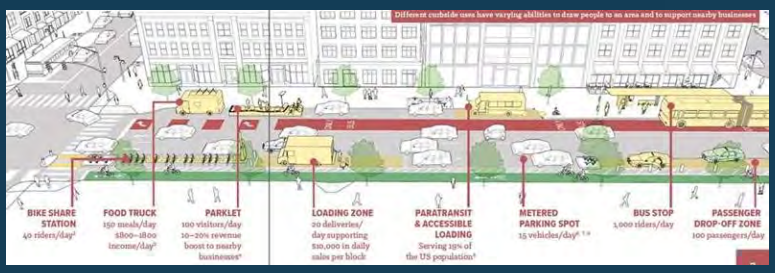
System Management & Sustainability

Regional Express Lane Network

Pricing Strategies

18

System Management & New Mobility



Curbside Management

19

4 MPO Future Mobility Research Program

Research Products:

- Off-Model Calculators for Carshare, BikeShare, Microtransit etc.
- Modeling approach for automated vehicles
- Currently conducting travel surveys of ridehailing users

20

Thank You

Marco Anderson
Sustainability
anderson@scag.ca.gov
www.scag.ca.gov