Stantec

One person's cell phone is another person's planning tool

Presented by
Cynthia Albright, AICP CUD, GISP

NorCal ITE Wednesday
November 14, 2018

- 2 Major Airports

- 6 Entry Points

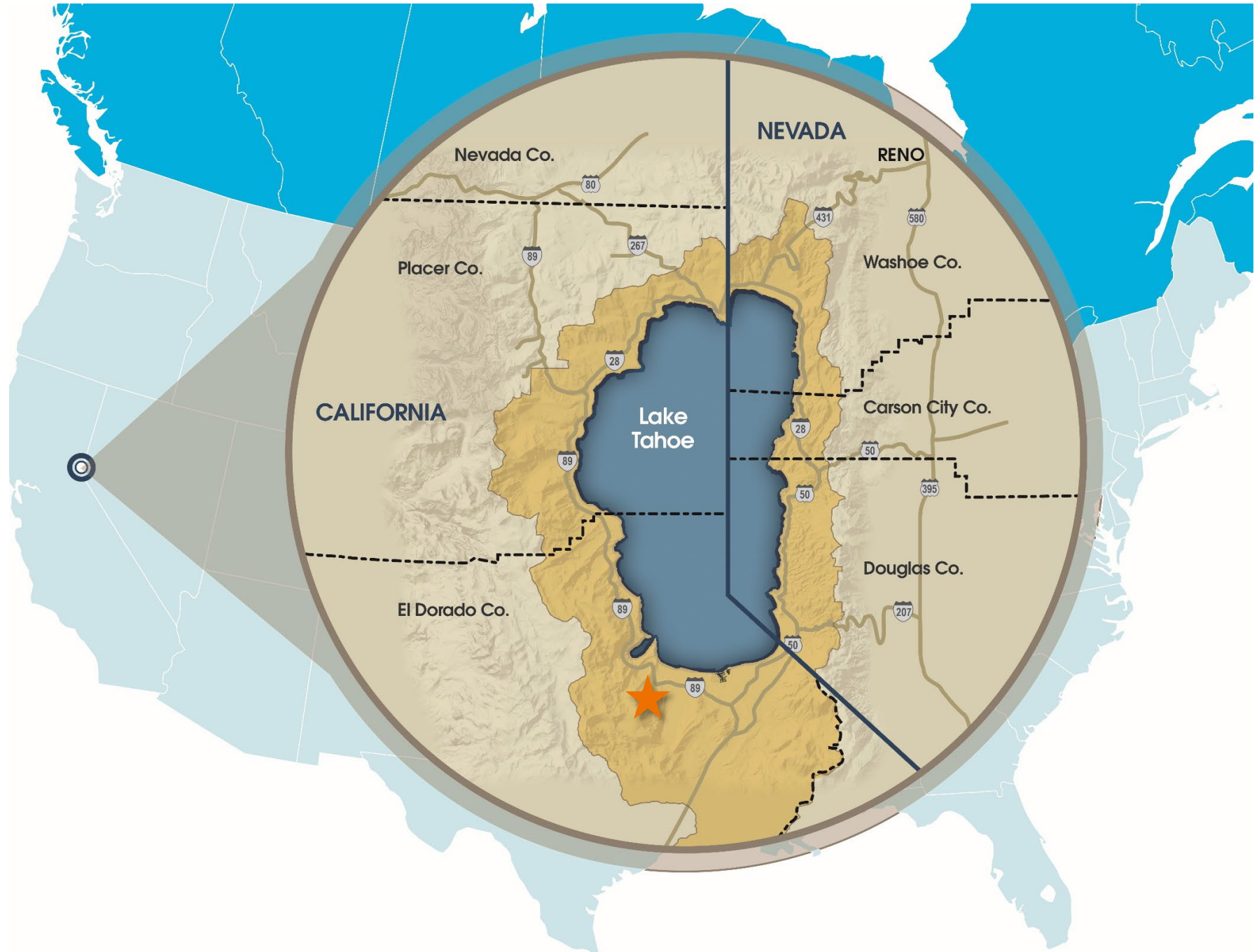- Minimal Regional Bus Service

- Rail Service 1 stop per day

RENO

SACRAMENTO

CARSON CITY

BAY AREA

STOCKTON

SAN JOSE

○ METROPOLITAN AREA

✈ INTERNATIONAL AIRPORT

Ⓟ PARK AND RIDE FACILITY

🚗 ——— AUTO

🚆 ········· RAIL

🚌 – – – BUS

View north of the Lake Tahoe Basin from Mt. Tallac

Local Facts

8-10M
Annual Visitors 2014

Legend

Land Ownership

Public

Private

Recreation Areas

Recreation Facilities

Campground

Beach

Marina

Day Use Area

Ski Resort

Trailhead

- - - Tahoe Rim Trail

Key Issues

- Addressing uniqueness of congestion

- Recreation travel patterns

- Lack of inter-regional connections

- Coordinated parking management and policy

- Developing technology infrastructure

Project Goals

- Accelerate implementation with Basin agencies

- Better understand recreation travel demands

- Improve environment and quality of experience by reducing auto dependency

airsage

- Collect & analyze mobile signaling data
- We "see" over:
  - 1/3 of the U.S. population
  - 100 million devices / day
  - each device average 100 times / day
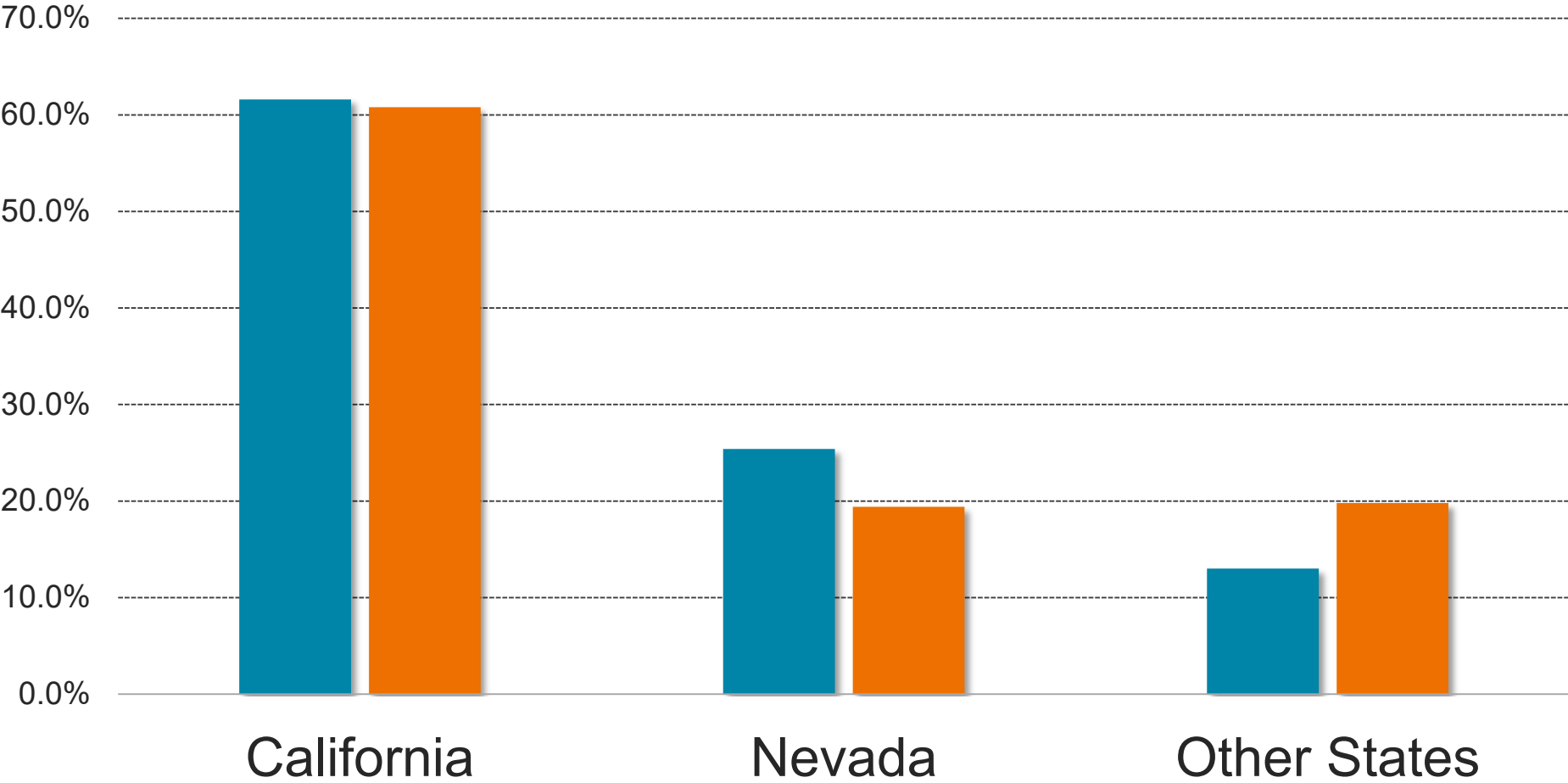- **Anonymous** - Consumer privacy

Analysis Zones

Legend

External Capture Polygons
Internal TAZ Boundaries
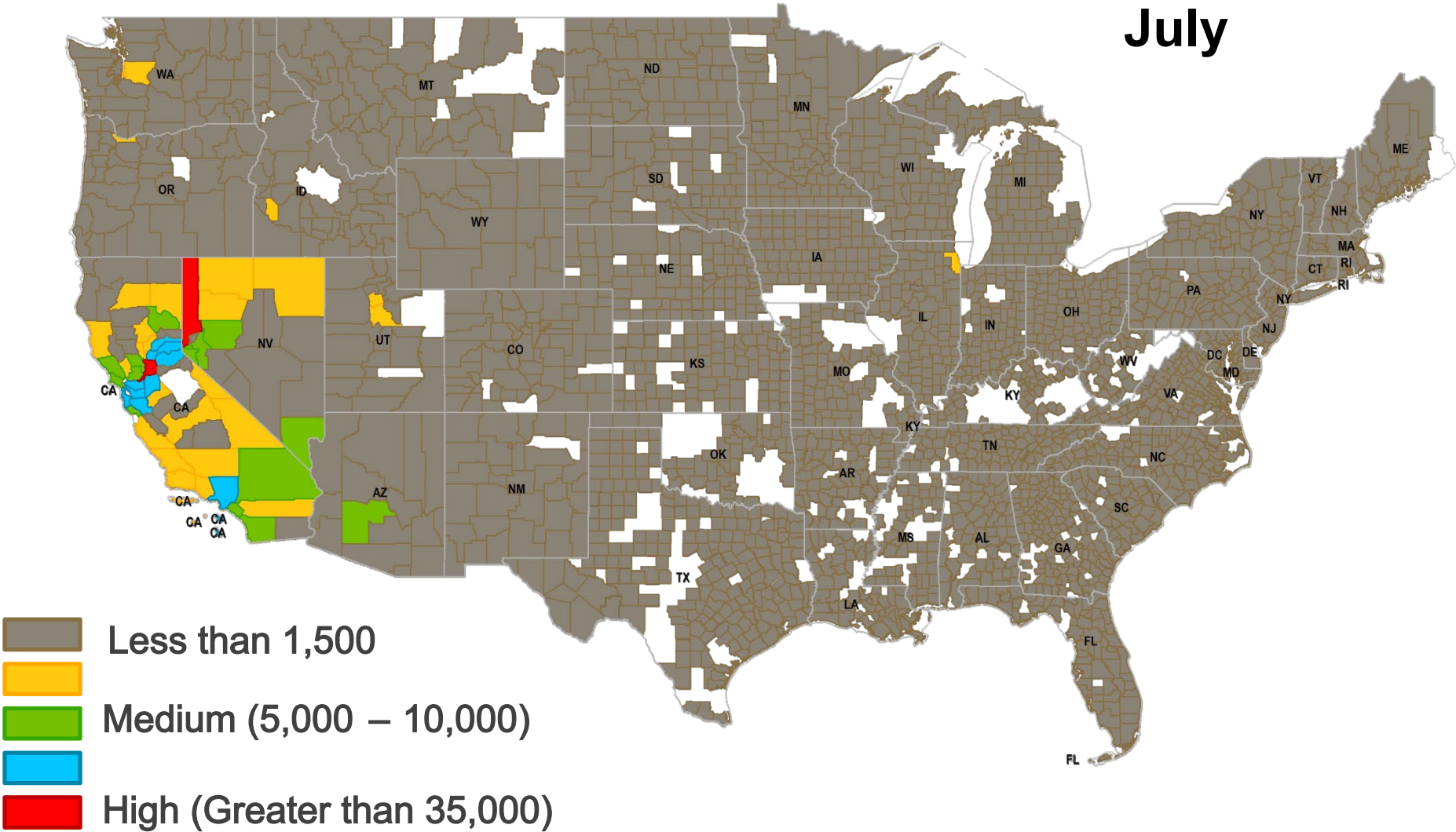LakeTahoe
Primary Roadways
Secondary Highways
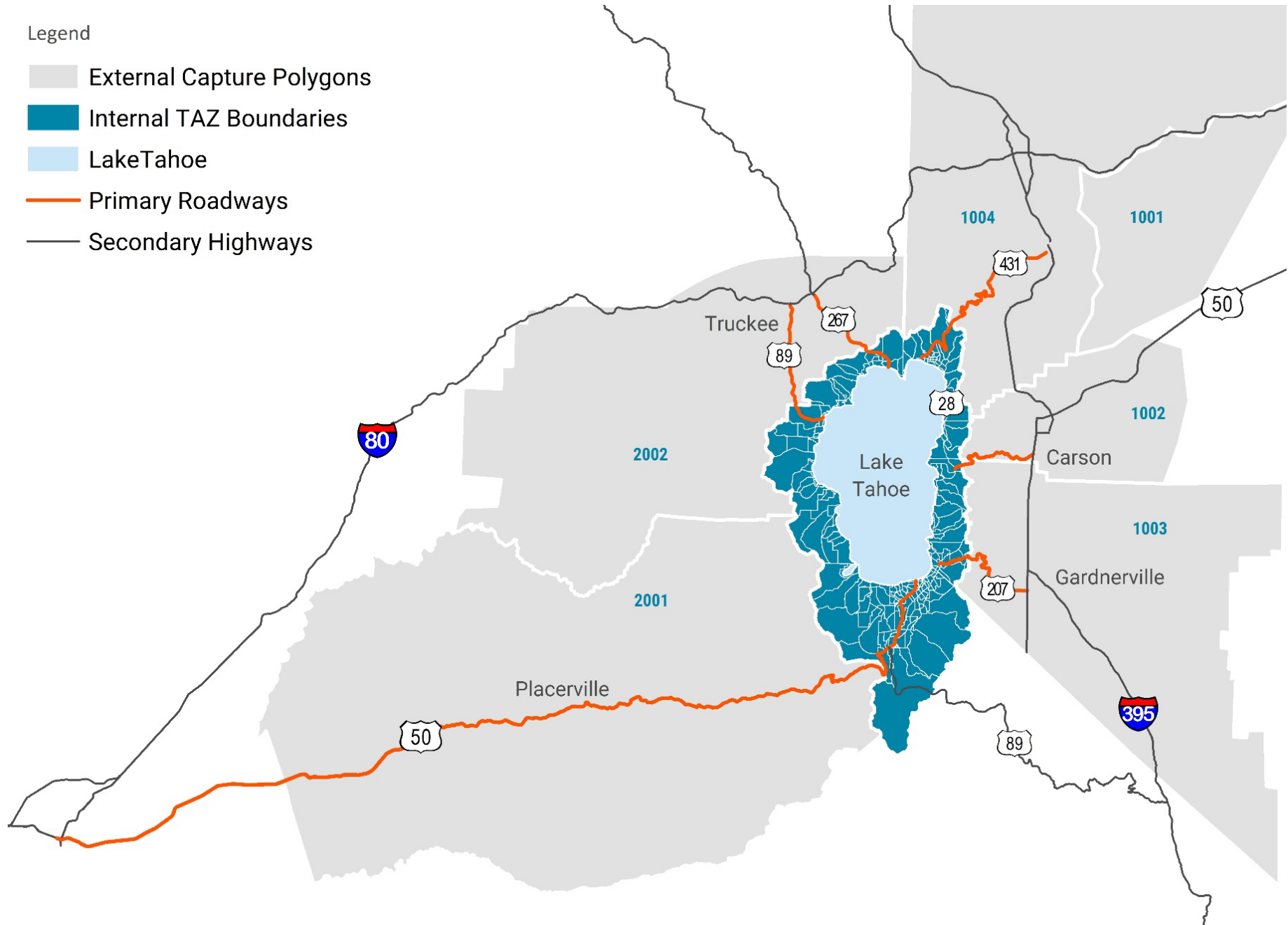
Visitor Home Locations

July

Less than 1,500

Medium (5,000 – 10,000)

High (Greater than 35,000)

July Trip Matrices

	Origin_Zone	Destination_Zone	Start_Date	End_Date	Aggregation	Subscriber_Class	Purpose	Time_of_Day	Count	Monthly_Count	Time_of_Week	Type
1												
17	17	239	20140705	20140727	WE	Long Term Visitor	NHB	H07:H10	2.06	24.72	Weekend	II
18	154	1004	20140705	20140727	WE	Home Worker	HBO	H10:H16	2.23	26.76	Weekend	IE
19	276	276	20140705	20140727	WE	Outbound Commuter	NHB	H00:H07	0.44	5.28	Weekend	II
20	2002	183	20140705	20140727	WE	Inbound Commuter	HBW	H00:H07	1.46	17.52	Weekend	EI
21	235	235	20140705	20140727	WE	Home Worker	HBO	H07:H10	3.15	37.8	Weekend	II
22	47	12	20140705	20140727	WE	Home Worker	HBO	H16:H19	1.79	21.48	Weekend	II
23	43	64	20140705	20140727	WE	Resident Worker	HBO	H19:H24	2.36	28.32	Weekend	II
24	500	121	20140705	20140727	WE	Long Term Visitor	NHB	H19:H24	0.02	0.24	Weekend	II
25	38	39	20140705	20140727	WE	Long Term Visitor	HBO	H00:H07	2.99	35.88	Weekend	II
26	1002	2002	20140705	20140727	WE	Long Term Visitor	NHB	H10:H16	488.93	5867.16	Weekend	EE
27	128	109	20140705	20140727	WE	Long Term Visitor	NHB	H07:H10	1.42	17.04	Weekend	II
28	227	500	20140705	20140727	WE	Long Term Visitor	NHB	H07:H10	0.05	0.6	Weekend	II
29	1004	203	20140705	20140727	WE	Short Term Visitor	HBO	H07:H10	11.77	141.24	Weekend	EI
30	262	262	20140705	20140727	WE	Resident Worker	NHB	H19:H24	6.05	72.6	Weekend	II
31	169	2002	20140705	20140727	WE	Resident Worker	NHB	H10:H16	2.77	33.24	Weekend	IE
32	1002	74	20140705	20140727	WE	Short Term Visitor	NHB	H07:H10	2.14	25.68	Weekend	EI
33	10	75	20140705	20140727	WE	Long Term Visitor	NHB	H00:H07	1.79	21.48	Weekend	II
34	201	2001	20140705	20140727	WE	Long Term Visitor	NHB	H19:H24	14.03	168.36	Weekend	IE
35	217	500	20140705	20140727	WE	Resident Worker	NHB	H00:H07	0.03	0.36	Weekend	II
36	33	219	20140705	20140727	WE	Long Term Visitor	NHB	H10:H16	2.37	28.44	Weekend	II
37	287	287	20140705	20140727	WE	Home Worker	HBO	H07:H10	78.15	937.8	Weekend	II
38	14	1003	20140705	20140727	WE	Long Term Visitor	NHB	H07:H10	61.75	741	Weekend	IE
39	223	270	20140705	20140727	WE	Long Term Visitor	NHB	H10:H16	3.1	37.2	Weekend	II
40	13	220	20140705	20140727	WE	Long Term Visitor	NHB	H16:H19	4.58	54.96	Weekend	II
41	173	17	20140705	20140727	WE	Long Term Visitor	NHB	H10:H16	2.37	28.44	Weekend	II
42	2002	224	20140705	20140727	WE	Long Term Visitor	NHB	H07:H10	1.25	15	Weekend	EI
43	115	1003	20140705	20140727	WE	Home Worker	NHB	H16:H19	1.48	17.76	Weekend	IE

Cars entering Basin by travel group

Travel Group	Vehicles
Home Worker	🚗 = 25,000 Vehicles
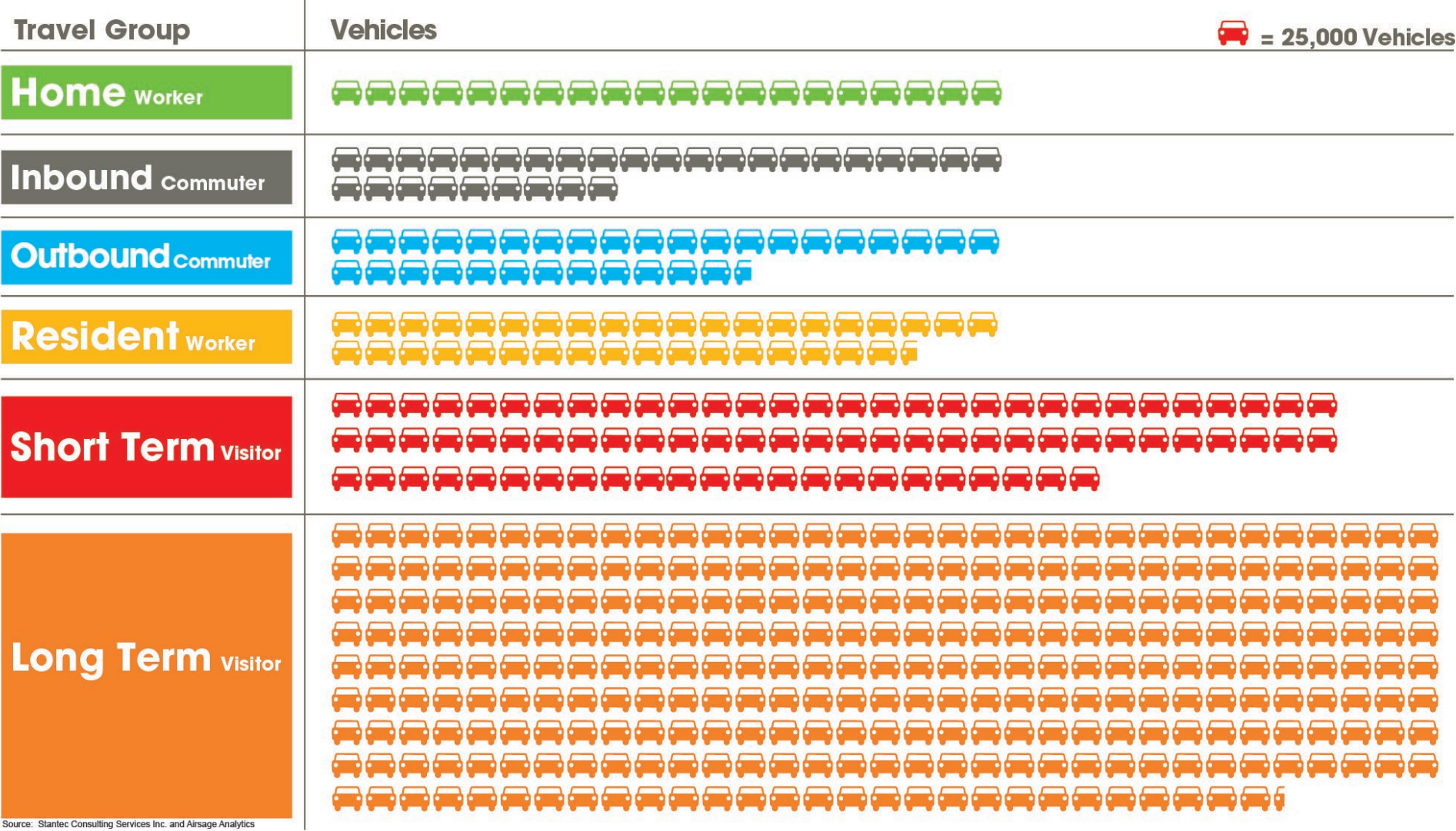
Source: Stantec Consulting Services Inc. and Airsage Analytics

Most Popular Destinations

HOT SPOTS

Activity density date, February 2014

Hot spots
Cold spots

Kings Beach
Incline Village
Sand Harbor
Tahoe City
Glenbrook
Tahoma
Zephyr Cove
Emerald Bay
South Lake Tahoe
Heavenly
Meyers
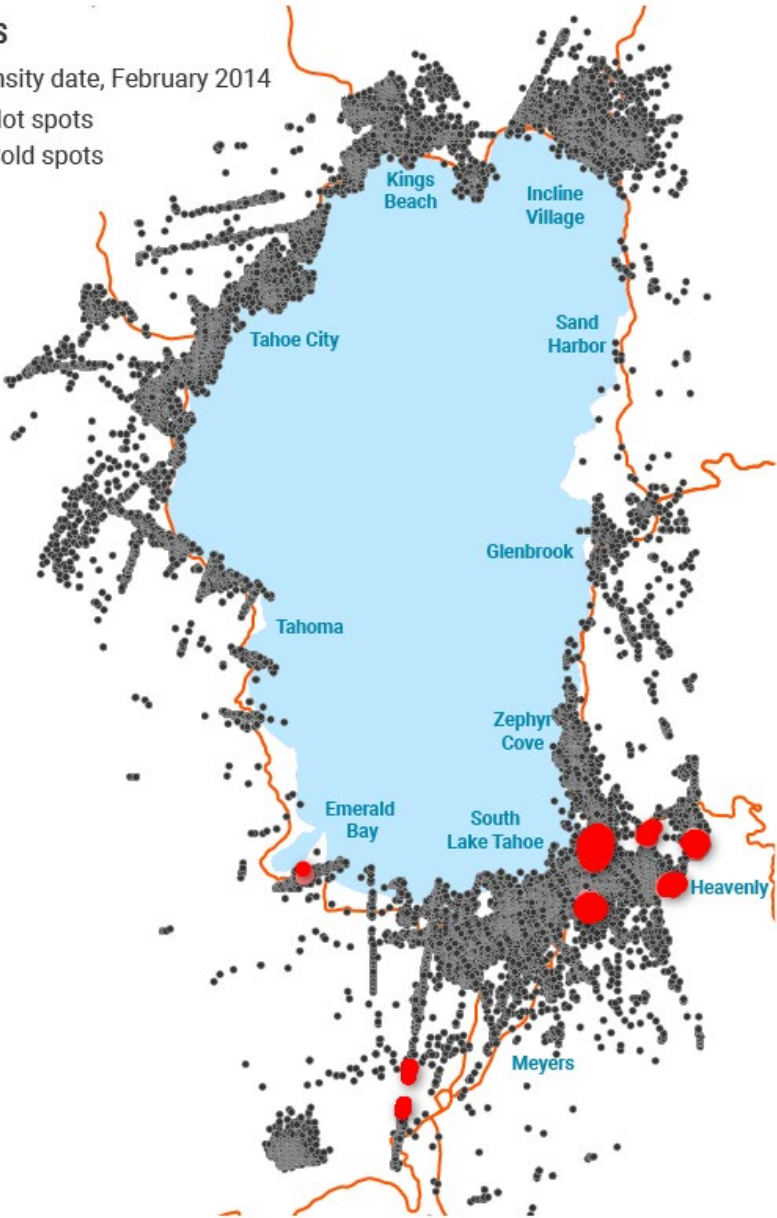
HOT SPOTS

Activity density date, July 2014

Hot spots
Cold spots
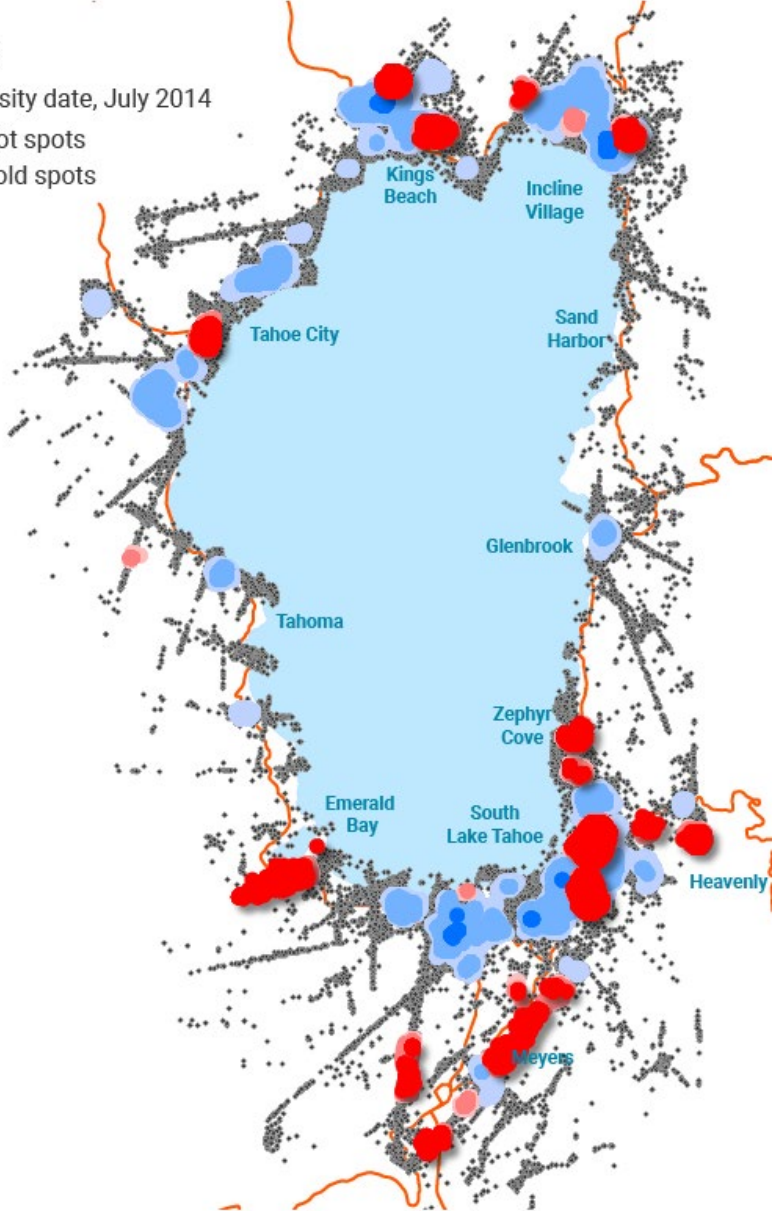
Kings Beach
Incline Village
Sand Harbor
Tahoe City
Glenbrook
Tahoma
Zephyr Cove
Emerald Bay
South Lake Tahoe
Heavenly
Meyers

Visitor Trips, February

4.7 Million

Visitor Trips,
July

11.8 Million

Transit falls short

Transit Ridership vs. Vehicle Trips

Summer ridership

1,497 – 7,428
12,579 – 37,137
74,219

Transit ridership 1.4% of all trips

7,428 transit trips vs. 1.6 million vehicle trips

Kings Beach
Incline Village
Tahoe City
Zephyr Cove
Emerald Bay
South Shore
Washoe State Park
Pioneer Trail
Upper Truckee

Emerald Bay parking congestion and safety concerns

25.6M
Annual Visitors 2014

"Perhaps for the first time we could see what our true visitation was…" - Carl Hasty, District Manager, Tahoe Transportation District

Transit Vision Summary

Putting it all together

Time Frame	0-1 years	1-5 years	5-10 years	10+ years
Transit Mode Split		5%	10%	20%
Layers of Service	Frequent, Local, Community, Summer, California Regional, Nevada Regional			
Supporting Infrastructure	Mobility Hubs	Transit Centers	Intelligent Transportation Systems	Improved Rider Facilities
Recommendations	Route Changes	System Changes/ Additions	Operation/Maintenance Facilities Expanded	
Auto Trips Removed		1.34 million	3.27 million	7.03 million

Putting it all together

Water Shuttle - Zephyr Cove to Tahoma
- S Introduce water shuttle
- M Increase frequency based on demand

Ferry - Tahoe City to South Lake Tahoe
- M Introduce ferry service
- L Increase frequency based on seasonal demand

Mobility Hub - Ski Run Hill
- M Create new bus turnaround and parking in conjuntion with Ferry service

Mobility Hub - Ponderosa
- S Create seasonal parking
- M Upgrade to Mobility Hub

Route F2 - Stateline to Meyers
- S Create FTN service level & merge with Route K
- M Add additional seasonal service
- L Add frequency

Route B - Meyers to Ponderosa
- I Create new route with interim destination at LTCC
- S Add frequency
- M Extend route to Ponderosa
- L Add summer frequency

See Figure 49 in the Transit Master Plan for a complete list of required infrastructure improvements.

US50 South Shore Corridor
PHASING OF TRANSIT PROJECTS
- I Immediate (0-1 year)
- S Short Term (1-5 years)
- M Medium Term (5-10 Years)
- L Long Term (10+ Years)
- ⊕ Mobility Hub
- ⊙ Gondola
- Ⓢ Ferry Dock
- Ⓟ Parking

Stantec

Route R1 - Stateline to Carson City then Reno Tahoe Airport
- S Add trips
- M Extend service to Reno
- L Add seasonal trips as required

Route D - Stateline to Heavenly
- I Create route
- M Add additional summer service

Route R2 - Stateline to Minden & Gardnerville then Reno Airport
- S Add trips
- M Extend service to Reno
- L Add seasonal trips as required

Heavenly Transit Center
- I Create turnaround for Route D and Route H

Route H - Heavenly Community
- I Create route
- M Add additional summer service

Stateline Transit Center
- S Arrange for parking in vicinity of the transit center
- M Upgrade to Mobility Hub

Heavenly California Lodge Transit Center
- I Create year round turnaround for Route D along with non-seasonal parking

Route J - Stateline to Ponderosa via LTCC
- M Create new route (remove Route 53)
- L Add summer frequency

Route C - South Y to Zephyr Cove
- S Route extended
- M Add summer service
- L Increase frequency and length of seasonal services

Legend:
- Frequent Transit
- Local Transit
- Community Transit
- Regional Nevada
- Regional California Trans Sierra
- Summer Shuttle
- Ferry
- Water Shuttle

US 50 South Shore Corridor Transit Impact Summary

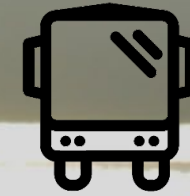|	
Annual Service Hours	162,200
Annual Operating Cost ($millions)	$17.4
Tota Fleet Requirement	86
Estimated Annual Transit Ridership (millions)	5.1
Annual Automobile Trip Reduction (millions)	2.4

Summary

41.4M
Vehicles entering
annually

1.4%
transit ridership as a
percent of all trips

18,725
existing parking spaces
Basinwide

25.6M
Annual Visitors 2014
Original estimate 8-10M

20
miles of existing
sidewalks

94
total miles of
existing bikeways
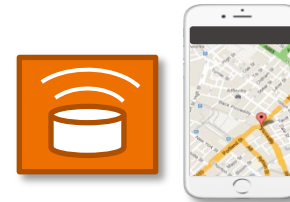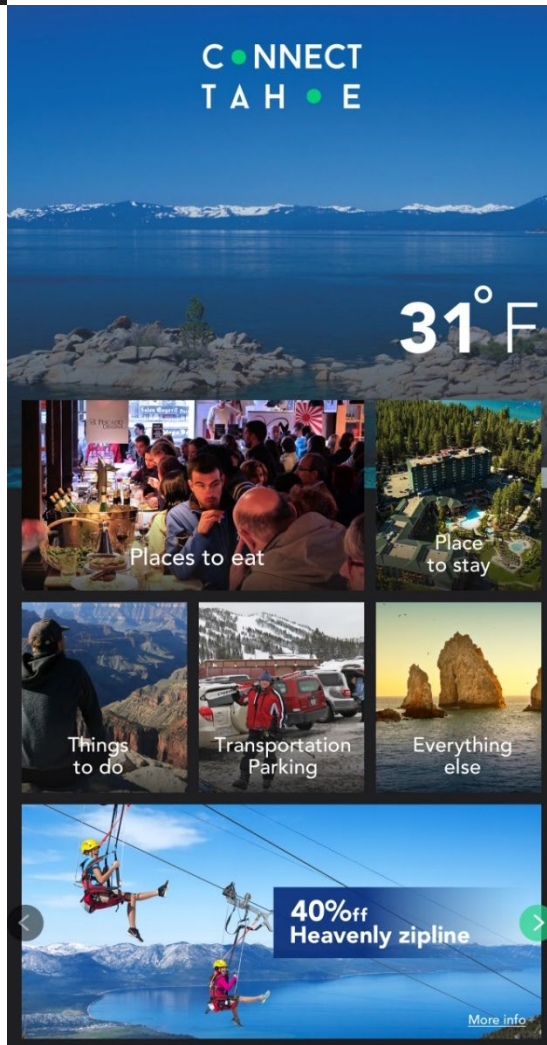
80M
person trips within
the Basin annually

What Now?

- Funding
- Emergency Management / DOT / ICT Coordination
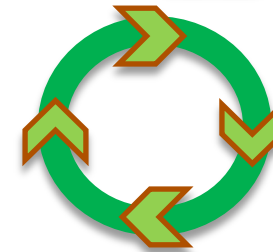- Shared Parking Management System
- Basinwide iOT Infrastructure Strategy

Internet of Things (iOT)

The "thing" a unique IP address that connects to the internet

Informed decision making about future strategy

User's ability to obtain near-real- time information

Analytics gathered from sensors, meters, and applications

Traffic Management Benefits

d: set distance

t_0: initial time

t_1: final time
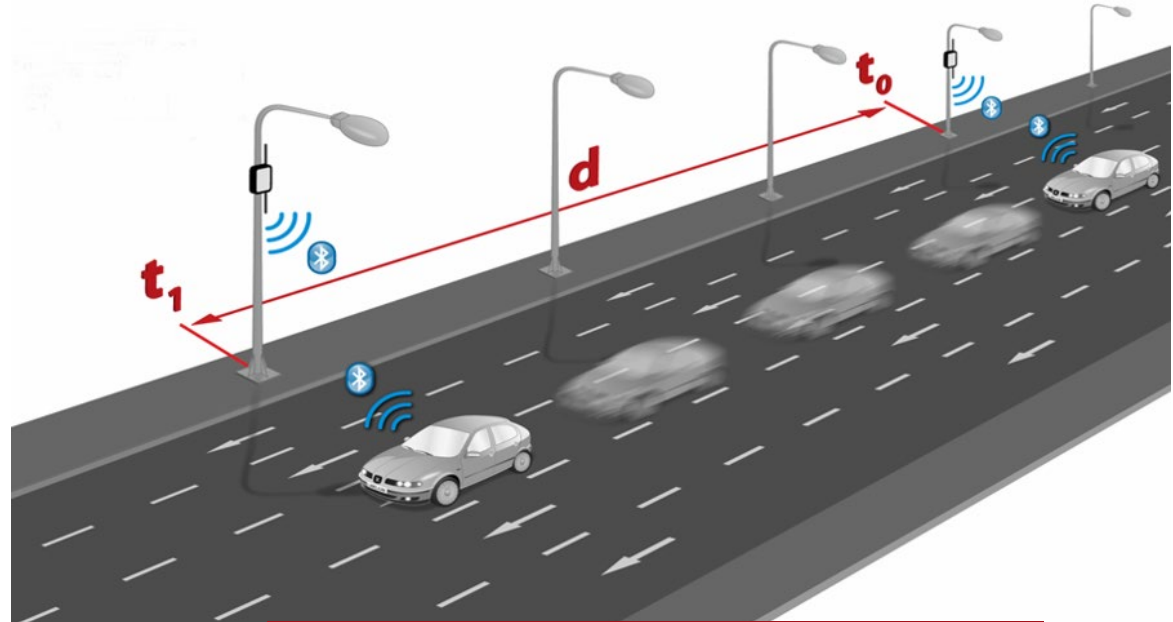
Integration of street lights and sensors in the traffic management system optimizes signals, increases fuel efficiency, reduces accidents and reduces vehicle time traveled.

Cars are tracked by sensors or cell phones allowing traffic management systems to identify speeds and densities and adjust lights in real time.

Smart Streetlights

- Efficient energy tracking and control

- Revenue generation potential

- Integration with telecommunication and traffic management systems

- Public safety
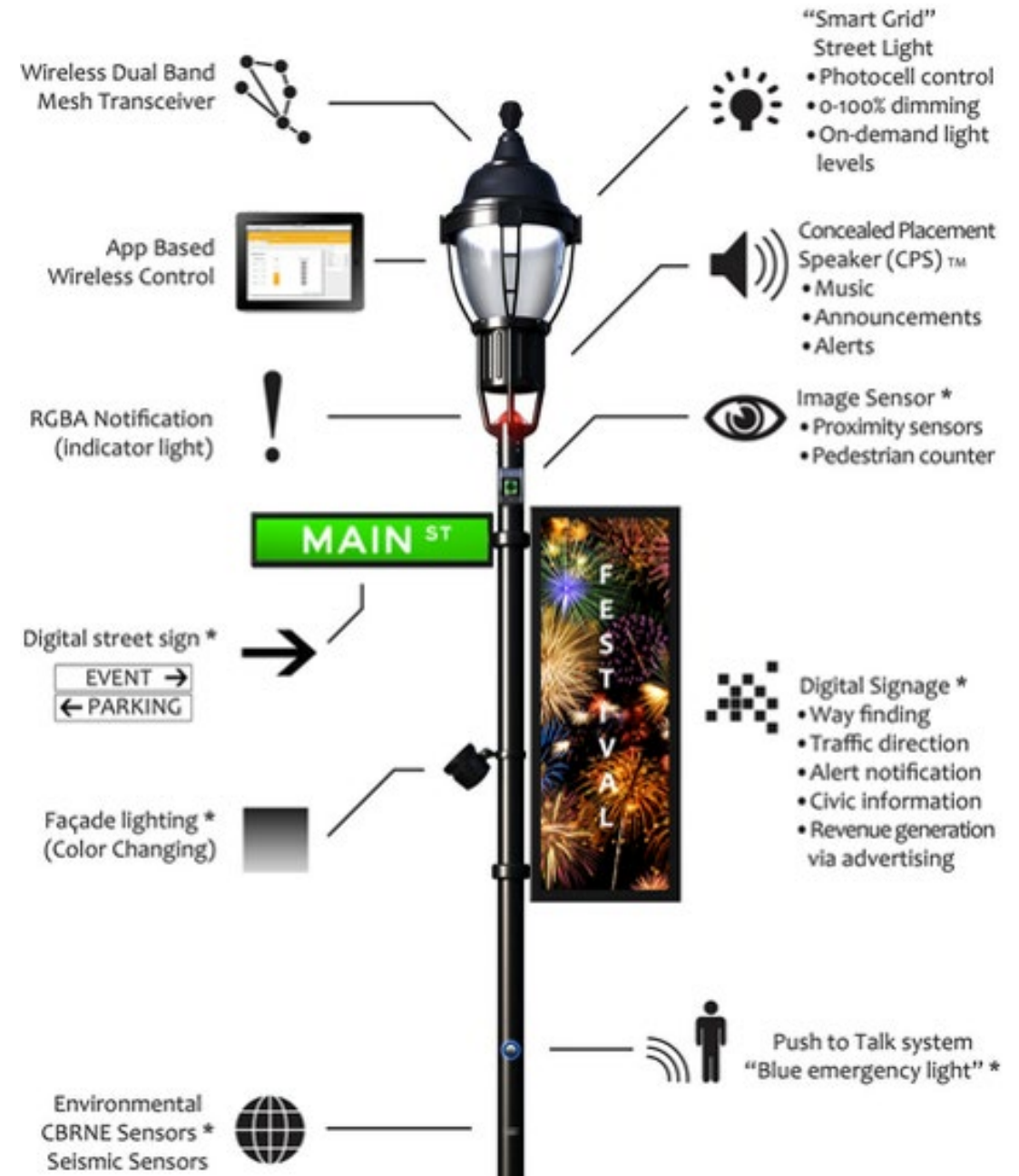
Thank you. Questions.

"…the water was not merely transparent, but dazzlingly, brilliantly so."
- a description of Lake Tahoe by Mark Twain, *Roughing It* (1871)

Bonzai Rock, Lake Tahoe/iStock