Metro NEASURE UP

Arterial Performance Measurement Program

ClearGuide Training

March 4, 2020



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OBJECTIVES

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Teach you the basics of using ClearGuide

- How to navigate the site
- Review the available data, report types, and performance measures

Give you some hands-on experience

 Clicking around in the site yourself is more memorable than only reviewing slides

Provide a tool for future reference

• This presentation, along with exercises, will guide you in future ClearGuide use

AGENDA

2:00 - 2:10	(10 min)	Introductions and class overview
2:10 - 2:30	(20 min)	ClearGuide admin and navigation
2:30 – 2:50	(20 min)	Hands-on follow instructor example demo
2:50 - 3:00	(10 min)	Review of ClearGuide functions and features
3:00 - 3:15	(15 min)	Example exercise (on your own)
3:15 – 3:30	(15 min)	Advanced features

QUESTIONS

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Purpose of ClearGuide:

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- Be able to assess mobility performance measures on arterial corridors
- Arterial performance measurement tool to support local agency and sub-regional operations and planning efforts
- Data-driven decision-making

Clear Guide (https://metro.iteris-clearguide.com/) or (https://RIITS.net)

- Online roadway performance monitoring tool (freeways and arterials)
- Data, performance measures, route congestion, map animations, etc.
 - Reports, charts, and export
- It uses HERE (www.here.com) real-time crowd-sourced data
 - Real-time continuous speed data every minute by short links (data is archived)
- It also includes manually collected traffic volumes on selected arterials (as part of Countywide Arterial Performance Measurement Baseline Analysis)
 - About 200 arterial corridors in County using 2017 and 2018 data
 - Some count data provided by local agencies

ClearGuide Differences from iPeMs

- Instant route data
- Simpler navigation
- Faster reports
- More frequent releases of updates and enhancements
- New before-after study capabilities on the Route Time of Day report

1. Creating and logging in to your account

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- If you have not already applied for an account, you can do that any time at the log-in page (click on "Create account")
- Once you have your account, enter your Username and Password and click "Login"

iteris Transportation Analytics Plaform		
If you are a new user, please use this button to create your account. You will automatically be approved if you use your work email. If it does not get automatically approved or a consultant needs access, please notify Eva or Celine.	LOGIN Email Password LOGIN	If you had an existing iPeMS account, we have already migrated your account information, routes, and data over to ClearGuide. To activate your account please reset your password.
	CREATE ACCOUNT FORGOT PASSWORD	

2. Home page

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- Once you login, it takes you to the ClearGuide home page. You can always get to this home page by clicking on the ClearGuide logo in the upper left corner on the "Home" button at the top right.
- To manage your account (e.g., change password), click on your email link in the upper right corner.



 Explore the options in the navigation bar to see the full functionality of ClearGuide

3. Map page

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- From the ClearGuide Home page, click on the real-time map. It will take you to the Map page.
- You can click on the Map Layers button (top left corner) to view different traffic measures on the map view.
- Viewing Waze incidents is a feature that will be released in March 2020.



4. Route Creation

- You can access route creation through the Routes button on the top or by selecting the Routes Layer on the Map screen.
 Once you are in the Route Creation page, zoom in (by using your mouse to scroll or the +/- button in the upper left corner of map) and pan around (by pressing down on the mouse left clicker and moving map around) to your desired roadway segment(s).
- To create a new route, go the specific beginning point of your desired roadway and right click on your mouse at a specific roadway link; select "Start route" on the pop-up menu to start your route segment. Then go to the ending point of your desired roadway and right click on your mouse at a specific roadway link; select "End route" on the pop-up menu to end your route segment. Click on the green "Create Route" button to create your route.



You can add waypoints to the markers to adjust the route. If you are satisfied with your route creation and want to continue, click on the blue "Create Route" button on the page.



- ClearGuide will now auto-populate the Route name with the arterial and direction. You may also change the name.
- Select "Share route"- 'Yes' if you want others to see your route or 'no' if you want it to remain private.
- Provide a description, if desired.

- You can also give it a Tag(s) for reference. In this case, I used "Santa Clarita", "Newhall", and "Canyon" to identify it as being related to the road and the city
- Then click on the blue "Next" button.



Finding and Choosing a Route (previously created by you or others)

- Go to ClearGuide Home page. Click on the "Routes" button or "Search Routes".
- You can search by route name or tags. To see all routes, select "Full Route List" in the bottom right corner.
- Search for Bouquet (Route ID number 100) and click on the 100 link. This was a route previously created. For this exercise, you can also do a "Keyword" or "Tags" search for "Santa Clarita" or "Newhall", which is the location of this particular route.



Route – Performance reports and Analysis reports



- Selecting the Route will show an overview including links to the Route Reports + Info Route Properties (route length, average speed limit, average freeflow speed, roadway type)
- Go to the "Route Reports + Info" section and select "Time Series".

- Select a "From" date from January 1, 2019 through December 31, 2019, Granularity of "Hour", and Metric of "Average Travel Time"
- Click on the "+ Advanced" option and select the "Day of Week" days of Monday through Friday (by de-selecting the "Su", "Sa", and "Holidays" options).
- Click on "Render" button. A loading circle will appear as the website processes your request.

iteris ClearGuide		МАР	ROUTES	♀ Lo:	s Angeles 🗸	† ~
ROUTE: NEWHALL-RAILROAD-BOUQUE	T CYN (NW) - SANT 🗸				INFO	REPORTS ~
Easflet © HERE	Timeseries	_		_		
Stevenson Ranch New II	Time Range 1D 7D 1M 3M 6M YTD 1Y From 01/01/2019 → 12/31/20 Metric 1 Average Travel Time ∨ Metric 2 None	019 ≡ Granula	Hour		~	
ROUTE PROPERTIES			Time Of	Day: All In	iclude Days: Mon,	Tue, Wed, Thu, Fri
Name Newhall-Railroad-Bouquet Cyn (NW) - Santa Clarita	TIME OF DAY DAY OF WEEK			ך		
Tags arterial, santa clarita	Su Su Ve	💙 Th 💙 Fr 🔾) Sa 🌔 Holidays			
Route Type Arterial	○ From 12:00 AM ∨ To 12:59 AM ∨	e.				
Length 5.42 mi	+ Add TOD Range					
Average Speed Limit 43 mph	ă (-				
Time Zone PST/PDT	- Hide Advanced			Output	Granh 🗸	RENDER
Freeflow Speed Sources HERE	• 1. • •			output	Graph	RENDER
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SIERRA HWY						
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MEADOWRIDGE DR						
SILVERADO						

 Move mouse cursor to the first highest travel time point on the graph (01/23/2019 at 6:00PM) – you will see the small box below the graph that indicates the data, time, and average travel time (35.922 minutes). The graph shows that the typical peak travel times are around 10 minutes (and these typically occur during the PM peak period), but on 1/23/2019 it had taken over 30 minutes to traverse this corridor. If it's hard to see what date it occur, use your cursor to highlight that area to zoom in. What happened that day?

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G + Sant Clari	Timeseries		Hour		
Ranch New 1	Time Range 1D 7D 1M 3M 6M YTD 1Y From 01/01/2019 ≡ → 12/31/201 Metric 1 Average Travel Time ∨ Metric 2 None	19 E Granularity	Hour	~	
			Time	Of Day: All Include Days: Mon, T	ue, Wed, Thu, Fri
Name Newhall-Railroad-Bouquet Cyn (NW) - Santa Clarita Tags arterial, santa clarita	+ Show Advanced			Output Graph 🗸	RENDER
Route Type Arterial	Route: Newhall-Railroad-Bouque	et Cyn (NW) - Sa	nta Clarita		=
Length 5.42 mi	TUE 01/01/2019 TO TUE 12/31/2019	MON, TUE, WED, THU	J, FRI		
Average Speed Limit 43 mph	40				
Freeflow Speed Sources HEPE					
	2 30				
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VALLE DEL ORO					
CARL CT	Closed Jan '19 Feb '19 Mar '19 Apr '19 May '19 Jun '19 Jr	ul '19 Aug '19	Sep '19	Oct '19 Nov '19 Dec	'19 Jan '20
RACE ST	- Averada	Travel Time			
PINE ST	Average 1	in a ver time			

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• Let's analyze this route for 1/23/2019. Go to the top right corner and select "Reports" and select "Contours"

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iteris ClearGuide	MAP ROUTES 💡 Los Angeles 🗸 🕴 🗸
ROUTE: NEWHALL-RAILROAD-BOUQUE	T CYN (NW) - SANT V
Storenon Name II	Timeseries Time of Day Time Range 1D 7D 1M 3M 6M YTD 1Y From 01/01/2019 ≡ → 12/31/2019 ≡ Granularity Hour ✓ Day of Week
	Metric 1 Average Travel Time V Metric 2 None V Time of Day + Day of week Metric 1 Average Travel Time V Metric 2 None V Time of Day: All Include Days: Mon, Tue, Wed, Thu, Fri
ROUTE PROPERTIES ^ Name Newhall-Railroad-Bouquet Cyn (NW) - Santa Clarita	+ Show Advanced Output Graph 🗸 RENDER
Tags arterial, santa clarita Route Type Arterial Length 5.42 mi Average Speed Limit 43 mph	Route: Newhall-Railroad-Bouquet Cyn (NW) - Santa Clarita TUE 01/01/2019 TO TUE 12/31/2019 MON, TUE, WED, THU, FRI
Time Zone PST/PDT Freeflow Speed Sources HERE EXITS / INTERSECTIONS \screwstarter	容 30 音
	Closed Jan 14 Feb 18 Mar 18 Apr 22 May 20 Jun 24 Jul 22 Aug 26 Sep 30 Oct 28 Dec 2 Dec 30 — Average Travel Time

- Select Date: 01/23/2019, Granularity of "hour" and Metric of "Speed"; then click on RENDER button.
- This is a speed contour plot of the route with the distance in as the vertical axis (or y-axis) with the time of day as the horizontal or x-axis. Traffic flows from the bottom of the plot to the top.
- Adjust the "Speed Threshold (mph)" to 5 mph red, 10 mph orange and so forth.

- Move the mouse cursor on the over the red blob. You will note that the popup gives you the time, link location, distance and speed at that time and location. Note that speeds speeds in the very red areas are very low (<3mph) north of Oak Ridge Dr.
- This graph shows that traffic began to back up starting around 4:00 PM, but why?

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An internet search reveals that on Wed 1/23/2019 in the afternoon there was a fatal collision involving an off-duty LA County Fire Captain and a Caltrans truck on the 14 freeway in Santa Clarita.

Animation Feature



5. ClearGuide Functions and Features

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- Real-time and historical processing (with algorithms and normalization) that includes:
 - o aggregation of the 1-minute HERE data into 5-minutes, 15-minutes, hourly, and daily data
 - o performance calculations
 - o link and route congestion measures (delay, queues, speeds, travel times, bottlenecks)
- Visualizations of the detailed route reports:
 - Export tables and charts into MS Word or Excel (txt, xls, pdf)
 - Create multiple path travel routes (e.g., monitor detours, commutes)

Detailed Route Reports



• HERE provides:

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- o A complete data set (speed data for all links for all time periods, no holes)
- An indication of data quality for each link for each time period. The more actual, currently observed probes behind the data, the higher the (quality) confidence score.
- o Link-based data (instead of point-based detector data)
 - Not measuring every vehicle but a sample of vehicles
 - Data not by lane by lane but in aggregate for a roadway direction
 - Provided on all roadways covered by HERE that are contracted by the State, which includes most major arterials
- o Data is in real-time and continuous, archived from start of system (2018)

• Features that are only available in iPeMs for now:

- o Bottlenecks (freeway) : identify bottleneck locations
- o User Delay Cost and Wasted Fuel Reports: for routes that have volume profiles
- o Animation:
 - animation feature to the time slider ("play back" speed conditions on any day in past)
 - replay the map and see what happened over time visually
 - show bottlenecks in the past to see the impact of bottlenecks (future add on)
- o Favorites:
 - save an animation, share it, replay it, download it as a video file and send electronically
- o Map Layers:
 - anomalies show how traffic compares in real-time to normal or comparted to a percentile range of past speeds
 - data quality layer shows the confidence scores of the data
 - bottlenecks layer (future add on)
 - base maps show aerial and map views
- Alerts (by email): for monitoring anomalies in traffic in real-time, alerts provide threshold-based alerting to specify and email users when issues occur and clear

• What ClearGuide and iPeMs is not:

- o Cannot do vehicle classification, distinguish transit vehicles, do vehicle occupancies, or analyze pedestrian or bicycle impacts
- o Cannot do lane by lane, any turn lanes, intersection analysis, signal timing, or accident/incident data

6. ClearGuide potential uses

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Develop a state of the system arterial report for your region

Do a Before/After study

> Evaluate response to an event

Access data quickly



Prioritize projects

Conduct a Corridor Study

> Address Council or stakeholder technical questions

> > Justify need for upgrading a signal system

Example Exercise (on your own) – instructions:

- Find and choose Route 131 (Artesia Bl (WB)- Bellflower). Pro Tip: From the ClearGuide map, click on the "Route" button click "SEARCH" and do a keyword search on the word "Artesia" or "Bellflower".
- Repeat Step 7 (page 18) from above in this presentation, BUT select the "Time of Day" option from the ROUTE REPORTS + INFO and select Time of Day)
 - Pick the date range from 01/01/2019 through yesterday's date
 - Select 'Average Travel Time' as the "Metric"
 - Select 'Hour" as the Granularity
 - Select "Show More" and select only non-holiday weekdays (Mo-Fr)
 - For Statistics select "Median (5th, 95th)".
- Answer these questions:

- 1. What is the peak hour for travel?
- 2. What is the median travel time during that hour?
- 3. What is the 95th percentile travel time during that hour (i.e., the green line)?
- Now go to Reports (Top right) > Time Series from the pull-down menus at the top of the page
- Answer the question:
 - 4. What date and hour of the day did the slowest travel time occur? What was the slowest travel time?
- Now go to Reports > Contours for the date that was identified in the question #5 and adjust the speed thresholds to 5mph intervals (5mph, 10mph, 15mph, and 20mph)
 - 5. Where and when did the slowest speeds occur on the selected date found in #5? (Note: These would be the darkest red color)
 - 6. For this general location, at what cross street did this bottleneck begin? (Note: traffic flows from the bottom of the plot to the top, so the bottleneck would be where the red or yellow colors end and green, faster speeds begin).

- 7. How long did this bottleneck last (from time, to time)?
- 8. What do you think influenced (possibly caused) this bottleneck?

7. ClearGuide Advanced Features

• Monthly Contours

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- User Delay Cost and Fuel Cost (future metric on reports)
- Top bottlenecks (future add on)
- Reliability Index (future add on)
- Map Animation (Speed) & Favorites
- Alerts (future add on to be released in March 2020)
- Area-wide Performance Overview
 - Route Performance Reports (overview of multiple routes performance, including arterial LOS)
 - o Report Card (overview of travel times and speeds for AM, Midday, and PM Peaks
 - Time Comparison (compare two different date ranges of performance for multiple routes)

Monthly Contours

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Reports > Monthly Contours (Use Artesia BI Example from above)

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ROUTE: ARTESIA BL (WB) - BELLFLOWER	۲ ۲						INFO REPORTS V
+ Bellflower	Monthly Contours	Shaw Dates					
Lakewood Bivd	Month April 2019 =	MONDAY	Average Speed V	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
ROUTE PROPERTIES Artesia BI (WB) - Belifiower		1	2	3	4		6 1
Description Artesia Blvd through Bellflower Tags arterial, bellflower Route Type Arterial	7	8	9	10	11	2	13
Average Speed Limit 40 mph Time Zone PST/PDT Freeflow Speed Sources HERE	14	15	16	17		9	20
EXITS / INTERSECTIONS V	21	22	23	24	25		27
	28	29	30 1 10 1 10 10 10 10				
	Average Speed (mph)	5 10 15	20				

Area-Wide Performance Overview

- Route Performance Reports: Routes > Performance
- Click on "SHOW ADVANCED" to select times of day and days of week to include in the reports

iteris ClearGuide	MAP ROUTES Q Los Angeles V
	REPORTS ~
Route Performance	Set date range. Goes back to Jan 1, 2018.
Time Range 1D 7D 1M 3M 6M YTD 1Y From 02/24/2020 ⇒ 02/24/2020	
Metric 1 Average Speed V Metric 2 Average Travel Time V Metric 3 None	Select up to 3 metrics
Keyword Tags 710 mip 8	All Any
Fair Oaks SB California to Huntington Dr N Fair Oaks NB Huntington to California SB Rosemead Mission to 10 × NB Rosemead 10 to misssion SB Walnut Grove Mission to Rush N Walnut Grove Rush to Mission Rosemead × NB San G Routes SB San Gabriel Rosemead N WB Garvey Rosemead × EB Garvey Rosemead × WB Valley Rosemead × EB Val	Gabriel Rosemead Clear All
	Set time of day & day of week filters
TIME OF DAY DAY OF WEEK	
Su Mo Tu We Th Fr Sa Holidays	
+ Add TOD Range	Select render once you've finished selecting options
- Hide Advanced	Output Table V RENDER
Route Name	Average Travel Time (mins) Length (mi) Tags
EB Cesar Chavez (Lorena St to Vancouver Ave) 104 21.3	Select to see Route properties

Area-Wide Performance Overview

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• Report Card: Routes> Report Card

Route Name	^ ID	Average Speed AM (mph)	Average Speed MD (mph)	Average Speed PM (mph)	Average Travel Time AM (mins)	Average Travel Time MD (mins)	Average Travel Time PM (mins)	Length (mi)	Tags
EB Cesar Chavez (Lorena St to Vancouver Ave)	104	21.3	18.5	17.6	5.99	6.73	7.02	2.05	710 mip, arterial, cesar e chavez
EB E 3rd Street (Atlantic Blvd to Indiana St)	° 110	17.4	15.6	15	8.09	8.78	9.13	2.28	710 mip, arterial
EB Garvey Rosemead	167	22.9	21.1	19.4	5.61	6.06	6.6	2.12	710 mip, arterial
EB Valley Rosemead	165	22.5	17.9	18.1	3.03	3.75	3.67	1.1	710 mip, arterial
Fair Oaks NB Huntington to California	187	19.4	18.8	18.1	6.82	6.89	7.2	2.14	710 mip
Fair Oaks SB California to Huntington Dr	188	22.9	19.7	18	5.9	6.63	7.27	2.17	710 mip
NB Rosemead 10 to misssion	173	20.8	18.4	16.1	2.05	2.25	2.61	0.68	710 mip, arterial
NB San Gabriel Rosemead	170	25.2	22	16.9	3.07	3.37	4,47	1.22	710 mip, arterial
San Marino Huntington Dr Eastbound	47	28.8	26.6	25.6	6.32	6.75	6.98	2.97	710 mip, arterial
SB Rosemead Mission to 10	174	15.9	13.3	13.8	3.35	3.88	3.73	0.85	710 mip, arterial
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Area-Wide Performance Overview

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- Time Comparison: Routes> select Time Comparison
- Click on "SHOW ADVANCE" to select times of day and days of week) to include in the reports

Route Time Comparison							
Range 1 02/28/2019 ≡ → 02/28/2019 ≡ Range 2 02/01/20	20 \equiv \rightarrow 02/24/2020						
Metric Average Travel Time \vee							
Keyword OMy Routes Onl	Tags 7	10 mip 🗶		All Any			
Fair Oaks SB California to Huntington Dr Fair Oaks NB Hunt NB Rosemead 10 to misssion SB Walnut Grove Mission to R Routes SB San Gabriel Rosemead WB Garvey Rosemead EB G EB E 3rd Street (Atlantic Blvd to Indiana St) WB 3d st (India EB Cesar Chavez (Lorena St to Vancouver Ave) San Marino H	ington to California X Walnut Grove I arvey Rosemead X W na st to Atlantic Blvd) Juntington Dr Eastbound	SB Rosemead Mission to 10 Rush to Mission Rosemead & B Valley Rosemead & EB V. WB Cesar Chavez (Vancouv	NB San Gabriel Rosemed alley Rosemead er Ave to Lorena St)	ad 🔀			
							Time Of Day: All Include Days: Mon, Tue, Wed, Thu, Fri
+ Show Advanced							Output Table V RENDER
Route Name	∧ ID	2/28-2/28	2/1-2/24	Diff	% Diff	Length (mi)	Tags
EB Cesar Chavez (Lorena St to Vancouver Ave)	104	6.38	6.05	-0.33	-5.16%	2.05	710 mip, arterial, cesar e chavez
EB E 3rd Street (Atlantic Blvd to Indiana St)	110	8.37	7.88	-0.49	-5.87%	2.28	710 mip, arterial
EB Garvey Rosemead	167	5.87	5.44	-0.42	-7.25%	2.12	710 mip, arterial
EB Valley Rosemead	165	2.98	3.05	0.07	2.39%	1.1	710 mip, arterial
Fair Oaks NB Huntington to California	187	5.9	6.04	0.14	2.35%	2.14	710 mip
Fair Oaks SB California to Huntington Dr	188	5.74	5.87	0.13	2.18%	2.17	710 mip