



January 5, 2024

To: Service Change Working Group

From: Christopher MacKechnie, Service Development Planner

Via: Lee Burner and Jessica Cignarella

Re: February 2024 Service Change
(Sunday, February 4, 2024 – Saturday, June 15, 2024)

-  **Changes highlighted in green impact our external customers.**
-  **Changes highlighted in Red do not impact our external customers.**
-  **Changes highlighted in yellow need confirmation and/or additional input.**

Purpose:

To obtain approval of the proposed service change for February 2024.

Goals:

1. Review service performance, customer feedback, and operator feedback related to the most recent service change to ensure adequate service is provided and meets customers' needs.
2. Prioritize strengthening service along High Quality Transit Corridors (HQTC), specifically via bus stop balancing, improved service levels, and expanded service hours.
3. Recommend service changes to obtain the KPI goals:
 - a. 85% On-Time Performance
 - b. 28 Passengers per Revenue Hour

Part I: Review of AUG23 Service Change

A. Schedule Problem Report Forms (updated)

We have received one schedule problem report form since the AUG23 service change document was implemented. An additional four operators provided oral comments to the Service Planning Manager related to schedule problems.

An operator provided two comments via submittal of Schedule Problem Report Form 07897:

- **Comment:** Delays caused by a lengthy traffic signal cycle at the intersection of Stearns Street and Los Coyotes Diagonal.
 - **Service Planning response:** A request was submitted to the City of Long Beach to investigate improving signal timing for bus operations.

- Service Planning response: We are investigating the removal of Stop #1767 – Stearns Street & Fidler Avenue NW – Routes 91, 172 – just before the intersection to improve bus operations as operators merge into the left turn lane to move from Stearns Street left onto Los Coyotes Diagonal.
- Comment: Heavy passenger loads on Route 172 at 3:15 PM in the inbound direction after picking up students at Bellflower Boulevard and Stearns Street.
 - Service Planning response: Ridership activity is under review and additional trips (or trippers) will be introduced if warranted and feasible.

B. Customer Comments

Customer comments were provided by CRC and include feedback received through Tuesday, October 10th. The following comments were incorporated in the FEB24 service change:

1. Comment: Request for bus to arrive earlier to account for large group of students that board at Orange Avenue and Alondra Boulevard and travel to Paramount High School. The students are regularly late and miss their 8:30 am school start time.
 - a. Service Planning change: Route 71 weekday AM schedule will be adjusted to better accommodate Paramount High School students school arrival times.
2. Comment: Request for bus departure times on outbound Route 172 to be altered to better meet with the Millikan High School PM dismissal times.
 - a. Service Planning change: The weekday PM Route 172 and Route 173 schedule will be adjusted to better match Millikan High School dismissal times.
3. Comment: Request for additional service around 7:10 am on outbound Route 101 due to overcrowding.
 - a. Service Planning change: An additional AM outbound trip on Route 101 to McBride High School will be added.
4. Comment: Commenter attests that Route 23 constantly runs late.
 - a. Service Planning change: Line 20 schedules were adjusted to reflect changing traffic conditions and to improve reliability and on-time performance. Route 23 inbound trips received one additional minute added to the running time. Schedule adjustments were made based on running time data from September, October, and November.
5. Comment: Buses laying over on Cowles Street, nearside, Santa Fe Avenue SW are blocking single occupancy vehicle driver views of the stop sign, causing a safety hazard.

- a. Service Planning change: Transit Customer Amenities (TCA) is coordinating with the City of Long Beach Public Works department to improve visibility on Cowles Street, nearside, Santa Fe Avenue. TCA is investigating to see if we can move the bus back a bit to make the stop sign easier to see.

C. Review of School Service

Trippers

Ridership activity on trips serving schools, including school trippers, was closely monitored, and analyzed to identify potential schedule refinement. In addition to the feedback received from operators and customers, ridership was collected via buses equipped with automatic passenger counters (APCs) and via data collectors that manually collect ridership data. Trips are organized below by block number with those that experienced a max load of 40 or greater shown in bold and colored yellow.

Table 1. School Tripper Ridership

Block	Route	Trip Start Time	Direction	Total Boardings	Max Load	School(s) Served
99-1	0092	7:15	Outbound	76	53	Wilson, Lakewood
99-2	0045	7:41	Outbound	30	29	Wilson
99-3	0092	7:45	Outbound	50	36	Wilson, Lakewood
99-4	0094	7:55	Outbound	44	38	Wilson
99-5	0094	8:05	Outbound	43	36	Wilson
99-6	0094	8:15	Outbound	43	40	Wilson
99-7	0191	7:47	Outbound	30	27	Cabrillo, Lakewood
99-8	0192	7:55	Outbound	34	27	Cabrillo
99-9	0191	8:10	Outbound	48	48	Cabrillo
99-10	0022	7:16	Outbound	33	23	Paramount
99-50	0094	14:00	Inbound	36	28	Wilson
99-50	0094	15:20	Inbound	59	51	Wilson
99-51	0094	14:18	Inbound	58	22	Wilson
99-51	0092	15:42	Inbound	32	24	Lakewood, Wilson
99-53	0061	15:25	Outbound	52	28	Poly
99-54	0172	15:44	Inbound	40	26	Millikan
99-55	0172	15:49	Inbound	33	26	Millikan
99-56	0172	15:55	Inbound	35	26	Millikan
99-57	0094	15:29	Inbound	29	29	Wilson
99-57	0192	14:07	Inbound	36	31	Cabrillo
99-58	0191	14:05	Outbound	48	36	Cabrillo
99-58	0191	15:46	Inbound	41	18	Lakewood, Cabrillo
99-59	0191	14:45	Inbound	55	41	Cabrillo
99-59	0191	15:37	Inbound	30	23	Cabrillo

All except one of the trippers currently operated have a maximum load greater than 60 percent of seated capacity with the other one tripper at half of seated capacity. The current level of utilization indicates that no trippers should be canceled at this time.

For reference, our standard 40' buses have a seating capacity of 38. Articulated buses, which are not normally used on school trippers, have a seating capacity of 57. Buses that are 35', which are also not normally used on school trippers, have a seating capacity of 36.

D. Overload Reports

Service Planning regularly monitors overload reports logged in TransitMaster by Service Delivery staff. When the same trip is overloaded on three or more unique instances, it may indicate regular overcrowding rather than a one-off occurrence. All submitted overload reports through Tuesday, November 6th were reviewed, with the following blocks experiencing three or more overload reports. Additional trips will be introduced to resolve these overloaded trips, as described in the service change part of this report, below.

Table 2. Overload Report Analysis

Block	Time Period	Route	Days Overloaded	Trip Start Time	Direction	Boardings	Max Load	School(s) Served
40-9	PM	45	6	15:31	Inbound	45	35	Wilson
40-11	PM	45	12	14:08	Inbound	54	32	Wilson
50-2	PM	61	3	15:20	Outbound	45	25	Poly
50-5	PM	61	5	15:28	Inbound	63	37	Jordan
50-12	PM	61	5	13:55	Outbound	69	45	Poly, Jordan
60-1	PM	61	4	15:40	Inbound	48	29	Jordan
60-7	AM	61	3	7:41	Inbound	58	35	Poly
60-9	PM	61	3	13:28	Inbound	66	30	Poly
90-4	PM	93	3	13:11	Inbound	65	43	Wilson
90-6	PM	93	6	14:42	Inbound	56	38	Wilson
90-7	PM	91	4	17:57	Inbound	65	48	CSULB
90-8	PM	92	4	14:32	Inbound	57	34	Wilson
90-10	AM	92	3	7:20	Outbound	32	24	Wilson, Lakewood
90-11	PM	92	3	15:02	Inbound	48	32	Lakewood, Millikan, Wilson
90-14	PM	91	8	14:07	Inbound	58	34	Lakewood, Millikan, Wilson

90-16	AM	93	5	8:10	Outbound	58	43	Wilson, Lakewood
90-16	PM	91	4	13:08	Inbound	65	33	Lakewood
99-50	PM	94	7	15:20	Inbound	43	39	Wilson
99-59	PM	191	3	14:45	Inbound	42	36	Cabrillo
100-3	AM	101	11	7:10	Outbound	43	34	McBride
100-4	PM	92	5	14:05	Inbound	52	35	Wilson
100-6	PM	101	9	13:05	Inbound			McBride
100-11	PM	103	3	15:11	Inbound	57	37	Lakewood
171-3	PM	171	9	14:58	Inbound	78	47	CSULB
190-6	AM	191	3	6:45	Outbound	66	47	Cabrillo, Lakewood
190-6	PM	191	4	14:52	Inbound	77	40	Cabrillo

E. Review of Route 131 Ridership

Due to Route 131 changes that were implemented with the JUN23 service change and continued in the AUG23 service change, Service Planning closely reviewed the route.

An analysis of APC data showed that Route 131 carries 751 customers on an average weekday, with 14 passengers per revenue hour on weekdays. On Saturdays, Route 131 carries 363 customers, with 9 passengers per revenue hour. On Sundays, Route 131 carries 207 customers, with 6 passengers per revenue hour.

Evening service was also closely examined given that it was newly introduced in June. Of the 751 average weekday boardings, 63 passengers boarded after 7:30 pm, with an average of seven (7) passengers per revenue hour during that time frame. An alternative service strategy to Alamitos Bay is proposed in the evening to improve efficiency. Service Planning proposes to terminate Route 131 service after 7:30pm daily and realign Route 121, allowing for continued service to Alamitos Bay Landing between 7:30pm and 11pm daily.

Table 3. Route 131 Average Ridership

Weekday				Saturday				Sunday			
Outbound		Inbound		Outbound		Inbound		Outbound		Inbound	
Trip Time	Boardings	Trip Time	Boardings	Trip Time	Boardings	Trip Time	Boardings	Trip Time	Boardings	Trip Time	Boardings
5:37	2	5:35	4	8:07	7	7:00	9	8:07	4	7:00	7
5:47	5	6:05	8	8:47	8	7:40	5	8:47	6	7:40	4
6:17	10	6:35	11	9:27	5	8:20	5	9:27	4	8:20	5
6:42	7	7:05	13	10:06	7	9:00	8	10:06	5	9:00	7
7:09	15	7:35	16	10:45	7	9:40	8	10:45	5	9:40	6
7:40	15	8:05	18	11:24	10	10:20	8	11:24	6	10:20	6
8:09	13	8:35	11	12:04	9	11:00	13	12:04	7	11:00	8

8:39	10	9:05	13	12:44	9	11:40	9	12:44	8	11:40	6
9:09	14	9:35	22	13:24	11	12:20	7	13:24	13	12:20	8
9:39	11	10:05	14	14:04	12	13:00	12	14:04	8	13:00	8
10:08	7	10:35	11	14:44	6	13:40	8	14:44	8	13:40	8
10:38	11	11:05	12	15:24	14	14:20	9	15:24	11	14:20	9
11:08	11	11:35	10	16:04	11	15:00	14	16:04	12	15:00	13
11:38	14	12:05	12	16:44	10	15:40	11	16:44	13	15:40	8
12:08	15	12:35	11	17:24	12	16:20	9	17:24	8	16:20	6
12:38	15	13:05	14	18:06	10	17:00	5	18:06	8	17:00	6
13:08	13	13:35	10	18:46	11	17:40	3	18:46	7	17:40	7
13:38	13	14:05	14	19:26	6	18:20	5	19:26	8	18:20	6
14:08	19	14:35	19	20:06	8	19:00	4	20:06	6	19:00	5
14:38	18	15:05	15	20:46	7	19:40	6	20:46	6	19:40	3
15:06	25	15:35	19	21:26	4	20:20	3	21:26	6	20:20	4
15:36	19	16:05	15	22:06	6	21:00	4	22:06	5	21:00	2
16:06	20	16:35	13	22:46	3	21:40	3	22:46	1	21:40	3
16:36	18	17:05	12								
17:06	14	17:35	11								
17:37	11	18:05	8								
18:08	9	18:35	6								
18:42	8	19:05	8								
19:13	8	19:35	5								
19:43	7	20:05	5								
20:13	6	20:35	4								
20:48	6	21:05	4								
21:18	4	21:35	4								
21:43	6										
22:13	4										
22:43	3										
Total	405	Total	370	Total	195	Total	167	Total	164	Total	144
Weekday Total	776			Saturday Total	363			Sunday Total	307		

F. Review of Late-Night Service

Under the AUG23 service change, an additional hour of service on weekdays was introduced on Line 20, Line 40, Route 61, Line 90, Route 121, Line 170, Route 171 (weekends), and Line 190. Service Planning analyzed the APC ridership of weekday late night service to identify changes in ridership that may warrant schedule adjustments following the expanded service hours. The following table shows the preliminary weekday ridership for the new service hours. Note that ridership was collected via APCs and because LBT does not yet have a 100 percent APC-equipped fleet, only weekday ridership could be collected.

Table 4. Weekday Late Night Service Ridership

Line or Route	Direction	Trip Start or Arrival Time	Average Ons	Max Load
22	Outbound	23:05	4	3
23	Inbound	23:25	9	5
46	Outbound	23:05	7	6
46	Outbound	23:35	2	2
46	Inbound	23:25	5	5
61	Outbound	23:05	33	12
61	Inbound	23:25	4	3
94	Outbound	23:05	5	4
93	Inbound	23:25	7	6
121	Outbound	23:05	8	5
121	Inbound	23:25	11	9
174	Outbound	23:05	0	0
173	Inbound	23:25	10	7
191	Outbound	23:05	6	4
191	Inbound	23:25	3	2

While most newly introduced late-night trips have low ridership, they still serve a need. Based on the current level of late-night ridership no additional service hours expansion is warranted at this time.

G. Review of Unproductive Service

The following is a list of the number of “unproductive” trips by route. For purposes of this table, “unproductive” means the maximum passenger load was less than five (5). Note most weekday trips on Routes 2, 8, and the Passport (37) were unproductive. For the purposes of this table, all trips throughout the day are included. The source is APC software. Passport only operates three days per week, so employees cannot use it to commute, and its service area is duplicated by the City of Long Beach’s free shuttle service. Also, the Passport is detoured during major events at the Queen Mary so our customers cannot use it to get to the Queen Mary at the times they most would want to go. Route 2 is partially duplicated by the City of Carson’s reactivated Carson Circuit and does not have a major trip generator at the south end of the line. Route 8 does not have a major trip generator at the west end of the line due to our current disagreement with Torrance Transit.

Table 5. Unproductive Trips

Day Type	Route	# Unproductive Trips	# Scheduled Trips	% Unproductive
Weekday	1	12	44	27%
Weekday	2	34	43	79%
Weekday	4	9	44	20%
Weekday	8	31	44	70%
Weekday	21	1	32	3%
Weekday	22	1	62	2%
Weekday	23		31	0%
Weekday	37	65	106	61%
Weekday	41	6	47	13%
Weekday	45		44	0%
Weekday	46		102	0%
Weekday	51	1	125	1%
Weekday	61	1	132	1%
Weekday	71		40	0%
Weekday	91		56	0%
Weekday	92		50	0%
Weekday	93		57	0%
Weekday	94	1	3	33%
Weekday	101	3	49	6%
Weekday	102	2	31	6%
Weekday	103	1	45	2%
Weekday	104	3	29	10%
Weekday	111	1	35	3%
Weekday	112		32	0%
Weekday	121	4	99	4%
Weekday	131	15	69	22%
Weekday	141		69	0%
Weekday	151	2	43	5%
Weekday	171		55	0%
Weekday	172		64	0%
Weekday	173		63	0%
Weekday	174	1	4	25%
Weekday	175		39	0%
Weekday	181	9	31	29%
Weekday	182	5	29	17%
Weekday	191	2	68	3%

Weekday	192		65	0%
Weekday	405		6	0%
	Total	210	2,011	10%

Part II: Future Plans

Headway Improvements

No routes were identified to receive an increase in headway (or frequency) on weekdays or weekends as part of this service change. However, as resources become available and we look forward to FY 2025, there are routes that operate less frequently than the baseline of every 30 minutes on weekdays and every 40 minutes on weekends. These routes are addressed below, and organized in order of which routes should first receive headway improvements.

- 1. Route 141 – Artesia Boulevard (Star Initiative)**
 - a. Presently 60-minute headway on weekends.
 - b. Recommendation: Improve to 40-minute headway on weekends.
- 2. Route 71 – Orange Avenue (Star Initiative)**
 - a. Presently 40-minute headway on weekdays and 45-minute headway on weekends.
 - b. Recommendation: Improve to 30-minute headway on weekdays and 40-minute headway on weekends – requires removal of service on New York Avenue.
- 3. Routes 91, 92, 93 – 7th Street/Bellflower Boulevard/Clark Avenue/Woodruff Avenue (Service Restoration)**
 - a. Presently 36-minute headway on each branch on weekdays.
 - b. Recommendation: Improve to 30-minute headway on each branch on weekdays.
- 4. Routes 181 and 182 – Magnolia Avenue and Pacific Avenue (Service Restoration & Star Initiative)**
 - a. Presently 60-minute headway, seven days per week.
 - b. Recommendation: Improve to 30-minute headway on weekdays and 40-minute headway on weekends.
- 5. Routes 111 and 112 – Broadway/Lakewood Boulevard/Clark Avenue (Star Initiative)**
 - a. Presently 60-minute headway on each branch seven days per week.
 - b. Recommendation: Improve to 30-minute headway on each branch on weekdays and 40-minute headway on each branch on weekends or combine both these routes into one.
- 6. Routes 101 and 103 – Carson Street/Lakewood Mall (Star Initiative)**

- a. Presently 40-minute headway on each branch on weekdays and 60-minute headway on each branch on weekends.
 - b. Recommendation: Improve to 30-minute headway on each branch on weekdays and 40-minute service on each branch on weekends.
- 7. Routes 102,104 – Willow Street/Spring Street (Star Initiative)**
- a. Presently 60-minute headway on weekends.
 - b. Recommendation: Improve to 40-minute headway on weekends.
- 8. Route 41 – Anaheim Street – Easy Avenue (Star Initiative)**
- a. Presently 40-minute headway on Easy Avenue on weekdays.
 - b. Recommendation: Improve to 20-minute headway on Easy Avenue on weekdays by converting all existing Route 45 trips to Route 41.
- 9. Route 151 – 4th Street (Service Restoration & Star Initiative)**
- a. Presently 40-minute headway on weekdays.
 - b. Recommendation: Improve to 25-minute headway on weekdays or improve to 30-minute headway on weekdays and extend service to VA Hospital per Star Initiative. Doing so would connect this route to several major trip generators: Wilson High School, the VA Hospital, and CSULB, with a goal towards increasing the productivity of this low ridership route.
- 10. Routes 1, 2, 4 and 8 – City of Carson (Carson Network Integration Study)**
- a. Presently 40-minute headway on weekdays.
 - b. Recommendation: Improve to 30-minute headway on weekdays.

The following table highlights the selected routes.

Table 6. Headway Analysis

Priority	Route	Existing Service Span		Proposed Service Span	
		Weekday	Weekend	Weekday	Weekend
1	141	22.5	60	30	40
2	71	40	45	30	40
3	91, 92, 93	12/36	20/40	10/30	20/40
4	181, 182	60	60	30	40
5	111, 112	30/60	30/60	15/30	20/40
6	101, 103	20/40	30/60	15/30	20/40
7	102, 104	30/60	60	30/60	40
8	41	10/20/40	15/30	10/20	15/30
9	151	40	40	25	40
10	1, 2, 4, 8	40	40	30	40

Route Restoration Analysis

Routes that were suspended due to the COVID-19 pandemic and are still suspended were analyzed, both in terms of their previous ridership and on-time performance. In addition, the areas in which the routes operated were examined to determine if there has been an increase in population or employment density or ridership generating developments along their alignments. The below table highlights the analysis of the selected routes.

Table 7. Suspended Route Assessment

Suspended Routes	Weekday (FY2019)			Buses Required	Vehicle Hours	Vehicle Miles	Additional Marginal Weekday Cost*
	Ridership	Passengers / Revenue Hour	Headway				
52	1,435	34	36	4	24	194	\$2,434
81	548	24	50	3	27	289	\$2,928
96	657	40	Varies	6	14	180	\$1,653
176	1,071	23	30	4	49	461	\$5,120
Total	3,711			17	114	1,125	\$12,135

* This cost will be updated when FY25 marginal cost information is provided to Service Planning from Finance.

No routes were identified for restoration because there is adequate replacement bus service operating on corridors adjacent to where the suspended routes operated. In addition, two routes were identified for permanent discontinuation under LBT's 2017 Star Initiative.

Based on the analysis highlighted here and LBT's ongoing dedication to connecting communities and moving people, Service Planning recommends incremental improvements to service span and minor adjustments to route schedules to improve on-time performance, to better serve the needs of essential workers within the LBT service area, and to continue to make everyday life better for our customers, particularly those in disadvantaged communities with the greatest need.

Part III: Proposed Service Changes for February 2024

Routes 1, 2, 4, 8 – City of Carson

Note that in early 2024, LBT will discuss the Carson Network Study and the Carson Circuit reactivation with the City of Carson to better understand how LBT can provide better service on these routes and potentially introduce new Sunday service.

Adjust Route 2 inbound trip from 2:22 pm to 2:27 pm departing from CSDH on weekdays and Route 2 inbound trip from 3:40 pm to 3:45 pm departing from FISE to better serve Carson High School.

Route 2 timepoint Figueroa Street at Sepulveda Boulevard will be changed to Figueroa Street at Carriagedale Drive to reflect the actual timepoint more accurately.

Temporarily relocate Route 4 stop #2062 at Carson Street and Vermont Avenue SE to Carson Street and Vermont Ave SW to accommodate long term (two year) construction. LBT coordinated with County of LA Public Works and Torrance Transit and the stop has been relocated.



Line 20 – Cherry Avenue / Downey Avenue

Weekday schedules were adjusted by 0 to 2 minutes to reflect changing traffic conditions and to improve reliability and on-time performance. Schedule adjustments were made based on running time data from September and October.

Passport (Route 37)

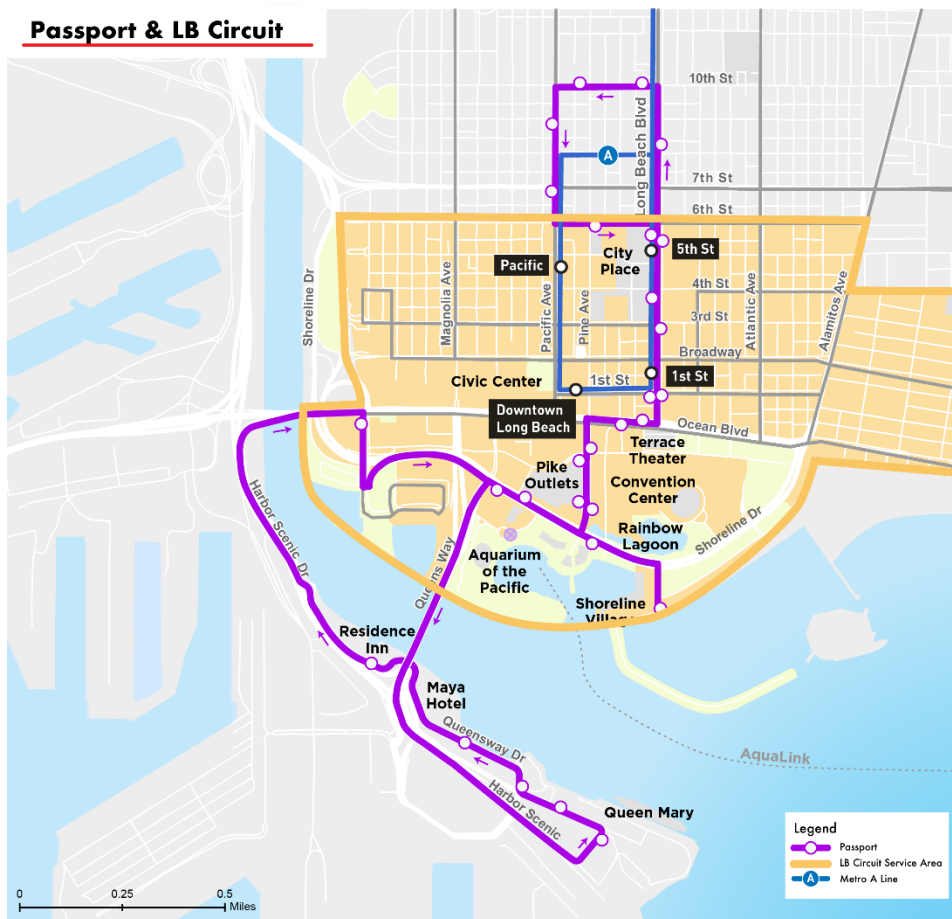
Due to low ridership and limited resources, reduce headway from 15 to 30 minutes. The City of Long Beach is providing complimentary micro-transit service which likely competes for ridership with the Passport during its limited operating hours. The Long Beach Circuit operates Thursday to Friday from 4pm to 10pm, Saturday from 12pm to 10pm and on Sunday from 12pm to 6pm. The map below shows the Passport route along with the shared LB Circuit service area. The LB Circuit provides direct rides on demand to all Passport stops in Downtown Long Beach area with the exception of the Queen Mary, Residence Inn & Maya Hotels, and bus stops north of 6th St. Additionally,

the LB Circuit provides a wider coverage area than the Passport, extending to Cesar Chavez Park to the west and to Junipero Ave to the east.

Passport ridership has been closely monitored by TSD. The productivity ranges between 5 to 9 passengers per vehicle hour which is extremely low for a route that operates with high frequency of every 15 minutes. The Passport ridership is almost to the level where all customers could be served by micro-transit. The proposed change will save 23.2 hours per day which will be reallocated to address overcrowding issues on other routes.

Table 8. Passport Ridership from TSD

Day	Avg Ridership Aug 25 - Oct 15	Vehicle Hours	Passengers Per Vehicle Hour
Friday	361	58.12	6
Saturday	520	61.23	9
Sunday	320	61.23	5



Line 40 – Anaheim Street / Easy Avenue

Reduce running time on Routes 41 and 45 inbound trips from Long Beach Boulevard to Santa Fe Avenue by one (1) minute and add one (1) minute on Route 45 from Santa Fe Avenue to Cowles Street.

To improve on-time performance, all outbound Line 40 trips leaving ANLB between 2:14 pm and 4:14 pm on weekdays will be shifted back five (5) minutes to allow for more recovery time at CSULB.

Reduce Route 46 running time at night from CSLB to ANPC by two (2) minutes, with outbound set at six (6) minutes for all trips after 6 pm.

Weekday and Saturday schedules were adjusted by 0 to 2 minutes to reflect changing traffic conditions and to improve reliability and on-time performance. Schedule adjustments were made based on running time data from September & October.

To better match service with ridership demand, the combined Routes 41, 45, and 46 weekday midday service between Anaheim Street at Long Beach Boulevard and Anaheim Street at PCH will be reduced from every 10 minutes to every 12 minutes. Routes 41 and 45 service between Anaheim Street at PCH to CSULB will be reduced from every 20 minutes to 24 minutes. The Route 41 segment along Easy Avenue will improve from every 40 minutes to every 24 minutes during the weekday midday period and from every 40 minutes to every 20 minutes during the weekday peak period by **upgrading all short-turn Route 45 trips to the full length Route 41.**

Before 6 am on weekdays, Route 46 service was reduced from 20 to 30 due to tow ridership.

Route 51 – Long Beach Boulevard

On weekdays, due to low ridership (with max loads less than 10 customers), the headway between 5:45 am and 6:45 am will be reduced from every 15 minutes to every 20 minutes. One round trip will be removed.

Before 6 am and after 7 pm on weekdays, Route 51 service was reduced from 20 to 30 due to low ridership.

Route 61 – Atlantic Avenue

Due to overcrowding, on weekdays two additional inbound trips will be added between 2:11 pm and 3:08 pm, and the headway will improve from every 15 to every 10 minutes.

Due to overcrowding, on weekdays one additional inbound trip will be added between 8:05 and 9:05 am (arriving times at TMLG), and the headway will be every 10 minutes throughout this time instead of every 15 minutes.

We have received overload reports from three different blocks during these time frames as well as feedback from the operator of block 60-3.

Before 6 am on weekdays, Route 61 service was reduced from 20 to 30 due to low ridership. Some weekday trips now enter service on Atlantic at Anaheim outbound and on Atlantic at Artesia inbound.

Route 71 – Orange Avenue

After investigating a customer comment, move the first inbound trip and 7:10 am outbound trip back 10 minutes to ensure students can get to Paramount High School on time.

Line 90 – 7th Street

Add two outbound weekday trippers on Route 94 leaving TMLE at 7:25 am and 8:35 am. The outbound Route 91 trip leaving downtown at 7:30 am currently has one overload report. The 8:40 am outbound Route 93 trip currently has a max load of 47 customers, and we have received feedback from the operator about it being overcrowded.

Running time will be reduced on Route 93 between LKHD – CKAR from 10 to eight (8) minutes from 5:30 pm to 9:30 pm and from eight (8) minutes to six (6) minutes after 9:30 pm.

Line 100 – Carson Street – Willow Street

Move 2:20 pm westbound trip from WLLK to 2:25 pm to better serve Reid High School.

Add outbound Route 101 tripper leaving FE25 at 7:05 am. The trip leaving FE25 at 7:10 am has had multiple overload reports and an operator has also provided similar feedback to Service Delivery staff.

The 2:21 pm inbound weekday Route 103 trip will leave five (5) minutes earlier to better meet the early dismissal time (2:01 pm) at Lakewood High School.

To improve layover time, the 2:55 pm outbound weekday Route 102 trip, 4:25 pm outbound weekday Route 104 trip, and 4:30 pm outbound weekday Route 101 will all leave five (5) minutes later.

The 7:50 am weekday outbound Route 102 trip will be moved to 7:45 am to reduce bus bunching.

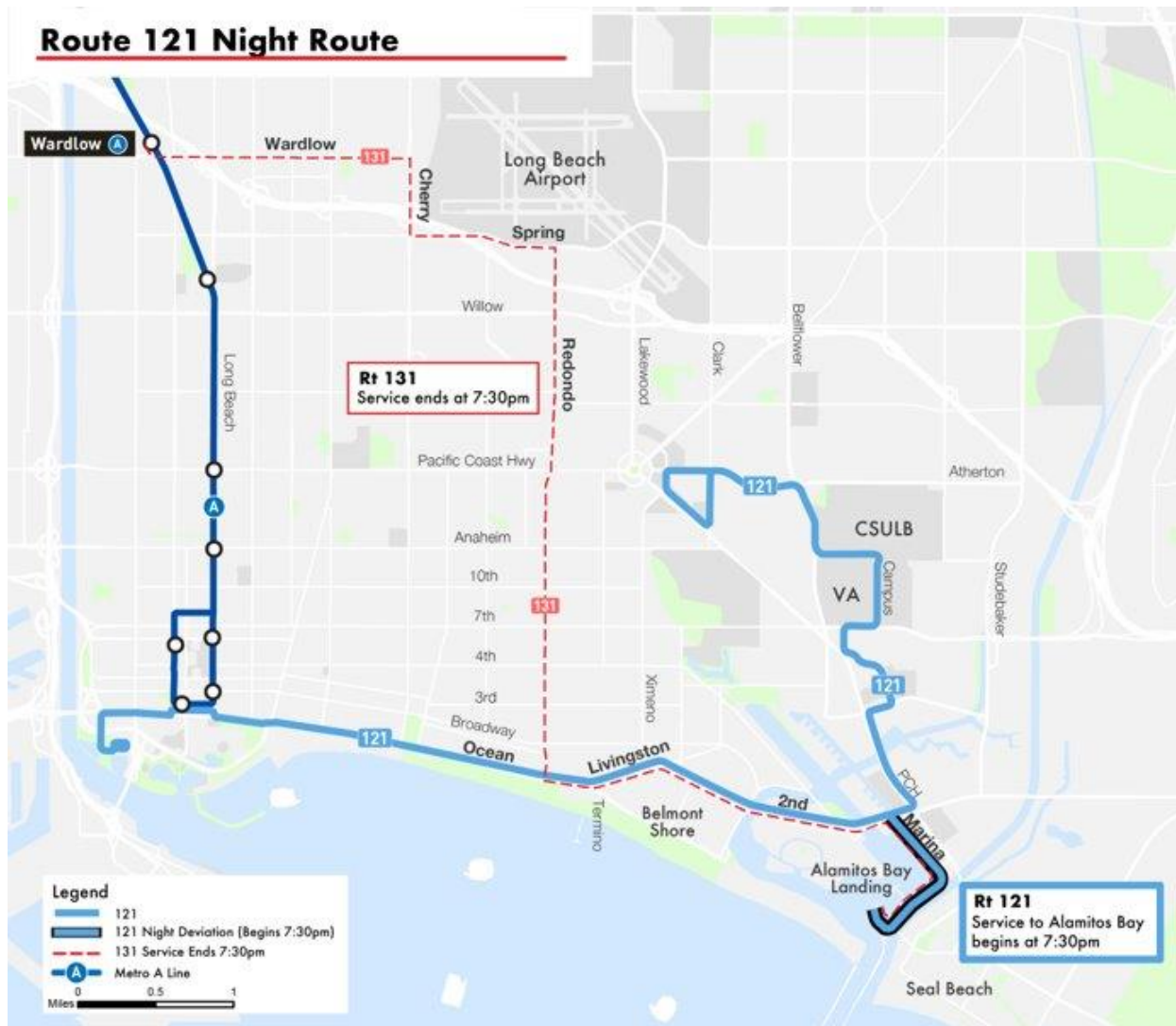
Line 110 – Lakewood Boulevard – Broadway – Clark Avenue

To improve on-time performance, the Broadway at Redondo Avenue timepoint will be removed.

Route 121 – 2nd Street/Belmont Shore

Add two additional trips from PCCL to CSLB on weekdays at 7:15 am and 8:55 am due to overcrowding. The trips directly after these new trips have a max load of 37 and 62 customers.

After about **8:30** pm daily, Route 121 will divert to Alamitos Bay Landing via Marina Drive. See the map below for details.



Route 131 – Redondo Avenue

An assessment was conducted to identify the impacts of no longer interlining Routes 131, 181, and 182 at Wardlow Station. Not interlining these routes would require two additional peak buses, 0.6 additional daily revenue hours, and 14.5 additional daily revenue miles. This change would also require customers who currently have a one-seat ride from Routes 181 and 182 to Route 131 to have to transfer. Service Planning recommends maintaining the current interlining of these three routes.

Due to extremely low ridership – fewer than 10 passengers per service hour on weekdays - evening service on Route 131 will be discontinued (**after 8:00 pm**). Alamitos Bay Landing will be served by Route 121 after about 7:30 pm daily using 35' BEBs.

Approximately 84 daily customers will have an additional 10 minutes of travel time due to the alignment change after 8:30 pm.

Reduce running time by one (1) to two (2) minutes from 2NPK to 2NMA at all times for all days to minimize the number of early departures from 2NMA.

Weekday, Saturday, and Sunday schedules were adjusted by 0 to 4 minutes to reflect changing traffic conditions and to improve reliability and on-time performance. Schedule adjustments were made based on running time data from September and October.

Route 141 – Artesia Boulevard

Weekday and Saturday schedules were adjusted by 0 to 2 minutes to reflect changing traffic conditions and to improve reliability and on-time performance. Schedule adjustments were made based on running time data from September and October.

Route 151 – 4th Street

No service changes.

Line 170 – PCH – Studebaker Road – Palo Verde Avenue

The weekday outbound Route 172 trips leaving TMLF at 1:15 pm and 2:45 pm were moved five (5) minutes later to better match Millikan High School dismissal times. This change requires inbound Route 173 trips on weekdays leaving NWST at 11:35 am and 12:59 pm to be moved five (5) minutes later to avoid congestion at the Transit Gallery.

Relocate Route 173 timepoint from Studebaker Road at Atherton Street to Atherton Street at Bellflower Boulevard in response to the Studebaker Road improvements.

Add an outbound tripper on Route 173 leaving downtown at 7:25 am. The next departing Route 173 trip, leaving downtown at 7:30 am, has a max load of 52 customers.

Add one additional inbound Route 172 trip on weekdays leaving PVSP at 14:50.

Weekday and Saturday schedules were adjusted by 0 to 2 minutes to reflect changing traffic conditions and to improve reliability and on-time performance. Schedule adjustments were made based on running time data from September & October.

Routes 171/175 – PCH / Cabrillo / CSULB / Seal Beach

Due to overcrowding, add three additional inbound Route 175 trips on weekdays leaving CSAV at 1:44 pm, 3:04 pm, and 3:24 pm. The trips directly after show max loads of 45, 45, and 39 customers.

Convert Route 175 trips leaving TKPK between 2:10 pm and 4:10 pm inclusive on weekdays to Route 171 to Seal Beach to improve on-time performance (buses are leaving CSULB late) and to improve service to Seal Beach during this time frame from every 40 minutes to every 20 minutes. This benefits customers by providing more service along the full length of the line.

Due to overcrowding, improve outbound frequency from 7:30 am – 8:30 am from every 20 minutes to every 15 minutes. One additional outbound trip will be added. The max loads of trips in this period are 50, 41, and 46 customers.

Add a new Route 171/175 stop westbound at PCH at Cherry Avenue NE adjacent to the storage facility to reduce congestion at the existing stop in front of the Rally's.

The 6:26 am Route 175 weekday inbound trip will be removed due to low ridership (9 boardings, 6 max load). The adjacent Route 171 trips will be adjusted to create a 30-minute headway inbound at this time.

Remove ANPC as a timepoint as it is too close to CSAV and PCXO. All reliefs will happen at PCCH.

Relocate PCST timepoint from Studebaker Road to 2nd Street to improve connections with Route 121 and OCTA Route 1.

Line 180 – Magnolia Avenue/Pacific Avenue

The weekday Route 181 inbound trip leaving WRST at 3:01 pm will now leave at 3:06 pm to improve connections with the dismissal time at Lafayette Elementary School and the 3:35 pm outbound Route 181 trip will now leave at 3:40 pm to ensure adequate operator layover time.

Line 190 – Santa Fe Avenue – Del Amo Boulevard – South Street

Add outbound Route 191 tripper leaving TMLE at 6:40 am or Del Amo Station at 7:23 am. The Route 191 trip directly behind this tripper has a max load of 45 customers.

Route 405 – UCLA Express

No service changes.

Special Holiday Schedule on Memorial Day

A Special Holiday Schedule will be operated on Memorial Day. As has been done in years past, service will generally operate every 30 minutes on the trunk portion of routes and every 60 minutes on the branches. Service start and end times for each route may vary on this schedule. The Passport will not operate on Memorial Day.

Running Time

Schedules were adjusted to reflect changing traffic conditions and to improve reliability and on-time performance. Schedule adjustments were made based on running time data from September, October, and November running time adjustments were completed on the following routes:

Weekday – 21, 22, 23, 51, 61, 71, 91, 111, 112, 131, 141, 171, 172, 173, 174
 Saturday – 61, 131, 141, 171, 172, 173, 174
 Sunday – 71, 131, 171

Table 9. Summary of Running Time Changes

Weekday Running Time Changes				
Route	Direction	AUG23 Running Time (Mins.)	FEB24 Running Time (Mins.)	Action Summary
21	Inbound	46-57	46-58	Increase of 1-2 min.
	Outbound	40-59	40-59	No significant change.
22	Inbound	58-79	56-80	Increase of 1-2 min.
	Outbound	50-76	49-78	Increase of 1-2 min.
23	Inbound	52-65	50-65	Increase of 1 min.
	Outbound	49-68	49-68	No significant change.
51	Inbound	37-58	36-59	Increase of 1-2 min.
	Outbound	38-64	37-63	Decrease of 1 min.
61	Inbound	47-72	46-74	Increase of 1-2 min.
	Outbound	50-74	47-75	Increase of 1-2 min.
71	Inbound	51-63	50-65	Decrease of 1 min.
	Outbound	60-70	59-72	Decrease of 1 min.
91	Inbound	59-82	59-84	Increase of 1-2 min.
	Outbound	58-88	59-88	Increase of 1-2 min.
111	Inbound	43-63	44-67	Increase of 1-2 min.
	Outbound	45-68	44-67	Decrease of 1 min.
112	Inbound	41-60	42-60	No significant change.
	Outbound	43-63	42-62	Decrease of 1 min.
131	Inbound	41-50	39-49	Decrease of 1 min.
	Outbound	41-49	41-49	No significant change.
141	Inbound	34-54	35-51	Decrease of 1-2 min.
	Outbound	31-49	31-51	No significant change.
171	Inbound	41-58	41-60	Increase of 1-2 min.

	Outbound	41-58	41-59	No significant change.
172	Inbound	63-94	63-96	Increase of 1-2 min.
	Outbound	62-95	62-97	Increase of 1-2 min.
173	Inbound	70-99	70-102	Increase of 1-2 min.
	Outbound	70-109	70-109	Increase of 1-2 min.
174	Inbound	20-31	20-33	Increase of 0-1 min.
	Outbound	38	21-40	No significant change.
Saturday Running Time Changes				
61	Inbound	48-66	47-65	Change of -1 to +3 min.
	Outbound	48-66	45-65	Decrease of 0-3 min.
131	Inbound	35-46	35-45	Change of -1 to +1.
	Outbound	40-46	37-44	Decrease of 0-4 min.
141	Inbound	37-48	37-50	Increase between 0-2 min.
	Outbound	30-38	28-39	Increase between 0-2 min.
171	Inbound	43-55	43-55	Timepoint change.
	Outbound	40-55	39-54	Timepoint change; Decrease 0-1 min.
172	Inbound	50-67	50-67	Timepoint change.
	Outbound	50-72	50-71	Timepoint change.
173	Inbound	72-94	71-93	Timepoint Change; Decrease 0-1 min.
	Outbound	68-102	66-102	Timepoint Change; Decrease 0-1 min.
Sunday Running Time Changes				
71	Inbound	47-54	46-54	Decrease of 0-1 min.
		51-59	50-58	No significant change.
131	Inbound	35-46	35-46	No significant change.
	Outbound	40-45	38-42	Decrease of 0-2 min.
171	Inbound	43-55	41-53	Decrease of 0-2 min.
	Outbound	40-55	39-53	Decrease of 0-2 min.

Deadhead Time

Weekday deadhead running time was analyzed to identify deficiencies in the existing deadhead time allotments. Additional running time has been added where necessary to improve on-time performance.

Articulated Buses

AUG23 APC ridership was examined and articulated buses will be assigned to blocks on Routes 51, 61, 101, 102, 103, and 104 which have the highest maximum loads, or to Route 405 if a trip consistently has a max load of more than 32 customers (85 percent of seated capacity – we don't want articulated buses on the freeway). A total of eleven (11) articulated buses will be used in peak service.

35-Foot BEBs

Based on analysis from CTE and confirmed by Maintenance, the maximum distance on 35' BEB blocks will increase from 150 miles to approximately 167 miles.

Bus Stop Changes

Stop #1767 Stearns Street at Fidler Avenue NW – Remove bus stop to allow for an easier left turn at Los Coyotes Diagonal for Routes 91 and 172. Average weekday ridership activity shows four (4) boardings and two (2) alightings per day. These customers can access the following stop on Los Coyotes Diagonal at Stearns Street, immediately after the left turn.

Stop #1594 Del Amo Boulevard at Locust Avenue – Move from NW to NE to have adequate room for customers to wait and to improve safety via avoiding driveways.

Stop #0896 Orange Avenue at 29th Street SW – this stop has not been replaced following construction completion. The previous stop at Spring Street has received improvements and is located 900 feet away in the same block. In FY22, on an average weekday zero (0) people boarded and two (2) people alighted at this stop. No complaints have been received about this stop.

Stop #2062 Carson Street at Vermont Avenue SE – Relocate to a nearside stop for as long as two years while the stop on Carson Street at Vermont Avenue SE is closed for construction.

Stop #1633 183rd Street at Service Road SE – Remove this stop in favor of the layover location 100 feet to the east. This removal will improve reported on-time performance in the area. Customers exiting at this stop can exit at the layover. In addition, in practice, operators driving Routes 141 and 172 do not typically stop here. Route 173 will also stop at the layover.

Stops #0006 Long Beach Blvd at 15th St NE – Relocate this stop to 16th NE so that customers can cross the street.

Stop #0007 – Long Beach Blvd at 17th NE – Remove this stop due to proximity to 16th St

February 2024 Service Change Highlights (2/4/2024 – 6/15/2024):**I. Route-Specific Adjustments**

Additional trips or improved service span:

- Routes 2, 4, 8, 61, 94, 101, 103, 121, 171, 173, 175, and 191.

Reduced trips or reduced service span:

- Passport, 41, 45, 46, 51, 131.

Alignment change:

- Route 121.

Ongoing suspension of service:

- Routes 52, 81, 96, and 176.

II. Stop Adjustments

- Adjustments will impact Routes 4, 51, 71, 91, 141, 172, 173, 191 and 192.

III. Minor schedule Changes

- Routes 2, 41, 45, 46, 61, 91, 92, 93, 94, 101, 102, 103, 104, 111, 112, 131, 171, 173, 175, and 191.