Los Angeles County
Metropolitan Transportation
Authority
One Gateway Plaza
3rd Floor Board Room
Los Angeles, CA

File #: 2022-0426, **File Type:** Informational Report **Agenda Number:** 44.

**OPERATIONS, SAFETY, AND CUSTOMER EXPERIENCE COMMITTEE
NOVEMBER 17, 2022**

SUBJECT: NEXTGEN BUS PLAN EFFECTIVENESS ASSESSMENT

ACTION: RECEIVE AND FILE

RECOMMENDATION

RECEIVE AND FILE the NextGen Bus Plan Effectiveness Assessment.

ISSUE

In October 2020, the Board adopted the NextGen Bus Plan for the implementation of a fast, frequent, and reliable bus network for riders. Phased implementation of network restructuring began in December 2020, with additional phases implemented in June 2021 and September/December 2021.

This report assesses the potential effectiveness of the NextGen Bus Plan in comparison to the previous service in place in December 2019. A separate report is provided periodically for Motion 22.1 entitled NextGen Bus Speed Engineering Working Group to report on key milestones of progress in the implementation of the NextGen speed and reliability improvements.

BACKGROUND

The NextGen Bus Plan, the first comprehensive review of the Metro bus network in a generation, focused on establishing a fast, frequent, and reliable network that was easy to understand and competitive in the overall market for travel in LA County. This new network would be capable of supporting growth in overall ridership for the bus system through addressing opportunities to be more competitive at off peak-times and for shorter distance trips.

The implementation of the NextGen Bus Plan, with its associated bus line restructuring and the establishment of a set of service frequency tiers, was largely completed in December 2021.

Through the three-phase implementation of the NextGen Bus Plan, as of December 2021, Metro's 119 bus lines had service schedules within the following frequency tiers as shown in Table 1 below:

Table 1: NextGen Frequency Tiers - as of Dec 2021

Service Type	Peak Weekday	Midday Weekday	Evening	Weekend	Number of Lines

Core Network (Tier 1)	5-10	5-10	10- 15	7.5-15	31
Convenience Network (Tier 2)	12-15	12-15	20- 30	15 - 30	23
Connectivity Network (Tier 3)	20 - 30	20-30	30 - 60	30 - 60	26
Community Network (Tier 4)	40 - 60	40-60	60	60	39

DISCUSSION

The NextGen Bus Plan established a hierarchy of service frequencies as a key part of the roll out of a frequent, fast and reliable network. This report assesses the effectiveness of the NextGen Bus Plan compared with the December 2019 (pre-NextGen) network in serving actual overall trips (irrespective of travel mode) and transit trips recorded for an average weekday in 2019 (pre-COVID) using Location Based Services (cell phone location) data.

The assessment is based on the following NextGen objectives:

- Convenient Access to High Frequency Service (NextGen Frequent Network)
- Transit Service Competitiveness
- Travel Time Improvements
- Convenient Access to Key Destinations

Convenient Access to High Frequency Service (NextGen Frequent Network):

Access to the NextGen network was reviewed based on assessing the change in access to frequent service for various groups. These included:

- The number and percentage of households, population
- The number of zero or 1+ car households
- The number of essential and non-essential low-income workers.

The assessment was based on residential location, (including populations in Equity Focus Communities (EFCs) or non-EFCs (as defined in 2019). Convenient access was defined by 0.25 mile walk access to frequent service, and frequent service was assessed based on two levels of convenience available at each bus stop by PM peak and off peak:

- Access to 10 minute or better weekday service frequencies (NextGen Tier 1), or
- Access to 15 minute or better weekday service frequencies (NextGen Tier 1 and 2)

A summary of the findings is provided below. More details can be found in Appendix A of this report.

- The most notable result was a 716% increase in total population, and 614% increase in households, with access to the frequent network of 10 minute or better lines in the weekday midday period between December 2019 (pre-NextGen) and December 2021 (with NextGen). Population in EFCs gained slightly more (721%) than in non-EFCs (708%). Zero car households saw a 415% increase. Frequent service to essential jobs and non-essential jobs increased by 369% and 351% respectively.
- Convenient access to the 10 minute or better network during the PM peak period also showed significant gains, up between 28% (non-essential jobs) and 65% for non-EFC population

(EFC population increased by 49%).These results support the objective of allocating more service frequencies of 10 minute or better during the weekday midday time period in the NextGen Bus Plan.

- Through the NextGen Bus Plan, over 2.2 million more people have convenient access to 10 minute or better service midday weekdays, with 1.3 million of these people residing in EFCs. Over 1.1 million more jobs were also accessible through the 10 minute or better service under the NextGen Bus Plan.

- The NextGen Bus Plan also increased peak period weekday access to 10 minute or better service, with over 900,000 more people overall having convenient access to this network, with just under 500,000 more people in EFCs gaining this access.

- The same assessment for access to 15 minute or better service saw smaller gains, with midday weekday gains ranging from 38% to 69%, and peak period gains ranging from zero to a high of 4% for the population in EFCs.

- These results reflect the reality that a greater proportion of lines had 15 minute or better service pre-NextGen, especially during peak periods, though NextGen Bus Plan still provides improved access to the frequent (15 minute or better) network, especially in the midday period.

- Through the NextGen Bus Plan, over 1.4 million more people have convenient access to 15 minute or better service midday weekdays, with 720,000 of these people residing in EFCs. Over 550,000 million more jobs were also accessible through the 15 minute or better service under the NextGen Bus Plan.

Overall population with access to 15 minute or better peak hour service under the NextGen Bus Plan grew by 65,000 more and almost 72,000 more people in EFCs gaining this access, and 9,000 more jobs being accessible to this frequent network. These smaller numbers reflect the pre-NextGen network having many lines with 15-minute or better peak frequency.
For more data for these groups, please see Tables 2 and 3 in Appendix A.

Transit Service Competitiveness

A key measure of the potential for success in attracting new ridership was the Transit Competitiveness Ratio. Trips were considered competitive if the transit travel time was less than 2.5 times the duration of auto travel time.

Based on (LBS) data, or cell phone location data, for all trips (including transit), the number of trips with transit competitive travel times < 2.5 times the private auto increased by 2.4% (from 22.1% to 24.5% of all trips) under the NextGen Service Plan. The analysis was also completed for the trips of residents of EFCs where transit competitive trips increased by + 3.3% (from 26.2% to 29.3% of all trips).
This equates to over 580,000 extra trips that were transit competitive using the NextGen Bus Plan network, with 240,000 of these trips being for residents of EFCs. More details can be seen in Tables

4, 5, and 6 in Appendix A.

A similar analysis was conducted for transit trips based on TAP card data, comparing transit competitiveness between the pre pre and post NextGen Bus Plan networks.

The results of this analysis showed the NextGen network had 4.7% more transit competitive trips (47.3% versus 42.6%, or +45,000 trips), suggesting the NextGen network should retain more existing riders as well as generate more rides than the pre-NextGen network could have.

The percent of competitive transit trips grew for residents of EFCs by (5.1% (from 44.0% to 49.1% or + over 29,000 trips), greater than for trips of residents in non-EFCs which grew by 4.1% (40.6% to 44.7%, or + over 16,000 trips). For more details, please see Tables 7, 8, and 9 in Appendix A.
The data on transit competitiveness clearly shows the NextGen Bus Plan as capable of generating over 45,000 more competitive trips than the pre-NextGen network, with 29,000 of these for residents of EFCs.

Travel Time Comparison:

A travel time comparison was also conducted in terms of transit travel times in intervals of 15 minutes for all trips and for transit trips between the December 2019 service plan and the NextGen Bus Plan. Results show a 13% gain (+ over 500,000 trips) for all trips irrespective of travel mode and a 20% gain (+ over 27,000 trips) for transit trips now taking 30 minutes or less. These results show the ability of the NextGen network to allow more trips to be completed in these shorter (30 minute or less) travel times, which is particularly important for the NextGen network to be competitive for shorter distance travel. As a result, the number of trips taking longer (45 to 120 min. range) diminished under the NextGen Bus Plan.

The travel time comparison also looked at the percentage of all trips and transit trips for residents in EFCs versus residents in non-EFCs. Comparable gains are shown for both groups for both all trips and transit trips, but the percent gain for trips moving to the 30 minute or less travel time is much larger for transit trips (20%) compared to all trips (12-13%). For more details on these travel time comparisons, please see Tables 10, 11, 12, and 13 in Appendix A.
The travel time comparisons provided show the NextGen Bus Plan having over 500,000 extra trips with shorter (30 minute or less) travel times compared to the pre-NextGen network. Over 27,000 extra transit trips were also 30 minutes or less with the NextGen Bus Plan, helping this new network compete more successfully for new ridership, especially for shorter distance trips noted as a potential growth market for transit.

Destinations on High Frequency Network

This section analyzes the number of key facilities in various groups such as higher education institutions, health care, grocery stores, and parks. These are examined for access (within 0.25 miles) to both the 10-minute or better and 15-minute or better NextGen networks. Gains are substantial for the 10-minute network for midday service, ranging from +142% (Education) to +392% (Parks). Gain for the midday 15-minute network were between 35% (Education) and 73% (Parks). PM peak gains were less, between +10% (Health Care) to +24% (Parks) under the 10-minute or better network, with gains of between 3% (Education) and 7% (Grocery Stores and Parks) for the 15-minute network.

This analysis shows the benefit of the NextGen Bus Plan for access to key destinations, especially by the 10 minute or better NextGen network during midday, which is exactly what the NextGen Bus Plan was intended to achieve through significant investment in off peak service.

For more details, please see Tables 14 and 15 in Appendix A.

Ridership Benefitting from the High Frequency Network

A review of the percentage of transit trips in the 2019 transit trips data set that would use the 10 minute or better or 15-minute of better networks was completed.

This data shows significant gains for usage of the NextGen Bus Plan frequent network (60.6% for 10 minute or better service, 82.8% for 15-minute or better service), compared to around 48% of riders for the pre-NextGen network having access to 10-minute or better service.

Implementation:
In implementing the NextGen Bus Plan, key public comments included riders concerned with the need to make more transfers to complete their trips, as well as some concerns about reduction in bus stops (balance between service speed and access).

As a result of feedback from the public, there have been a small number of stops added back to assist groups such as seniors and those with disabilities in having easier access to the system, or where network simplicity was achieved at the expense of convenience (such as Oliver View Medical Center Lines 224 and 690).

This process of review and refinement will continue to ensure the NextGen Bus Plan achieves the maximum possible ridership benefits.

Conclusion
In summary, the results of this analysis suggest the NextGen Bus Plan as designed has delivered a more accessible and competitive service compared with the pre-NextGen network.

Additional speed improvements and associated service frequencies together with the full delivery of planned service with more bus operators hired by 2023, should continue to improve these metrics. This will allow NextGen Bus Plan to maximize the increase in bus system ridership as intended.

DETERMINATION OF SAFETY IMPACT

This item has no direct impact on safety.

FINANCIAL IMPACT

There are no financial impacts to the receipt of this item.

EQUITY PLATFORM

The NextGen Bus Plan was developed with an equity lens, placing service in Equity Focus Communities where transit was more likely to provide a key mobility option for residents. The above analysis shows solid gains in transit competitiveness through improved transit travel times. This is for EFC residents, for all trips and even more so for trips made on transit. This report suggests the gains from NextGen have flowed primarily to EFC residents who rely most on transit. These gains should continue to improve as bus speed and reliability improvements will increase the competitiveness of the NextGen Bus Plan.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

The results presented here demonstrate support of strategic plan goals 1-4 as follows:

- **Goal #1**: Provide high quality mobility options that enable people to spend less time traveling. Improving the speed and reliability of the bus network will reduce transit travel times, as well as improve competitiveness with other transportation options.
- **Goal #2**: Deliver outstanding trip experiences for all users of the transportation system. These initiatives help to move more people within the same street capacity, where currently transit users suffer service delays and reliability issues because of single occupant drivers.
- **Goal #3**: Enhance communities and lives through mobility and access to opportunity. With faster transit service and improved reliability, residents have increased access to education and employment, with greater confidence that they will reach their destination on time.
- **Goal #4**: Transform Los Angeles County through regional collaboration and national leadership. Because Metro does not have jurisdiction over local streets and arterials, collaboration with other partner agencies such as LADOT, Caltrans, City and County of Los Angeles are necessary to ensure these speed and reliability improvements are successfully implemented.

NEXT STEPS

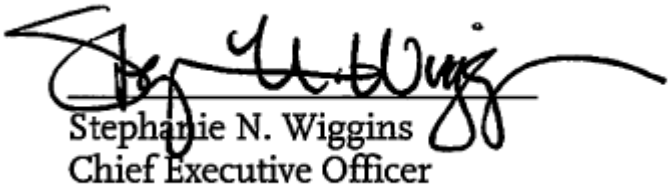
The full restoration and reliable delivery of the NextGen Bus Plan's 7 million revenue service hours included in FY23 Budget remains the highest priority for the agency, together with delivering the NextGen Bus Speed and Reliability initiatives to complete the implementation of NextGen Bus Plan and deliver its intended benefits to existing and potential future riders.

ATTACHMENTS

Appendix A NextGen Bus Plan Effectiveness Details

Prepared by: Joseph Forgiarini, Senior Executive Officer, Service Development, (213) 418-3400
Lilia Montoya, Deputy Chief Operations Officer, Admin & Development, (213) 922-4061

Reviewed by: Conan Cheung, Chief Operations Officer, (213) 418-3034



Stephanie N. Wiggins
Chief Executive Officer

Appendix A – NextGen Bus Plan Status Update

Through the implementation of the NextGen Bus Plan, largely completed as of December 2021, Metro's 119 bus lines had service schedules within the following frequency tiers as shown in Table 1 below:

Table 1: NextGen Frequency Tiers – as at Dec 2021

Service Type	Peak Weekday	Midday Weekday	Evening	Weekend	Number of Lines
Core Network (Tier 1)	5-10	5-10	10- 15	7.5-15	31
Convenience Network (Tier 2)	12-15	12-15	20- 30	15 – 30	23
Connectivity Network (Tier 3)	20 - 30	20-30	30 - 60	30 – 60	26
Community Network (Tier 4)	40 - 60	40-60	60	60	39

This appendix contains data that allows an assessment of the effectiveness of the NextGen Bus Plan, in terms of accessibility to and usability of this new network as implemented by December 2021.

Convenient Access to High Frequency Service (NextGen Frequent Network):

Access to the NextGen network was reviewed based on assessing the change in access to frequent service for various groups. These included the number and percentage of households, population (including populations in Equity Focus Communities (EFCs) or non-EFCs (as defined in 2019), zero or 1+ car households, based on residential location, with convenient 0.25 mile walk access to frequent service. Also assessed was convenient access to essential and non-essential low income workers. Frequent service was assessed based on two levels of convenience:

- Access to 10 minute or better weekday service frequencies (known as Tier 1), or
- Access to 15 minute or better weekday service frequencies (Tier 1 and 2)

These assessments are presented in Tables 1 and 2 below.

Table 2: 0.25 Mile Access to 10 Minute or Better Frequency

Comparison of 0.25 Mile Access to 0-10 min Network	Midday Dec 2019	Midday Dec 2021	2021 vs 2019 Change	PM Peak Dec 2019	PM Peak Dec 2021	2021 vs 2019 Change
Total Households	124,155	886,488	614%	584,904	894,466	53%
Total Population	313,329	2,555,872	716%	1,656,417	2,572,188	55%
Population in EFCs	184,744	1,516,628	721%	1,017,812	1,515,866	49%
Population in non-EFCs	128,585	1,039,244	708%	638,606	1,056,321	65%
No Vehicle Households	26,823	138,087	415%	100,204	138,741	38%
1+ Vehicles Households	97,332	748,401	669%	484,700	755,725	56%
Essential Jobs (< $1250 per month)	63,335	296,811	369%	212,849	298,946	40%
Non-Essential Jobs (> $1250 per month)	264,705	1,194,292	351%	945,922	1,206,860	28%

Table 3: 0.25 Mile Access to 15 Minute or Better Frequency

Comparison of 0.25 Mile Access to Frequent (15 min. or better) Network	Midday Dec 2019	Midday Dec 2021	2021 vs 2019 Change	PM Peak Dec 2019	PM Peak Dec 2021	2021 vs 2019 Change
Total Households	781,162	1,241,143	59%	1,206,228	1,224,785	2%
Total Population	2,229,233	3,675,208	65%	3,554,138	3,618,480	2%
Population in EFCs	1,312,666	2,036,097	55%	1,950,258	2,022,040	4%
Population in non-EFCs	916,568	1,639,111	79%	1,603,880	1,596,440	0%
No Vehicle Households	122,008	172,818	42%	166,893	171,382	3%
1+ Vehicle Households	659,154	1,068,325	62%	1,039,335	1,053,403	1%
Essential Workers (< $1250 per month)	271,957	408,761	50%	406,308	401,429	-1%
Non-Essential Workers (> $1250 per month)	1,095,933	1,513,389	38%	1,480,110	1,493,916	1%

Transit Competitiveness Comparisons

Research conducted as part of the NextGen Bus Study identified that trips were transit competitive, meaning transit was able to attract a higher mode share, if the transit travel time was less than 2.5 times the duration of auto travel time.

Data represented in Tables 4, 5, and 6 below are from analysis of all trips made, irrespective of travel mode. These were obtained from millions of Location Based Services (LBS) records (cell phone location data) and can be considered to represent the pool of “potential transit trips” that the NextGen Bus Plan can attract to transit usage. All of these millions of trip records were assessed for travel time on transit and travel in a car.

Overall travel was captured using LOCUS data from 2019 Q3 and Q4, which involved translating terabytes of location-based services data collected from millions of smartphone devices from across the nation into carefully calibrated and extensively validated estimates of travel in the region. Transit estimates for 2019 were generated using the 2017 expanded TAP Card data (applied for NextGen Bus Study) adjusted based on Metro’s 2019 Automatic Passenger Counter (APC) data and 2019 ridership data from the larger LA County municipal operators. All transit data (TAP Card, APC, and ridership data) came from a four month period (July-Oct) of their respective years.

The comparison of travel times for these two trip modes was used to assess the competitiveness of transit for use for each trip, with trips with transit travel time 2.5 or less times auto travel time considered competitive. Table 4 summarized all trips while Table 5 looked at trips by residents of EFCs and Table 6 looked at trips by residents of non-EFCs.

Table 4: Transit Competitiveness Comparison (All Trips) Dec 2021 vs Dec 2019

Transit Competitiveness Ratio	Dec 2019 Transit System	Dec 2021 NextGen Transit System	% Dec 2019 Transit System	% Dec 2021 NextGen Transit System
0.0 - 1.0	162,760	171,872	0.7%	0.7%
1.0 - 1.5	612,744	709,145	2.6%	3.0%
1.5 - 2.0	1,697,031	1,911,198	7.1%	8.0%
2.0 - 2.5	2,786,781	3,052,534	11.7%	12.8%
2.5 - 3.0	3,379,811	3,543,726	14.2%	14.9%
3.0 - 3.5	3,225,281	3,261,400	13.5%	13.7%
3.5 - 4.0	2,739,788	2,691,209	11.5%	11.3%
4.0 - 4.5	2,125,311	2,016,779	8.9%	8.5%
4.5 - 5.0	1,586,936	1,478,176	6.7%	6.2%
5.0 +	5,504,315	5,002,162	23.1%	21.0%
Grand Total	**23,820,759**	**23,838,200**	**100%**	**100%**
Competitive Trips (TTR < 2.5)			5,259,317	5,844,748
% of Competitive Trips (TTR < 2.5)			22.1%	24.5%

Table 5: Transit Competitiveness Comparison (All Trips) Dec 2021 vs Dec 2019 Residents in Equity Focus Communities

Transit Competitiveness Ratio	Dec 2019 Transit System	Dec 2021 NextGen Transit System	% Dec 2019 Transit System	% Dec 2021 NextGen Transit System
0.0 - 1.0	47,756	51,511	0.6%	0.7%
1.0 - 1.5	229,826	274,357	3.0%	3.6%
1.5 - 2.0	660,251	754,855	8.7%	9.9%
2.0 - 2.5	1,045,231	1,145,120	13.8%	15.1%
2.5 - 3.0	1,200,959	1,252,282	15.8%	16.5%
3.0 - 3.5	1,063,355	1,060,776	14.0%	14.0%
3.5 - 4.0	851,028	821,015	11.2%	10.8%
4.0 - 4.5	629,097	582,626	8.3%	7.7%
4.5 - 5.0	449,113	406,980	5.9%	5.4%
5.0 +	1,405,125	1,245,999	18.5%	16.4%
Grand Total	**7,581,741**	**7,595,521**	**100%**	**100%**
Competitive Trips (TTR < 2.5)			1,983,064	2,225,843
% of Competitive Trips (TTR < 2.5)			26.2%	29.3%

Table 6: Transit Competitiveness Comparison (All Trips) Dec 2021 vs Dec 2019
Residents in Non-Equity Focus Communities

Transit Competitiveness Ratio	Dec 2019 Transit System	Dec 2021 NextGen Transit System	% Dec 2019 Transit System	% Dec 2021 NextGen Transit System
0.0 - 1.0	115,005	120,360	0.7%	0.7%
1.0 - 1.5	382,918	434,788	2.4%	2.7%
1.5 - 2.0	1,036,780	1,156,343	6.4%	7.1%
2.0 - 2.5	1,741,550	1,907,415	10.7%	11.7%
2.5 - 3.0	2,178,852	2,291,443	13.4%	14.1%
3.0 - 3.5	2,161,925	2,200,625	13.3%	13.5%
3.5 - 4.0	1,888,760	1,870,194	11.6%	11.5%
4.0 - 4.5	1,496,214	1,434,154	9.2%	8.8%
4.5 - 5.0	1,137,823	1,071,196	7.0%	6.6%
5.0 +	4,099,191	3,756,162	25.2%	23.1%
Grand Total	**16,239,018**	**16,242,679**	**100%**	**100%**
Competitive Trips (TTR < 2.5)			3,276,253	3,618,906
% of Competitive Trips (TTR < 2.5)			20.2%	22.3%

While Tables 4, 5, and 6 above looked at all trips, Tables 7, 8, and 9 below examined whether riding transit had become more competitive under the NextGen Bus Plan for those already riding transit. This assessment was based on transit rider TAP data. Again, Table 7 looked at all transit trips will Tables 8 and 9 looked at those trips of residents of EFCs and non-EFCs respectively.

Table 7: Transit Competitiveness Comparison (Transit Trips) Dec 2021 vs Dec 2019

Transit Competitiveness Ratio	Dec 2019Transit System	Dec 2021 NextGen Transit System	% Dec 2019 Transit System	% Dec 2021 NextGen Transit System
0.0 – 1.0	5,114	6,009	0.5%	0.6%
1.0 – 1.5	54,456	67,588	5.7%	7.1%
1.5 – 2.0	150,064	169,751	15.7%	17.7%
2.0 – 2.5	197,944	209,428	20.7%	21.9%
2.5 – 3.0	179,291	176,625	18.7%	18.5%
3.0 – 3.5	128,202	120,088	13.4%	12.5%
3.5 – 4.0	83,534	75,100	8.7%	7.8%
4.0 – 4.5	52,062	45,025	5.4%	4.7%
4.5 - 5.0	32,572	27,421	3.4%	2.9%
5.0 +	73,039	60,177	7.6%	6.3%
Grand Total	**956,277**	**957,211**	**100%**	**100%**
Competitive Trips (TTR < 2.5)			407,578	452,776
% of Competitive Trips (TTR < 2.5)			42.6%	47.3%

Table 8: Transit Competitiveness Comparison (Transit Trips) Dec 2021 vs Dec 2019
Residents in Equity Focus Communities

Transit Competitiveness Ratio	Dec 2019 Transit System	Dec 2021 NextGen Transit System	% Dec 2019 Transit System	% Dec 2021 NextGen Transit System
0.0 - 1.0	2,690	3,271	0.5%	0.6%
1.0 - 1.5	31,933	40,683	5.6%	7.1%
1.5 - 2.0	92,358	105,446	16.2%	18.5%
2.0 - 2.5	123,497	130,264	21.7%	22.9%
2.5 - 3.0	109,987	106,814	19.3%	18.8%
3.0 - 3.5	76,161	70,019	13.4%	12.3%
3.5 - 4.0	47,595	42,129	8.4%	7.4%
4.0 - 4.5	28,999	24,877	5.1%	4.4%
4.5 - 5.0	17,844	14,844	3.1%	2.6%
5.0 +	38,022	31,249	6.7%	5.5%
Grand Total	**569,086**	**569,595**	**100%**	**100%**
Competitive Trips (TTR < 2.5)			250,478	279,664
% of Competitive Trips (TTR < 2.5)			44.0%	49.1%

Table 9: Transit Competitiveness Comparison (Transit Trips) Dec 2021 vs Dec 2019
Residents in Non-Equity Focus Communities

Transit Competitiveness Ratio	Dec 2019 Transit System	Dec 2021 NextGen Transit System	% Dec 2019 Transit System	% Dec 2021 NextGen Transit System
0.0 - 1.0	2,424	2,739	0.6%	0.7%
1.0 - 1.5	22,523	26,904	5.8%	6.9%
1.5 - 2.0	57,706	64,305	14.9%	16.6%
2.0 - 2.5	74,447	79,164	19.2%	20.4%
2.5 - 3.0	69,304	69,812	17.9%	18.0%
3.0 - 3.5	52,042	50,070	13.4%	12.9%
3.5 - 4.0	35,939	32,970	9.3%	8.5%
4.0 - 4.5	23,062	20,148	6.0%	5.2%
4.5 - 5.0	14,728	12,578	3.8%	3.2%
5.0 +	35,017	28,928	9.0%	7.5%
Grand Total	**387,193**	**387,617**	**100%**	**100%**
Competitive Trips (TTR < 2.5)			157,100	173,112
% of Competitive Trips (TTR < 2.5)			40.6%	44.7%

Travel Time Comparison:

An additional review was made to show travel time comparisons of all trips (Table 10) and transit trips (Table 11) using the NextGen Bus Plan as at December 2021 compared to travel times with the pre-NextGen December 2019 bus services.

Table 10: Travel Time Comparison (All Trips) Dec 2021 vs 2019

Transit Travel Times	Dec 2019 Transit System	Dec 2021 NextGen Transit System	Change	% Change
0 - 15 mins	2,214,181	2,347,665	133,484	6%
15 - 30 mins	5,391,656	5,764,411	372,755	7%
30 - 45 mins	5,450,224	5,529,225	79,001	1%
45 - 60 mins	4,008,422	3,857,123	-151,299	-4%
60 - 90 mins	4,576,419	4,324,622	-251,798	-6%
90 + mins	2,179,857	2,015,154	-164,703	-8%
Grand Total	**23,820,759**	**23,838,200**	**17,441**	**0%**

Table 11: Travel Time Comparison (Transit Trips) Dec 2021 vs 2019

Transit Travel Times	Dec 2019 Transit System	Dec 2021 NextGen Transit System	Change	% Change
0 - 15 mins	56,460	62,289	5,830	10%
15 - 30 mins	218,174	239,500	21,326	10%
30 - 45 mins	211,881	217,107	5,226	2%
45 - 60 mins	178,126	174,596	-3,529	-2%
60 - 90 mins	219,214	201,311	-17,903	-8%
90 + mins	72,425	62,407	-10,016	-14%
Grand Total	**956,279**	**957,212**	**933**	**0%**

Tables 12 and 13 compare changes in pre3centage of trips in each travel time and for all trips (Table 12) and transit trips (Table 13), with each table broken up by residents in EFCs versus residents in non-EFCs.

Table 12: Travel Time Comparison (All Trips) Dec 2021 vs 2019 EFC Resident Trips

Transit Travel Times	Residents in EFCs	Residents in Non-EFCs
0 - 15 mins	7%	5%
15 - 30 mins	6%	7%
30 - 45 mins	0%	2%
45 - 60 mins	-4%	-4%
60 - 90 mins	-6%	-5%
90 + mins	-10%	-7%

Table 13: Travel Time Comparison (Transit Trips) Dec 2021 vs 2019 Non-EFC Resident Trips

Transit Travel Times	Residents in EFCs	Residents in Non-EFCs
0 - 15 mins	11%	9%
15 - 30 mins	9%	11%
30 - 45 mins	2%	4%
45 - 60 mins	-3%	0%
60 - 90 mins	-9%	-7%
90 + mins	-15%	-13%

Destinations on High Frequency Network

This section analyzes the number of facilities in various groups such as higher education institutions, health care, grocery stores, and parks. These are examined for access (within 0.25 miles) to both the 15-minute or better (Table 14) and 10-minute or better (Table 15) NextGen networks.

Table 14: 0.25 Mile Access to Frequent (15 min. or better) Network

Destination Category	Midday	Midday	2021 vs 2019	PM Peak	PM Peak	2021 vs 2019
	Dec-19	Dec-21	Change	Dec-19	Dec-21	Change
Education	102	138	35%	128	132	3%
Grocery Store	1,466	2,169	48%	2,015	2,148	7%
Health Care	147	208	41%	199	207	4%
Parks	270	467	73%	433	465	7%
Total	1,985	2,982	50%	2,775	2,952	6%

Table 15: 0.25 Mile Access to Frequent (10 min. or better) Network

Destination Category	Midday	Midday	2021 vs 2019	PM Peak	PM Peak	2021 vs 2019
	Dec-19	Dec-21	Change	Dec-19	Dec-21	Change
Education	48	116	142%	100	116	16%
Grocery Store	459	1,771	286%	1,498	1,788	19%
Health Care	71	177	149%	163	179	10%
Parks	73	359	392%	296	367	24%
Total	651	2,423	272%	2,057	2,450	19%

Usage of High Frequency Network

Table 16 on the next page summarizes actual ridership activity (boardings + alightings) on the high frequency NextGen network implemented in December 2021 with 10 minute or better and 15 minute or better service frequencies, as a percentage of total ridership for weekdays. With full build out of NextGen Bus Plan the goal is to increase ridership on the 10 minute or better network to 80% of all ridership.

Table 16 – Ridership Activity (Boardings + Alightings) on High Frequency Network

Service Day	% Activity 10 Minute or Better Service Frequency	% Activity 15 Minute or Better Service Frequency
December 2021 Weekday Service Levels	60.6%	82.8%

TransitCenter Equity Analysis:

TransitCenter, a foundation working to improve public transit in cities across the U.S. conducted an equity analysis of transit systems including that of the LA area. The analysis looked at such items as jobs accessible within a 45-minute transit trip and average travel time to essential destinations, including hospitals and grocery stores. The analysis looked at such access for different races, single mothers, essential workers, and those living in poverty.

The TransitCenter analysis was based on all potential trip origin-destination pairs that could be made across all areas of LA County (not just Metro service area), regardless of whether such trips would actually be made. By comparison, Metro's own analysis presented here is more realistic as it considered how actual trips observed in 2019 could be made on the NextGen network compared to the pre-NextGen network. The Metro analysis also gave more significance to trips of residents in Equity Focus Communities where characteristics of the population were more supportive of the need to use transit and that showed the greatest actual usage of transit.

The TransitCenter analysis was conducted for the period from February 2020 and September 2021. The analysis showed many metrics improving, compared to just before the pandemic and as recovery from the pandemic was occurring, but even before the NextGen Bus Plan was fully implemented in December 2021.

.

NextGen Bus Plan
Effectiveness Review

Operations, Safety, and Customer Experience Committee

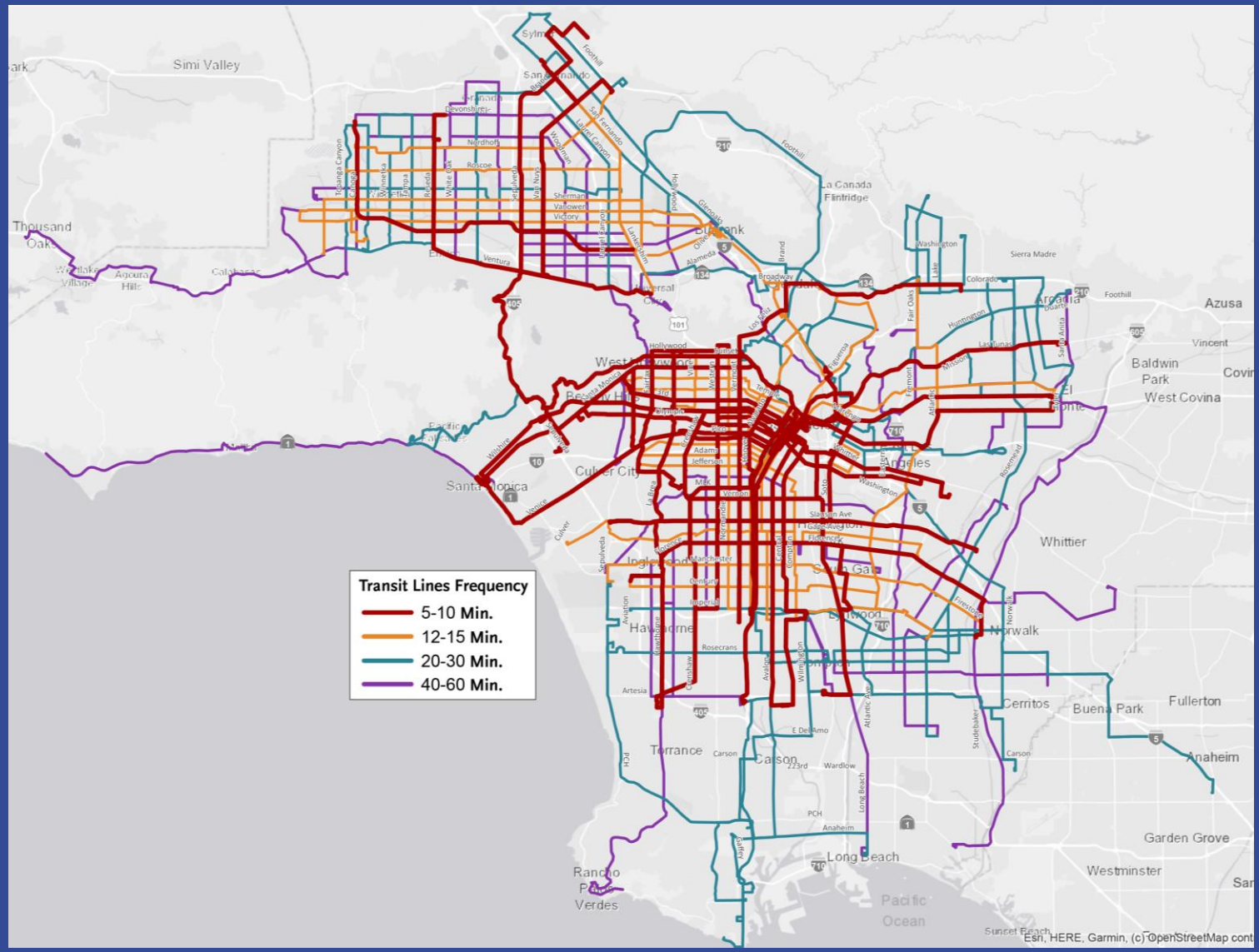
November 17, 2022

Metro

Background

- NextGen Bus Plan set out to create a fast frequency reliable network capable of competing successfully to increase ridership.
- By December 2021, phased roll out of many NextGen route changes and frequency improvements was completed.
- This effectiveness review analyzed how trips (all trips and transit trips) made in 2019 would be completed using the NextGen Bus Plan network as implemented in December 2021.

NextGen Frequent Network



Metro

Key Findings - Access

- Through the NextGen Bus Plan, 2.2 million more people (+716%) have convenient 0.25 mile access to 10 minute or better service midday weekdays. 1.3 million of these reside in EFCs.
- Peak period weekday access to 10 minute or better service also increased by 900,000 people (+55%). 500,000 of these in EFCs.
- Over 1.1 million more jobs (+350%) were also accessible through 10 minute or better midday service under the NextGen Bus Plan, with gains of over 350,000 jobs (+33%) in peak periods.
- Access to key destinations such as grocery stores, educational colleges, parks, medical centers increased, especially midday.

Metro

Key Findings - Competitiveness

- NextGen Bus Study identified trips with transit travel time less than 2.5 times private auto travel time being able to generate a much higher transit mode share (5-6% vs 2%).
- This equates to over 580,000 extra trips (+2.4%) that were transit competitive using the NextGen Bus Plan, with 240,000 of these trips being for residents of EFCs.
- As intended, data shows higher usage of the NextGen Bus Plan frequent network (60.6% of trips use the 10 minute or better service, 82.8% of trips use the 15-minute or better service).

Key Findings – Travel Times

- With NextGen, over 500,000 more overall trips (+13%) have short (30 minute or less) travel times compared to pre-NextGen service.
- 27,000 more transit trips (+20%) see 30 minutes or less travel times.
- These results show NextGen can compete well for shorter distance trips that were a potential growth market for transit.

Metro

Next Steps

- Staff will return in early 2023 to report on actual ridership trends for the NextGen Bus Plan.
- This reporting will continue through 2023 to help show how the NextGen Bus Plan is supporting ridership recovery.

Metro

Thank You!

Metro