

COMMITTEE ON STRATEGIC PLANNING
AND SERVICE DELIVERY

IN RE THE MATTER:)

REGULAR MEETING)

MARCH 9TH, 2022

)

9 Report of proceedings at the meeting of
10 the above-entitled cause, before Tabitha Watson, an
11 Illinois Shorthand Reporter, on the 9th day of
12 March, 2022, at the hour of 9:30 a.m., via
13 videoconference.

Reported by: Tabitha Watson, CSR, RPR

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1 BOARD MEMBERS PRESENT:

2 KEVIN IRVINE, Chairperson

3 LESTER BARCLAY

4 JOHNNY MILLER

5 ROSA ORTIZ

6

7

8 PRESENT:

9 DORVAL R. CARTER, JR., President

10 GREGORY LONGHINI, Secretary

11 BRAD JANSEN, General Counsel

12 MIKE CONNELLY

13 BERNARD JAKES

14 MOLLY POPPE

15 ALEJANDRO SILVA



(whereupon, the following proceedings were had via videoconference.)

SECRETARY LONGHINI: Good morning. I'm Gregory Longhini, Board Secretary of the Chicago Transit Board.

On March 3rd of this year, the office of the Secretary issued a notice of changed format of the meetings of the Committee on Strategic Planning & Service Delivery; Finance, Audit and Budget; and Transit Board scheduled for March 9th, 2022 due to the COVID-19 pandemic.

There is currently in effect a statewide disaster declaration as a result of the COVID-19 pandemic, which has been renewed from month to month since the start of the pandemic. Pursuant to Section (audio feedback), the head of the Chicago Transit Authority has determined it is not practical or prudent to conduct an in-person meeting in light of the ongoing disaster.

This means that as permitted by the section of the Open Meetings Act, there will not be any in-person public meetings and the Chicago Transit Authority public meetings on March 9th,



1 2022 will take place only virtually.

2 We will start with the Committee on
3 Strategic Planning and Service Delivery.

4 Chairman Irvine.

5 CHAIRPERSON IRVINE: Thanks, Greg.

6 Good morning, everyone. I would like to
7 call to order the March 9th, 2022 meeting with the
8 Committee on Strategic Planning & Service Delivery.

9 Greg, would you please call the roll?

10 SECRETARY LONGHINI: Yes.

11 Director Ortiz.

12 DIRECTOR ORTIZ: Here.

13 SECRETARY LONGHINI: Director Miller? Director
14 Miller? Director Miller, are you here?

15 Director Barclay.

16 DIRECTOR BARCLAY: Present.

17 SECRETARY LONGHINI: Chairman Irvine.

18 CHAIRPERSON IRVINE: I'm here.

19 SECRETARY LONGHINI: Director Miller, are you
20 here?

21 DIRECTOR MILLER: I'm here.

22 SECRETARY LONGHINI: All right. Then we have a
23 quorum with all four members of the Committee
24 present. Let the record show that Director Jakes



1 and Director Silva are also sitting in on the
2 meeting and that President Carter and Acting
3 General Counsel Brad Jansen are also at the
4 meeting, Chairman Irvine.

5 CHAIRPERSON IRVINE: Thank you. Our first
6 order of business today is the approval of the
7 February 9th, 2022 committee minutes. We need a
8 motion to approve.

9 DIRECTOR MILLER: So moved.

10 DIRECTOR ORTIZ: Second.

11 SECRETARY LONGHINI: Moved by Director Miller,
12 seconded by Director Ortiz. I'll take the vote.

13 Director Ortiz.

14 DIRECTOR ORTIZ: Yes.

15 SECRETARY LONGHINI: Director Miller.

16 DIRECTOR MILLER: Yes.

17 SECRETARY LONGHINI: Director Barclay.

18 DIRECTOR BARCLAY: Yes.

19 SECRETARY LONGHINI: Chairman Irvine.

20 CHAIRPERSON IRVINE: Yes.

21 SECRETARY LONGHINI: This motion passes with
22 all four votes, sir.

23 CHAIRPERSON IRVINE: Thank you.

24 Our next order of business today is an



1 electric bus report presentation and for that, we
2 have Mike Connelly.

3 Take it away, Mike.

4 MIKE CONNELLY: Morning. Good morning,
5 Directors. I'm Mike Connelly, your Chief Planning
6 officer. I wanted to share information about the
7 recently completed bus electrification study and
8 the status of our bus fleet.

9 If you would, go to the next slide. Last
10 month, CTA released Charging Forward our study
11 report which outlines a roadmap for full bus fleet
12 electrification by 2040. This is a complex
13 undertaking requiring much more than just buying
14 electric buses. Our bus maintenance and storage
15 facilities will need to be upgraded and converted
16 to provide charging and to enable daily bus
17 operations.

18 The study looked at which technology to
19 invest in, where to install charging, how to
20 sequence the electrification of bus garages and bus
21 routes, ways to coordinate the needed electric
22 upgrades with other modernization needs on our
23 system and it sets up a timetable to reach the 2040
24 goal for full fleet electrification.



1 CTA has been in touch with environmental
2 and other advocacy groups both during the studio
3 and leading up to the release. Briefings were held
4 for elected officials and other leaders and the
5 response has been very positive. We talked to CNT,
6 CMAP, Active Trans, the Respiratory Health
7 Association, as well as aldermen, State senators,
8 and Cook County commissioners.

9 If you would, go to the next slide.
10 Technology for bus electrification and charging is
11 still evolving. CTA looked at and analyzed three
12 different levels of potential change in technology
13 including the current battery levels, moderate
14 improvement and significant technology improvement.

15 We developed a pathway to full fleet
16 electrification by 2040 given each of the potential
17 levels of technology advancement. CTA has chosen
18 to proceed with the overhead pantograph-type
19 charging in the most part. This has evolved as the
20 industry standard for United States applications of
21 electric buses. The bus stops under an overhead
22 pantograph which lowers to make contact with the
23 charging plate on the roof of the bus. This
24 photograph shows the pantograph extending down to



1 make contact with the top of a CTA bus. This can
2 be accomplished at a bus stop as this photo shows
3 at Navy Pier by using a mast with an arm that
4 extends out over the top of the bus.

5 This type of overhead charging is also
6 easily installed inside a bus service bay in the
7 area normally used for daily fueling and cleaning.
8 These pantograph-type chargers can also be
9 installed in bus parking areas to charge buses
10 passively while they are sitting parked overnight.

11 The pantograph units can be programmed for
12 either slow charging during a parking cycle or fast
13 charging during the ten-minute layover at the end
14 of the route or in the wash bay.

15 If you could, go to the next slide. In
16 the garage at the current fueling islands, buses
17 pull in at the end of their service day and they're
18 checked for defects, refueled, and cleaned inside
19 and out. For electric bus charging, an overhead
20 pantograph would be installed and the bus would
21 receive energy to be stored in its batteries rather
22 than energy stored as gallons of diesel fuel in a
23 tank.

24 The time needed for the charging cycle can



1 be performed during the routine servicing timeframe
2 currently scheduled. Garages will probably use
3 different combinations of fast charging typically
4 in the fuel islands and slow charging in parking
5 spaces. The preferred strategy we're intending to
6 proceed with requires about 500 slow charger
7 cabinets throughout our seven charges and 30 fast
8 chargers across all the garages in the fuel
9 islands.

10 A limited network of on-route fast
11 chargers is estimated to include 12 to 13 on-route
12 locations. These can extend the electric bus range
13 to cover long blocks of work which exceed the
14 carrying capacity of today's battery technology.
15 The on-route charging locations will most likely be
16 charging hubs where multiple bus routes can utilize
17 the chargers, such as the current locations at Navy
18 Pier and Midway Airport.

19 CTA has already begun discussions with
20 Pace to implement equipment sharing at large bus
21 terminals where we share space, such as at
22 Jefferson Park or 95th Street station.

23 If you would, go to the next slide.
24 Equity has been the guiding principle for designing



1 our plan for embarking on this fleet conversion.
2 The map on this slide was created by the Chicago
3 Department of Health to index air quality and
4 health impacts across the City of Chicago. The red
5 shows the areas with the greatest air quality
6 impacts and the green are the areas with the least
7 air quality impacts.

8 Now, while CTA diesel bus exhaust is a
9 small fraction of the total emissions picture and
10 most air quality impacts are from industrial
11 facilities, freight rail yards, truck depots, or
12 truck traffic, CTA has chosen to begin our electric
13 bus implementation on the west and south sides of
14 the city where the air quality impacts are
15 heaviest.

16 The Chicago garage, as indicated in the
17 blue box near the top right-hand corner of this
18 map, already has our electric buses in operation
19 and they're in operation on the west side of the
20 city in those areas with the red coloration on
21 there. The 103rd garage installation is in
22 engineering and design right now and will follow
23 with construction and buses for that location will
24 come from an already awarded Federal grant.



1 If you don't mind, go to the next slide.
2 There are two parts to this slide. The list on the
3 left provides a sequence for converting all the CTA
4 garages into electric facilities. The map on the
5 right is complex. It maps the location of the CTA
6 bus garages as well as the routes that are operated
7 out of each garage. We'll take that map apart in
8 just a moment. But to focus on the list at the
9 left, you can see that the recommended order of
10 garage conversions starts with Chicago garage and
11 103rd garage followed by 77th and 74th, potentially
12 a new garage that doesn't exist today that CTA
13 would build, Kedzie garage, Forest Glen garage, and
14 North Park garage. They're arranged in order and
15 the right-hand side of that table on the left side
16 of this slide indicates the equity prioritization
17 from very high at the top to low at the bottom.

18 CTA did two separate analyses on all of
19 these garages in going to this process to look at
20 the equity impacts. We looked not only at the air
21 quality impacts that we saw in the previous slide,
22 but we looked at it from our Title 6 analyses
23 factors, which are low-income and minority riders.
24 We looked at two parts to each of those analyses



1 for each garage. One is to look at the half-mile
2 radius around the actual location of the garage to
3 determine the impact on the surrounding residences
4 and then the other was to actually take each route
5 for each garage and do an analysis of low-income
6 and minority as well as air quality impacts.

7 So this really prioritizes equity for CTA
8 as we go forward in both ways.

9 Next we're going to reconstruct --
10 deconstruct the map on the right-hand side to show
11 you the individual bus routes operating out of each
12 garage.

13 If you would, Herb, flip to the next
14 slide. Thank you.

15 This focuses on Chicago garage, which is
16 located at the intersection of Chicago Avenue and
17 Pulaski on the west side of the city. The map
18 identifies the bus routes which operate from this
19 garage that covers the east-west routes in the near
20 to mid-north side as well as some north-south
21 routes on the far west side of the city and some
22 routes that extend into the central portion of the
23 city and the north part of the south side.

24 If you would, go to the next slide. This



1 maps the bus routes operating out of 103rd garage.
2 It is on the far south side of the city at 103rd
3 Street just east of Cottage Grove in a very
4 industrial section of the city near Torrence. The
5 buses operated out of this garage cover the far
6 south and southeast portions of the city as well as
7 some routes operating locally or on the drive into
8 downtown.

9 If you would, go to the next slide. The
10 77th bus garage is mapped on this slide. It is
11 located on -- between 79th and 77th street just
12 west of the Dan Ryan expressway. It is co-located
13 with our bus heavy maintenance or the south shops
14 facility, which is where all of the heavy repairs
15 are done on all of the buses from all of the
16 garages. The bus routes operated from 77th garage
17 cover the south side east and west as well as north
18 and south operating mostly on the east side of the
19 south side.

20 If you would, go to the next slide. This
21 is the map for 74th garage, which is at 74th Street
22 and Wood in the mid-south section of the city. The
23 bus routes operate -- cover east-west routes on the
24 south side, routes on the far west near Midway



1 along the I-55 corridor, and some north-south
2 routes -- some long north-south routes in the
3 central area such as Western and Ashland Avenue.

4 Go ahead and flip to the next slide, if
5 you would. This is for Kedzie garage, which is on
6 the west side of the city. It's located at the
7 Eisenhower Expressway and Kedzie Avenue. It covers
8 many routes running east and west as well as the
9 north part of the south side of the city, routes
10 that are into Pilsen and Little Village as well as
11 into Lawndale and Bronzeville. Many of the routes
12 that serve downtown are operated out of Kedzie as
13 it's our closest garage to the downtown.

14 If you would, flip to the next side. The
15 Forest Glen garage is located in the far northwest
16 section of the city at Elston Avenue near the
17 intersection of Bryn Mawr and Central. The bus
18 routes based out of this garage serve the east-west
19 routes on the north side of Chicago, some
20 north-south routes at the far western edge of the
21 city, and routes in Skokie and Lincolnwood as well
22 as the Milwaukee Avenue route; that's the angled
23 route that you see coming out of the northwest side
24 operating into downtown.



1 The next slide, if you would. This
2 actually maps out the routes that are operated out
3 of North Park bus garage. It is at the corner of
4 Foster and Kedzie on the north side. The bus
5 routes based at this garage serve the northwest
6 corner of Chicago, extend into the city of
7 Evanston, and cover the north lakefront corridors
8 into downtown, including both express routes on
9 DuSable Drive itself and associated local service
10 on the inner drive as well as routes like the 22
11 Clark and 36 Broadway.

12 If you would, go on to the next slide.
13 This chart on this slide actually provides a more
14 detailed view of the sequence for bus fleet
15 electrification focusing on the garages themselves.
16 Again, this is that same list of bus garages that
17 we've already seen. They're in order from the
18 first and second to be done, Chicago and 103rd
19 through 77th south shops and 74 in the mid-south
20 and then extending to a new garage, Kedzie garage,
21 and then Forest Glen and North Park on the north
22 side.

23 The planned facility improvements are
24 timed to space out the significant modernization



1 projects. This sequence ensures that major
2 construction projects consider the available
3 funding, the lead time necessary, and other
4 resources available and to downplay any operational
5 disruption involved.

6 The electric buses are planned for each
7 transition year and this will accommodate the
8 number of buses coming in and reaching into our
9 fleet making sure that we have charging available
10 for all of the buses that we -- that we bring in.
11 The year that the bus garages were built is on the
12 left side of this table in blue. These bus garages
13 range from the newer garages, which are from 1994
14 and 1995 to our oldest garages which actually date
15 back to 1902 and 1903. Those were trolley barns
16 back when they were first opened but have been
17 turned into bus garages. Right now they're diesel
18 bus garages, but we're going to change them into
19 electric bus garages over time.

20 The newer buses are able to support
21 electric buses sooner and that makes a difference
22 for us, but we've stayed with equity prioritization
23 in this to make sure that we bring the benefit of
24 electric buses to our most low-income buses and



1 minority parts of the city earliest.

2 If you would, go to the next slide and
3 this actually indicates the potential transition
4 timeline. The light blue bars are the diesel
5 buses. The dark blue bars are electric buses in
6 the fleet. This is a range from 2022 on the left
7 side to 2040 when we'll be 100 percent electric on
8 the right side. You can see the percentage of
9 buses through the years as we go through and bring
10 them in. The black boxes at the bottom indicate
11 when garages will be available for charging and
12 that of course corresponds with when we'll bring in
13 a larger number of electric buses.

14 We do expect that we'll be operating mixed
15 fleets at several garages during the conversion
16 with both electric and diesel buses in operation as
17 we transition from the current diesel fleet to our
18 future electric fleet.

19 If you would, you could go to the next
20 slide. In order to maintain reliability of the
21 fleet as we transition, CTA will continue to need
22 to replace older diesel buses with new diesel buses
23 for the next four years. The new diesel buses will
24 provide significant emissions reductions and are



1 needed in the short-term to ensure we can continue
2 to provide service reliability as we begin to
3 convert.

4 The two biggest challenges to moving
5 faster are limited manufacturing capacity at the
6 bus builders and the need for increased electric
7 supply and charging infrastructure at the CTA bus
8 garages. Although the bus manufacturing companies
9 are ramping up production of electric buses, the
10 American Public Transit Association data indicates
11 that in 2019, only a hundred electric buses were
12 delivered with over 2,000 diesel buses delivered.

13 In 2020, there were also 200 electric
14 buses but still over 2,000 diesel buses. In each
15 of these years, there has been a ramp up and we're
16 seeing that in the future and we're seeing it at
17 the current level, but we're looking forward to a
18 time the bus builder will be able to supply us with
19 more electric buses than they can today.

20 If you would go on to the next slide.
21 There is an order of 100 diesel replacement buses
22 that is being delivered this year from late spring
23 to early autumn. These were placed on order last
24 year, but on the purchasing agenda for today's



1 meeting, there is a change order to purchase three
2 additional electric buses with available funding
3 and to exercise an option for 100 more diesel bus
4 replacements to be delivered starting this fall.
5 100 buses is only 5 percent of our fleet.

6 In the interim, CTA is logging data on our
7 electric buses and learning from our electric bus
8 deployments. Plans are underway for the necessary
9 infrastructure upgrade. We have eight electric
10 buses out in operation every day. We have ten more
11 being prepped to go out in the next several weeks.
12 We're also reviewing our five-year Capital
13 Improvement Program and our bus replacement
14 schedule to make changes that will be needed to
15 incorporate the findings of the Charging Forward
16 study. Training and support are ongoing in bus
17 operations and vehicle maintenance departments.

18 If you don't mind, go to the next slide.
19 The replacement diesel buses will not only provide
20 lower emissions, but will also save CTA operating
21 costs. With few exceptions, the Federal Government
22 has been steadily reducing the allowable emissions
23 not only for automobiles, but for heavy trucks and
24 buses. The buses that we are replacing now were



1 delivered in 2006. They met the requirements at
2 that time 16 years ago. However, the current
3 standards are much more stringent and engine
4 technology is much better. The replacement buses
5 will emit 22 percent less carbon dioxide,
6 80 percent less nitrous oxides, and 49 percent less
7 particulate matter than the buses that are being
8 replaced. Here in Chicago, NOx or nitrous oxides
9 are the prevalent cause of the poor air quality
10 days that we have in the summer.

11 Please go on to the next slide there.
12 This picture shows a photo of the dashboard of one
13 of CTA's electric buses in service. The dial at
14 the left is a speedometer and looks familiar to
15 most people. The dial at the right is the battery
16 state of charge indicator and it has red and green
17 and the dial that you can see so the operator can
18 monitor how they're doing with their electric
19 charge. The central information panel, the small
20 rectangle in the center gives the bus operators
21 some feedback on how their operating actions can
22 affect energy consumption as well as giving the
23 operator the projected range in miles.

24 We have built electric bus charging



1 stations on both terminals of the Chicago Avenue
2 bus route and one at Navy Pier at the east end and
3 one at Chicago and Austin on the west end.

4 We're fully engaged in our electric bus
5 deployment as I mentioned with the buses on streets
6 daily logging in data to support future
7 implementations. We have an advanced
8 data-collection software called variscite, which is
9 giving us a wealth of information on operating
10 characteristics on varying energy use depending on
11 the route that the bus is assigned to and on
12 charging behavior and charging intervals.

13 In addition, we are advancing
14 infrastructure improvements to bring adequate power
15 to 103rd garage for the next deployment while
16 performing a deeper study of the ultimate power
17 consumption needs we will address as we transition
18 from fully diesel to fully electric on the
19 remainder of our system. So CTA is charging
20 forward to full fleet electrification by 2040. The
21 study has given us a road map on how to get there.

22 If you would, go to the next slide. This
23 is the last slide in the deck and I'll be glad to
24 try to answer any questions you have. This picture



1 is actually a photograph of the electric substation
2 for charging at Chicago and Austin on the west side
3 of the city of Chicago. This is also an example of
4 CTA's public art program where we have attached a
5 piece of public art to the front of the substation.
6 This is Sunburst by the artist Shinique Smith, a
7 black woman from Brooklyn who practices out of LA.

8 With that, I'll be glad to answer any
9 questions that directors may have.

10 CHAIRPERSON IRVINE: Thank you, Mike.

11 Greg, you are muted.

12 SECRETARY LONGHINI: Thank you, Mike.

13 Chairman Irvine, do you have any
14 questions?

15 CHAIRPERSON IRVINE: Just a great presentation.
16 I'm so happy we have the support, Mike. Kudos to
17 you and your team for all the work on this. It's
18 great to see the roadmap giving us the future. So
19 thank you.

20 How are the pantograph chargers working
21 over the winter?

22 MIKE CONNELLY: They're actually working very
23 well. we didn't have any trouble there. The
24 charging plate on the top of the bus actually has a



1 heating element in this. So it stays ice and snow
2 free even in the worst weather so we always get a
3 good mate from the pantograph coming down and the
4 pantographs themselves were designed for outdoor
5 operation. It's the same pantograph that's in
6 operation in Manitoba, Canada right now, so we know
7 that they've been tested in the cold weather.

8 CHAIRPERSON IRVINE: Okay. Thank you. I don't
9 have any further questions at this time.

10 DIRECTOR SILVA: Have we decided who the
11 manufacturer of the electric buses is going to be?

12 MIKE CONNELLY: We're actually able to use
13 several manufacturers. So we can do a competitive
14 procurement to determine who will deliver those
15 buses. Right now there are I think five firms in
16 the market and there's a sixth one who will be
17 coming on. So that's -- we haven't made a prior
18 decision, but we'll make a decision on each group
19 of buses as we order. I would expect over time
20 we'll have several different manufacturers here.

21 DIRECTOR SILVA: The operating cost, okay, of
22 every bus, do they vary quite a lot or they are ...

23 MIKE CONNELLY: The electric buses actually
24 save us money on energy. We're projecting that the



1 maintenance cost won't be that different so that
2 we're projecting that there will be some -- not
3 significant cost savings, but there will be some
4 reduction in the cost in the future, but we don't
5 think it's significant and we are -- we're not
6 doing this to save money. We're doing it because
7 it's the right thing to do for air quality.

8 DIRECTOR SILVA: Thank you.

9 SECRETARY LONGHINI: Director Barclay, do you
10 have any questions?

11 DIRECTOR BARCLAY: I would just like to first
12 congratulate President Carter and Mike Connelly and
13 the team on a great job of getting this report
14 completed and the positive reception from the
15 public and I read through it and I've talked to a
16 number of people and there's a bit of excitement,
17 you know, that's going on right now about this
18 movement to electrification.

19 I know during our budget hearing last
20 year, we heard a lot of concerns about
21 electrification from various stakeholders groups.
22 Were any of those involved in the process of the
23 study?

24 MIKE CONNELLY: Yes, we were in touch with



1 almost all of those during the course of the study.

2 Yes.

3 DIRECTOR BARCLAY: Good.

4 SECRETARY LONGHINI: Director Ortiz, any
5 questions?

6 DIRECTOR ORTIZ: I just want to second all the
7 questions that were already asked. They're all
8 great questions. Thank you.

9 I also want to second all of the great
10 work that has been done. It's important and it's
11 really critical for us to be taking these steps so
12 they are well appreciated to continue to improve
13 the air quality of our residents. I especially
14 appreciated the fact of looking at air quality as
15 one of the important sectors to identify which of
16 the stations and routes were going to be
17 prioritized.

18 So I continue to support that effort and
19 to really be able to pair and support with these
20 new tools that improve air quality into communities
21 and areas that have the highest air quality
22 impact -- the worst quality of air.

23 So thank you so much for all of your help
24 and leadership on this. It is much appreciated.



1 Thank you.

2 SECRETARY LONGHINI: Director Miller, do you
3 have any questions or comments?

4 DIRECTOR MILLER: No questions. Just ditto,
5 President Carter and team. That was a lot of
6 excitement from what I've been hearing and it's
7 good to hear we're going to reach that predicted
8 date of 2040. So the excitement is still out
9 there. Congratulations. Thanks.

10 SECRETARY LONGHINI: Director Jakes, any
11 questions or comments?

12 DIRECTOR JAKES: No. Ditto to everything that
13 has been said.

14 Mike, who was the artist you said did the
15 work on the Austin? What was her name?

16 MIKE CONNELLY: Shinique Smith. She does a lot
17 of work in fabric. This is a metal fabrication for
18 outdoor installation. It's very nice. We'll make
19 sure to send you that name.

20 DIRECTOR JAKES: Thank you.

21 SECRETARY LONGHINI: Chairman Irvine, that
22 concludes the questions on that item.

23 CHAIRPERSON IRVINE: Thank you, Greg.

24 Our next order of business today is a



1 presentation on the Ventra app and presenting today
2 is Molly Poppe.

3 Take it away, Molly.

4 MOLLY POPPE: Good morning, Chairman Irvine.

5 Good morning, directors.

6 If you can go to the next slide, please,
7 Herb.

8 So today we wanted to provide an update
9 and overview on the Ventra app and digital payment
10 in general at the CTA. There has been a lot of
11 work on the Ventra app since we launched it -- or
12 relaunched it in September of 2020 and so we wanted
13 to come back and talk about the great work that we
14 at the agency have done to date and what is the
15 plan and future for Ventra.

16 So just a little bit of background. When
17 Ventra launched in 2014-2015, we also launched
18 Ventra with contactless credit card and credit
19 cards and Apple Pay and Google Pay. We were
20 actually the first U.S. transit agency in the
21 country to accept what are called open-loop
22 payments. So credit cards, contactless credit
23 cards and credit cards and Apple Pay and Google
24 Pay.



1 we quickly followed with the first version
2 of the Ventra app. It was the first of its kind in
3 the region that would allow customers of CTA, Pace,
4 and Metra to use their mobile devices to pay for
5 all three -- all three services and, in fact, in
6 2016, because of the success of that Ventra app, we
7 won the invasion award from APTA.

8 Then in September of 2020, CTA, Pace, and
9 Metra released what we think is and what we call
10 the next generation of the Ventra app. So we did a
11 full redesign and put the Ventra app on a more
12 modern new platform that would allow us to have
13 more robust architecture behind the Ventra app. It
14 would support more third-party integrations and
15 you'll see that in discussions we have going
16 forward and then it also allows for more ongoing
17 maintenance and update because we do know we need
18 to continue to maintain and improve the Ventra app,
19 but we also know that customers are going to
20 continue to look for something new, updates, and
21 improvements throughout time and where we are today
22 with the Ventra app, we've seen about 5 million
23 downloads since its debut in 2015 and what I think
24 is a really remarkable figure is we're averaging



1 about a thousand new users to the Ventra app each
2 day. So we are seeing a significant number of new
3 users registering their Ventra cards, registering
4 to be part of the Ventra system each day and I
5 think that's great as we continue it look to
6 welcome riders back, we see individuals wanting to
7 engage with Ventra and engage with our service.

8 Next slide. So I mentioned the brand new
9 app and the new platform. A couple key features of
10 the new Ventra app that was released in late 2020,
11 there's a brand new home screen. It really allows
12 for a one-stop shop, if you will, of all the
13 different major pieces that customers are looking
14 for from account balances to Metra tickets, you
15 have your favorites there. Trip planning can also
16 be accessed through that and favorite locations.

17 We also launched for the first time a
18 door-to-door trip planner. The prior Ventra app
19 and all of our trackers to date do not have a
20 transit-specific trip planner. We either take
21 directly from Google in some instances or it is
22 purely a way for you to look up arrival and
23 departure times for bus and trains. So we did
24 begin, you know, our first foray [sic] into



1 door-to-door trip planning within the Ventra app
2 across all of the regional public transportation
3 providers.

4 We also integrated with Divvy. This is a
5 really great features we've seen positive feedback
6 from our customers. We now show Divvy bike
7 stations and Divvy bikes available to the customer
8 in the Ventra app and the customer can seamlessly
9 connect to Divvy. So they can tap -- get a bike,
10 it takes them straight to the -- their -- unlocks
11 their phone, takes them straight to the camera, and
12 they can scan a QR code right there on the bike and
13 get their bike seamlessly.

14 We also have nearby transit arrivals.
15 This has been a new feature for us. The prior
16 Ventra app made customers select which train or bus
17 they were looking for. In the new Ventra app, we
18 are utilizing the GPS location on your phone -- on
19 customers' phones in order to identify nearby
20 transit services. So we've found it especially
21 helpful for customers that are in new locations
22 that they're maybe not super familiar with the
23 area, they can quickly open the Ventra app and it's
24 going to pull up a CTA bus or train or Metra



1 service, wherever they are, that's near them and
2 give them that arrival time and then the customer
3 can quickly trip plan.

4 This is not specific to CTA, but we think
5 it's important that this Ventra app is not just
6 about CTA. It's also about Metra. We also
7 improved the Metra ticketing process so it's a more
8 seamless process for customers to purchase Metra
9 mobile tickets and to repurchase Metra mobile
10 tickets.

11 Next slide. This is a preview for
12 everyone on the upcoming app update that we will
13 have this month. What you see on the left-hand
14 side, that is the look at the home screen. That's
15 what we have to date and you will see some more
16 realignment we're improving, the look and feel on
17 the home screen. You see in the favorites you can
18 favorite Divvy, train, and bus locations. And then
19 as you look at the middle phone there, if you
20 scroll down to the bottom of the home screen, we
21 are now ride -- adding ridership information. So
22 if you'll recall at the start of COVID, in that --
23 we started to release ridership information. So we
24 began to release historic crowding information so



1 customers can make some decisions about when to
2 ride and what potential crowding they may
3 experience on their bus or train. We've now added
4 that to the Ventra app so customers can quickly go
5 to the bus or train dashboard or Metra and Pace to
6 understand what type of crowding conditions they
7 may encounter.

8 The lastly, we have the Divvy bike
9 stations in the Ventra app launch and now we've
10 integrated the e-bikes. So customers will not only
11 be able to see station information, we are now
12 adding those floating e-bikes you now see all over
13 the place, which is really great. Divvy had one of
14 their strongest ridership years in 2021 and we
15 really hope that customers, as they continue to
16 come back to CTA, continue to look at Divvy as a
17 great first/last mile option for customers.

18 Next slide. I touched on this a little
19 bit at the start about the third-party
20 integrations. So we've got the integration with
21 Divvy that has been tremendous for us, but where
22 we've really seen great progress and great growth
23 in customers utilizing the app and finding value
24 has been through our virtual cards.



1 So on the left-hand side, you see a
2 picture of a virtual Ventra card in Google Pay and
3 then on the right side, you see a virtual Ventra
4 card in Apple Pay, both on the Apple phone and on
5 the Apple Watch.

6 since launch -- we launched the Apple Pay
7 in October of 2020 and we launched Google Pay in
8 May of 2021. Since launch, we've seen over 450,000
9 virtual Ventra cards get created. So we've seen
10 many individuals convert a Ventra card from a
11 plastic card to a virtual card and we've also seen
12 many instances where customers are really going --
13 creating a card right from scratch. They're not
14 even going through the process of buying a plastic
15 Ventra card. They're going straight to a virtual
16 Ventra card.

17 what the virtual Ventra cards allow is it
18 has -- the customer has their card right on their
19 phone. So they're no longer having to sort of dig
20 through, trying to find their plastic cards, look
21 to see where it might be. It's all right there on
22 their phone and if they're adding value to the
23 Ventra card through their phone, it's really great
24 that the card is right there. They don't have



1 to -- they've already got it in their hand, looking
2 at information, looking to add value.

3 It also is a seamless tap if anyone has
4 ever used it. For Apple, you don't even need to
5 wake up your phone. You literally can tap your
6 phone from a dark screen right on the Ventra
7 readers to ride seamlessly. For Google, it's just
8 a quick -- you just need to tap on the phone to
9 light it up and you can tap and go. What's also
10 great is even if your phone dies, there is a
11 residual battery that will stay for a while. So if
12 you have a virtual card on your phone and it dies
13 there at the end of the day, you still will be able
14 to ride because that battery will keep it active.

15 Next slide. So one of the key components
16 of Ventra app and something that we are continuing
17 to focus on is we want to make sure we have a
18 strong maintenance and update schedule for the
19 Ventra app. We're following what we've seen --
20 what we all see from major technology companies.
21 We see Google and Apple putting out operating
22 system updates all the time, we see app updates
23 coming out all the time from some of our favorite
24 apps. So CTA with our partners at Metra and Pace



1 and our contractor are really working to update the
2 app and constantly make back office changes both to
3 bring new features, but also to address bugs and
4 defects that may be identified by the user.

5 One of the best ways that we know to try
6 to identify bugs and try to improve usability for
7 riders is to allow them to test the app and allow
8 them have it be part of their daily lives. We did
9 have a robust testing process with what we call
10 beta testers, public beta testers before the app
11 launched. COVID kind of complicated that. It was
12 hard to find people that were going to consistently
13 be riding transit that wanted to be a tester, but
14 we did have a really good feedback from the public
15 before we even launched the app and then as we've
16 continued to move through and have the app in the
17 public for longer, we've gotten some feedback for
18 customers.

19 Specifically, we've gotten some feedback
20 even from some of our directors on different issues
21 that they've identified in the Ventra app and that
22 we've worked to fix. So we found that that public
23 engagement and that ability to have the public look
24 and see things that maybe testers -- we have good



1 testers, but maybe the testers aren't identified or
2 maybe CTA staff to identify, but we do -- I
3 mentioned, we do actively monitor the app and the
4 trip tools because that is the newest piece for us.
5 That's something that we are taking a step beyond
6 our comfort zone from what we had in the trackers
7 or what we had in the prior app to ensure we're
8 really identifying those bugs and fixing any
9 unexpected behavior.

10 And as I mentioned and as you saw on the
11 prior screens, we have an upcoming app release that
12 has some really great features. The e-bikes,
13 passenger crowding, you'll also see some Metra
14 ticket product changes that are coming in March of
15 this year for a new update of the Ventra app.

16 Next slide. The last piece of this is,
17 you now, the Ventra app is one component of the
18 digital experience or the customer-focused
19 experience that we have from a technology
20 perspective and we're really focused on updating
21 and improving the Ventra app, but we have a host of
22 other customer-focused customer engagement, both
23 digital tools and also comes in hardware form as
24 well, that we are looking to update.



1 You know, right before COVID, we approved
2 a full back office change to Ventra. So what we
3 call ventra 3. In the coming years, you will see a
4 full back office revamp and improvement of ventra.
5 There will be a transition to what's called open
6 architecture, which, again, the way we talk about
7 the Ventra app and allows for more seamless
8 third-party integration. That's also what we're
9 working on here with the full ventra revamp. You
10 will also see brand new Ventra readers. There's
11 going to be some digital redesign to our Ventra
12 vending machines as well.

13 On the tracker side, we are in the process
14 of updating bus tracker. We're doing a fully
15 redesign of the bus tracker website to make it
16 mobile responsive. Anyone who has currently used
17 our bus tracker knows it's not really mobile
18 responsive. So when you open the bus tracker, the
19 website on your phone, it's not a great experience.
20 So we're working to make it mobile responsive and
21 then we're taking other opportunities to improve
22 the look and feel of bus tracker and then also
23 looking to see if there's any back office changes
24 that we can make to improve the overall accuracy of



1 bus tracker. There has been tremendous
2 improvements on recent years on data analysis and
3 how can you use data and big data to improve
4 accuracy of location and so we are also working on
5 that.

6 Then last, you saw the link to the
7 crowding tool in the Ventra app and if you may
8 recall, also as part of COVID, we launched a pilot
9 project to understand realtime passenger crowding
10 on bus. We are currently working through the
11 future of that. What is the future of being able
12 to provide realtime passenger crowding data to
13 passengers and then also looking, can we take that
14 a step further and really start to predict, start
15 to give sort of passenger counts. Not just what's
16 the current condition on the bus, but when the bus
17 gets to the stop I'm at, what could be the
18 passenger crowding. This is something that we
19 continue to work on. We had great success with the
20 pilot project on 79th Street bus route and we're
21 looking for how can we make that a system-wide
22 deployment and what would be all involved from a
23 cost perspective and a management implementation.

24 So that's a very quick rundown of the



1 Ventra system and the Ventra app and digital
2 payments. It's been about 18 months since I last
3 talked to you all about the Ventra app and we
4 thought it would be a good time to come back and
5 talk about it knowing that we have a lot of updates
6 and plans for improvement on the horizon.

7 CHAIRPERSON IRVINE: Greg, you're muted.

8 Okay. While Greg is unmuting, thank you,
9 Molly. I appreciate the detailed presentation. I
10 am also -- I'm glad we're getting an update and I'm
11 excited to see Ventra 3.0. You and I have had a
12 lot of conversations about Ventra, about the
13 trackers, and I know all of this is invading your
14 sleep and keeping you awake at night and I
15 appreciate your dedication and commitment to making
16 all this work, you know, as well as it possibly
17 can.

18 Can you -- can you talk about the -- you
19 know, there has been a lot of issues people had
20 about -- that I've had with the train tracker
21 reliability, bus tracker reliability. Can you kind
22 of break down how -- what's the different between
23 Ventra app issues and tracker issues that we've
24 experienced? Because I know it's incredibly



1 complicated, so but if you can kind of give us a
2 thumbnail sketch of these issues, it would be
3 really appreciated.

4 MOLLY POPPE: Yeah. You know, it's always hard
5 for me to do a thumbnail sketch. I always feel
6 like I put too many words, but I'll do this sort of
7 quick.

8 So the bus and train tracker, those are
9 CTA-built -- from train tracker perspective, that's
10 a CTA-built tracker and what that -- how the train
11 tracker works is it takes data once a train starts
12 to move. So once a train leaves a terminal and it
13 starts on the tracks. So that's how we start to
14 get realtime tracker information for train and the
15 way the predictions work is it is relative to what
16 the schedule is. So what we say the train should
17 be at, Wellington Brown Line stop, and where the
18 train's current position is, that's how we
19 predict -- predict that information and predict the
20 realtime arrivals.

21 For bus, we have a vendor called clever
22 and they do similar. They look at the bus's
23 current position relative to what schedules and
24 then they predict arrival times to a stop and the



1 way those work is it is not -- it is direct data
2 from the bus. So it is information that's coming
3 straight from the bus and then we publish it and
4 then how the Ventra app takes it is it takes it a
5 step further if you will.

6 The Ventra app takes API feeds, so it
7 takes the data feed, takes the information from
8 those CTA trackers and then publishes it in the
9 Ventra app. What goes a step further from Ventra
10 is it's not just taking that data that we get from
11 the trackers, it's taking realtime information,
12 realtime location information from the customer.
13 So it is integrating that with the realtime
14 location information to pull additional
15 information.

16 It also then integrates with Metra and
17 Pace. So it's not just a bus, it's not just CTA
18 train, it also is Metra train, it's Pace bus, and
19 then there's also alerts with each one of those
20 systems as well. So it's about six to seven
21 different API feeds or also called (indiscernible)
22 that it pulls in along with Divvy bikes and takes
23 all that information and publishes it in the Ventra
24 app.



1 So on top of taking the GPS location, what
2 we found with issues that we've identified and we
3 actually do have a fix that will be going in
4 Thursday night into Friday. So by the time of the
5 great St. Paddy's day parade that's coming back,
6 we're going to have that issue addressed in the
7 Ventra app. What we were finding is there was a
8 timeout issue, if you will. There was -- when the
9 Ventra app was calling the API feed to get new
10 information, it was not able to pull the
11 information fast enough before it timed out. Now,
12 that's actually what you would want the Ventra app
13 to do. You'd want it to call the API feed if it's
14 not getting information because maybe the bus isn't
15 moving or the train is not there. You'd want it
16 not to report information. But what was happening
17 in our particular instance is the way it should
18 work, it was actually timing out before it could
19 get realtime data, so before it was getting some
20 data and it was happening specifically right before
21 a train pulled into a station. So basically when a
22 train moved to three to four minutes out from a
23 station, it would go to do [sic], the Ventra app
24 would try to call that information, it would not



1 get the information back from the API feed to say
2 that the train was due, so then it would say, oh,
3 I'm not getting any information from the API, the
4 train must not be coming and so it does -- it drops
5 it off the tracker.

6 So that's what we found is the issue, this
7 particular timeout issue. We were able to monitor
8 it, see it in realtime, and develop a patch
9 relatively quickly and like I said, it will be
10 deployed and fixed for Thursday night into Friday
11 morning.

12 Was that -- I know it's one of those
13 where, Director Irvine, we've talked about it for
14 -- many times now and it is a really complex and
15 complicated process, but I hope that that gives a
16 little bit of insight of how the trackers are
17 great, they've been around for over ten years with
18 CTA, so we've had a lot of time to improve and grow
19 those. Then that Ventra app is really that next
20 generation, that next step of building on those
21 trackers and we're really taking the learning that
22 we had from the tracker releases ten years ago and
23 trying to improve the Ventra app.

24 CHAIRPERSON IRVINE: That's -- I appreciate



1 your -- the detail and I know it's hard to
2 simplify it. So for outside the Ventra app, if a
3 train just drops off the tracker -- the train
4 tracker or a bus drops off the bus tracker, what's
5 going on there?

6 MOLLY POPPE: Yeah. So there could be a host
7 of different things that are going on. It could be
8 there could be a delay. So the bus, you know, has
9 a breakdown -- a maintenance breakdown, so the bus
10 is no longer moving, so it eventually leaves the
11 tracker. Same thing with train, if there's a delay
12 for whatever reason, we typically say delayed on
13 the trackers, but you will also see if a train
14 doesn't move after a designated amount of time it
15 will no longer show up.

16 In other instances, it could be a
17 communications issue. We see a lot of times in
18 downtown areas and I'm sure folks have seen that
19 with any of their ride share app, there's called
20 urban (indiscernible) where you don't get realtime
21 information. The GPS is not reporting because of
22 tall buildings or in other areas of the city,
23 there's poor connection because of, you know,
24 there's only 3G service or even only very sporadic



1 service in certain areas of the city.

2 So there's really a different host of
3 causes of it and it -- we have robust monitoring to
4 try to heeze (phonetic) down to what the issue was
5 and so we were able to identify the issue, apply a
6 patch. It took us about two weeks from start to
7 finish and we also have six to eight days of
8 testing. So we have a robust testing schedule.

9 So that's -- there's going to be a host of
10 different reasons why we have the monitoring to
11 address it and then we have a great team to
12 identify the issue, develop a patch pretty quickly,
13 and then do all the robust testing before it goes
14 to the public.

15 CHAIRPERSON IRVINE: All right. Molly, I
16 really appreciate in your presentation how you
17 emphasize the importance of people giving feedback
18 about their experiences when they're using the app,
19 using the trackers. What is the best way for them
20 to get that feedback back to you and your team?

21 MOLLY POPPE: So there's a couple different
22 ways. We monitor feedback that comes through the
23 App and Play Store. So the App Store and Play
24 Store both have ways for you to report feedback and



1 provide feedback on the Ventra app. We also get
2 feedback directly to our customer service. So they
3 would e-mail or call Ventra customer service at
4 customer service at ventra.chicago.com. They
5 can e-mail it or then they can call our custom
6 service line as well. There's multiple different
7 ways for customers to provide that feedback and we
8 also really do look at social media as well.

9 I spend a fair amount of time on social
10 media looking at feedback. We try to not just make
11 it something where the customer has to take a whole
12 bunch of steps to try to tell us there's a problem.
13 We really do look if we see some tweets or things,
14 we do have individuals monitoring Twitter and
15 Facebook who will say, hey, we saw some chatter
16 about Ventra, is there an issue? And that's a way
17 to do it. So we have direct touch points and then
18 we also go out looking for feedback as well.

19 CHAIRPERSON IRVINE: Okay. Thank you very
20 much. I'm -- I'm always going to be in
21 conversation with you with this stuff I think, but
22 I don't have any more questions for now and I
23 really appreciate all of your efforts.

24 MOLLY POPPE: No, and, you know, I mention, the



1 feedback from you is amazing and the feedback from
2 all of our customers is great. The point of the
3 Ventra app is to service the customers and ensure
4 good seamless service for them, so we do want to
5 get that feedback and make sure we're taking it and
6 applying it quickly to improve the Ventra app. So
7 I look forward to many more conversations with you
8 as we continue to move forward and have more
9 updates and features to show you.

10 CHAIRPERSON IRVINE: Thank you.

11 SECRETARY LONGHINI: Thank you.

12 Director Barclay.

13 DIRECTOR BARCLAY: Just one quick question,
14 Molly. And thank you for the presentation. How
15 are we planning to promote these updates to our
16 customers?

17 MOLLY POPPE: Yeah, we talked about this a
18 little bit with Director Irvine. You know, I think
19 with the Ventra rollout specifically, when it first
20 rolled out, we did have -- it was a bit of a bumpy
21 ride to start and I think we've had challenges
22 going forward of looking for ways to fully promote
23 Ventra and be really excited about it. So one of
24 the ways that we do promote it is through e-mails



1 and we're looking to step up and have direct
2 e-mails to our customers about the Ventra app. We
3 also do have a promotion that we do with the Ventra
4 app through social media. So you'll see a lot of
5 social media posts about the Ventra app. Then very
6 recently, you will see posting an encouragement of
7 individuals to use the Ventra app from some of our
8 third-party partners.

9 Just this week Apple put out an e-mail to
10 all of their Apple Pay users in the area about the
11 virtual ventra card and encouraging individuals to
12 download the app and use the virtual ventra card
13 and Apple Pay to ride CTA or ride transit to the
14 parades.

15 So we look -- we do primarily social
16 media, we do direct engagement with customers, and
17 then we also take advantage of our third-party and
18 their outreach to further promote Ventra.

19 DIRECTOR BARCLAY: Thank you.

20 CHAIRPERSON IRVINE: Greg, you're muted again.

21 SECRETARY LONGHINI: Director Ortiz.

22 DIRECTOR ORTIZ: Yes. I just want to say
23 congratulations. This is really important. It is
24 incredibly helpful to have this user-based approach



1 and one-stop shop approach as well. So the
2 connections with the other transit partners I think
3 are really important, especially Divvy.

4 So congratulations again. I am excited to
5 make sure, as Director Barclay mentioned, that
6 people know about it, that people are excited about
7 using it, and I think it will make a really big
8 difference for everyone in terms of just knowing
9 what's out there.

10 The other piece I like is when you're in a
11 place you don't really know, how do you access
12 those other -- know about other forms of
13 transportation and routes that are there nearby.

14 So thank you for your work.

15 MOLLY POPPE: Thank you, Director.

16 DIRECTOR ORTIZ: No further questions.

17 PRESIDENT CARTER: Director Ortiz and Director
18 Barclay, I hear both of you in terms of the
19 importance of marketing, you know, what we're doing
20 here at CTA and particularly the customer-facing
21 features and I just want to let you know, we do
22 have a new position in our budget this year to hire
23 a director of marketing. This is part of my effort
24 to really want to amplify and market a whole lot



1 more aggressively what CTA does as part of my
2 effort to obviously bring ridership back to CTA.

3 Clearly a portion of that portfolio will
4 be looking at how we amplify and continue to market
5 and build on a lot of the work Molly has done to
6 promote the Ventra app to make it a much more
7 well-known and understood technology improvement
8 that CTA has invested a lot of money into.

9 SECRETARY LONGHINI: Thank you, President
10 Carter.

11 Director Miller, do you have any
12 questions?

13 DIRECTOR MILLER: No questions. Good job.
14 Good job.

15 SECRETARY LONGHINI: Director Jakes.
16 Direct Jakes?

17 DIRECTOR JAKES: No questions, Greg.

18 SECRETARY LONGHINI: I'm sorry?

19 DIRECTOR JAKES: Can you hear me? I don't have
20 any questions.

21 SECRETARY LONGHINI: No questions. All right.
22 We're finished with the questions, Chairman Irvine,
23 on that matter.

24 CHAIRPERSON IRVINE: Thank you.



1 Since there is no further business to come
2 before the Committee, may I have a motion to
3 adjourn?

4 DIRECTOR MILLER: So moved.

5 DIRECTOR ORTIZ: Second.

6 SECRETARY LONGHINI: Moved by Director Miller
7 and seconded by Director Ortiz. I'll take the
8 vote.

9 Director Ortiz.

10 DIRECTOR ORTIZ: Yes.

11 SECRETARY LONGHINI: Director Miller.

12 DIRECTOR MILLER: Yes.

SECRETARY LONGHINI: Director Barclay.

14 DIRECTOR BARCLAY: Yes.

15 | SECRETARY LONGHORN: Chairman Tryine.

16 CHAIRPERSON TRVLTNE · Yes

17 SECRETARY LONGHINI: The meeting is adjourned
18 and we'll take a short five-minute break please
19 before we start the finance committee meeting.

20 (which were all the proceedings
21 had in the above-entitled
22 cause.)

23 | (Adjourned at 10:25 a.m.)



1 STATE OF ILLINOIS)

2) SS:

3 COUNTY OF C O O K)

4

5 Tabitha Watson, being first duly sworn, on
6 oath says that she is a court reporter doing
7 business in the State of Illinois and that she
8 reported in shorthand the proceedings of said
9 meeting and that the foregoing is a true and
10 correct transcript of her shorthand notes so taken
11 as aforesaid and contains the proceedings given at
12 said meeting on said date.

13 Tabitha Watson

14

15 Certified Shorthand Reporter

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