Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

Agenda

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

February 4, 2021

9:00 a.m.

Meeting will be held via webinar

To request an agenda in an alternative format or to request accommodations to facilitate meeting participation, please call the Clerk of the Board at least two working days prior to the meeting. Meeting webinar/teleconference instructions can be accessed at the following link: https://www.sdmts.com/about-mts-meetings-and-agendas/executive-committee

		ACTION RECOMMENDED
1.	ROLL CALL	
2.	APPROVAL OF MINUTES - December 3, 2020	Approve
3.	PUBLIC COMMENTS	

COMMITTEE DISCUSSION ITEMS

4.	San Diego Transit Corporation (SDTC) Pension Investment Status (Jeremy Miller, Representative from RVK and Larry Marinesi)	Informational
5.	San Diego Transit Corporation (SDTC) Employee Retirement Plan's Actuarial Valuation as of July 1, 2020 (Anne Harper and Alice Alsberghe of Cheiron, Inc. and Larry Marinesi) Action would forward a recommendation to the Board of Directors to receive the SDTC Employee Retirement Plan's (Plan) actuarial valuation as of July 1, 2020, and adopt the pension contribution amount of $17,585,592 for fiscal year 2022.	Approve
6.	Zero Emission Bus (ZEB) Pilot Performance and Transition Plan Update (Mike Wygant & Kyle Whatley)	Informational
7.	Eat, Shop, Play Business/Ridership Marketing Campaign (Rob Schupp)	Informational

Please SILENCE electronics during the meeting

OTHER ITEMS

8. REVIEW OF DRAFT February 11, 2021 MTS BOARD AGENDA

9. COMMITTEE MEMBER COMMUNICATIONS AND OTHER BUSINESS

10. NEXT MEETING DATE: March 4, 2021

11. ADJOURNMENT

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE
1255 Imperial Avenue, Suite 1000
San Diego, CA 92101

MINUTES

December 3, 2020

[Clerk's note: Except where noted, public, staff and board member comments are paraphrased. Note that the meeting was conducted via webinar to comply with public health orders].

1. ROLL CALL

Chair Fletcher called the Executive Committee meeting to order at 9:00 a.m. A roll call sheet listing Executive Committee member attendance is attached.

2. APPROVAL OF MINUTES

Chair Fletcher moved to approve the minutes of the November 5, 2020 MTS Executive Committee meeting. Vice Chair Sotelo-Solis seconded the motion, and the vote was 4 to 0 in favor with Board Member Arambula absent.

3. PUBLIC COMMENTS

There were no Public Comments.

COMMITTEE DISCUSSION ITEMS

4. Fixed Route Bus Services - Contract Award (Mike Wygant, Larry Marinesi, Sam Elmer)

Michael Wygant, MTS Chief Operating Officer – Transit Services; Larry Marinesi, MTS Chief Financial Officer; and Sam Elmer, MTS Manager of Procurement, presented on the Fixed Route Bus Services contract award. They outlined the following aspects of the project: bus service overview, contracted services reasoning, current contract background and highlights, contract procurement methodology, negotiated procurement process, budget impact, cost savings, details of cost proposal, Transdev organization background, new contract terms and conditions, new contract incentives and assessments, new contract enhancements, new contract-future plans and projects, benefits moving forward, evaluation committee review, and staff recommendation.

Vice Chair Sotelo-Solis acknowledged that one of Transdev's strengths was data collection and its current platform syncs well with MTS's current system. She asked how the data is collected and how it is used for MTS's use.

Mr. Wygant explained that information such as On-Time Performance (OTP) and route information through the Regional Transportation Management System (RTMS) is relayed to MTS. Similarly, customer complaints the agency receives can also be relayed to Transdev. Transdev's real time data collecting features is an advantage as it allows MTS's oversight team to collect and capture data directly. This data is then presented to MTS monthly in order to monitor the overhaul performance of the system.

Vice Chair Sotelo-Solis noted that accessibility and capturing data is important as well as the application to assess growth and improvement. She also asked about Transdev's diversity in its leadership and how the demographics impacted the selection of the nominating committee.

Mr. Wygant commented that during the selection process, the committee assessed whether the key staff listed in the proposal was representative of the MTS service area.

Vice Chair Sotelo-Solis asked for a specific document that showed the demographic breakdown that the committee used to understand the diversity in the organization.

Mr. Elmer cited the Equal Employment Opportunity (EEO) report as the document submitted in the proposal. He explained the document shows a race and quantity breakdown. Mr. Elmer listed that of the 739 employees, 453 are Hispanic male, 100 Hispanic female, 55 African American, 55 Pacific Islander, and 22 listed as other. He assured the contractor did provide a detailed version of the breakdown at the time of submittal.

Vice Chair Sotelo-Solis thanked Mr. Elmer. She asked Mr. Wygant about the roll the contractor would play versus MTS for maintenance, transmissions, and engine procurement.

Mr. Wygant clarified that the contractor has maintenance responsibilities with the exceptions of engines, transmissions and batteries. He clarified this was not the same as engine failure, engine leak or engine preventative maintenance, which is all covered under the contractor's responsibility. He noted that MTS is liable when an engine has reached the end of its life and requires to be re-built. An internal team from the maintenance department conducts monthly audits at each facility to ensure the maintenance is conducted and in line with good repair standards and the scope of work. Once a transmission or engine has met the end of its useful life, MTS takes responsibility. All other maintenance is a cost that is covered by the contractor.

Vice Chair Sotelo-Solis asked staff to clarify the cost breakdown of the contract.

Mike Daney, MTS Manager of Contract Operations and Passenger Facilities, clarified the cost breakdown. He noted that the pre-determined bonus is an incentive for the contractor to meet several different milestones to implement in the new contract term. Mr. Daney also clarified that the scope of services in the new contract are materially different with various increases and changes.

Mr. Wygant added that as this contract is being awarded to the incumbent, they will be required to receive re-approval of their safety plans and training plans. MTS would also conduct a fleet assessment and fleet inventory to set a new baseline.

Action Taken

Chair Fletcher moved to forward a recommendation to the Board of Directors to authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0708.0-20, with Transdev North America (Transdev), in the amount of $911,362,781 for the provision of fixed-route, express and Bus Rapid Transit (BRT) bus services for a six year base period with two 2-year option terms to be exercised at the CEO's discretion. Vice Chair Sotelo-Solis seconded the motion, and the vote was 4 to 0 in favor with Board Member Arambula absent.

5. State Lobbying Services – Contract Award (Julia Tuer)

Julia Tuer, Manager of Government Affairs, presented on the State Lobbying Services contract award. She outlined the following aspects of the project: MTS state legislative advocacy, state lobbyist contract, RFP process, contractor Watts & Hartmann, LLC, and staff recommendation.

Board Member Ward asked if this contractor was the incumbent.

Sharon Cooney, Chief Executive Officer, responded that this was the incumbent and also noted the addition of two subcontractors. She noted that one of the subcontractors, Melissa White, had just left the Assembly Transportation Committee as lead analyst, which the agency has

worked with previously. The subcontractors would bring a new perspective to the agency's lobbying efforts.

Board Member Ward added that the combination of existing and new relationships is positive. He was surprised by the range in responses and was pleased with the cost effectiveness of Watts & Hartmann. He asked if the subcontractors were imbedded in the total cost.

Ms. Tuer confirmed the subcontractor costs were part of the total proposed contract.

Action Taken

Board Member Ward moved to forward a recommendation to the Board of Directors to authorize the Chief Executive Officer (CEO) to: (1) Execute MTS Doc. No. G2414.0-21 with Watts & Hartmann, LLC, for the provision of State Lobbying Services for a three (3)-year base period, and two (2)-year optional terms, for a total of five (5) years, in the amount of $157,800.00; and (2) Exercise each option year at the CEO's discretion. Vice Chair Sotelo-Solis seconded the motion, and the vote was 4 to 0 in favor with Board Member Arambula absent.

6. Ferry Service (Denis Desmond)

Denis Desmond, MTS Director of Planning, presented on Ferry Service. He outlined the following aspects of the project: current route, service opportunity, existing infrastructure opportunities, project refinement, ridership projections, dock locations, travel times, estimated capital and operating costs, naval ferry route, public and stakeholder feedback, alternative fuel options and next steps.

Chair Fletcher asked to explore electric ferries as an option in order to transition away from diesel fuel, even as a pilot program idea. He asked staff to involve Board Member Sandke in this conversation as he engages with the Coronado naval base regularly and can be a resource for this project.

Board Member Salas thought the demand for ridership would be higher than the one reported. She acknowledged that the primary beneficiaries would be Coronado residents and understood the limitations Chula Vista residents would have if this service was implemented. Board Member Salas noted the boat launching area would be an ideal site for this amenity if the project proved viable and feasible for Chula Vista. She acknowledged the limitations include the habitat in the Sweetwater channel.

Mr. Desmond added that the no wake zones are typically to not disturb boats, docks, facilities, and wildlife refuge, but also to control erosion. Exemptions for the no wake zones would need to go through a process involving the Coastal Commission and Coast Guard, but this could still remain an option.

Board Member Salas asked if the movement of the Chula Vista Bayfront Project would change the projections of use for the project.

Mr. Desmond acknowledged that as a possibility. He explained the locations used for the assessment included the marina area. He acknowledged this was just a sample and clarified that in a deeper assessment, the proposed location would need more in-depth evaluation for the most suitable locations. Another sample area that was taken into consideration was the boat yard near H Street. He also noted the agency recently commented on the Port Master Plan, which includes considering docking facilities for future waterway systems.

Vice Chair Sotelo-Solis acknowledged National City has Pier 32 as a resource. Along with the Port Master Plan, National City also has its Marina District Balanced Plan, where the goal is to have commercial pathways and connections to other parts of the region. She acknowledged the low ridership for commuters, but suggested a possible draw for tourism. She supported Chair Fletcher's suggestion for an electrified ferry in order to make MTS consistent with its goals across all its modes of transportation.

Chair Fletcher restated that Board Member Sandke would be a good resource in this conversation. He noted the Board would like a better understanding of the feasibility of this project and suggested a pilot program may be a good way to gauge ridership while understanding the difficulties in the investment. He referenced the electric ferry in Alabama as a case study, and noted that program was funded by an Environmental Protection Agency grant. He directed staff to continue working on this effort and bring updated information back to the Executive Committee in the Spring of 2021 for further discussion.

Action Taken

Informational item only. No action taken.

OTHER ITEMS

7. REVIEW OF DRAFT December 10, 2020 BOARD AGENDA

Recommended Consent Items

6. Zero-Emission Bus (ZEB) Project: 40-Foot Low-Floor Electric Buses – Issuance of Purchase Order to Gillig, LLC
Action would authorize the Chief Executive Officer (CEO) to issue a Purchase Order to Gillig for the purchase of five (5), 40-foot, Low-Floor Electric, Battery-Powered buses in the amount of $4,863,380.40

7. Roadway Worker Early Warning Alarm Technology Maintenance and Support – Contract Award
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. L1564.0-21, with Miller Ingenuity for Roadway Worker Early Warning Alarm Technology Maintenance and Support Services totaling $360,573.25 for five (5) years effective January 1, 2021.

8. Kearny Mesa Division (KMD) Underground Storage Tank Closure (KMD UST Closure Project) – Award Work Order Under a Job Order Contract (JOC)
Action would authorize the Chief Executive Officer (CEO) to execute Work Order MTSJOC275-14 to MTS Doc. No. PWG275.0-19, with ABC Construction Co., Inc. (ABC), for the closure of the KMD underground storage tank for a total cost of $120,918.48.

9. Fare Collection (Add Sales Tax and Ticket Vending Machine (TVM) Spare Parts and Gateway Services) – Contract Amendment
Action would authorize the Chief Executive Officer (CEO) to execute Amendment 5 to MTS Doc. No. G2091.0-18, with Innovations in Transportation, Inc. (INIT), for a total contract increase of $2,478,990.86.

10. Building C Rollup Door Replacement – Award Work Order Under Job Order Contract (JOC)
Action would authorize the Chief Executive Officer (CEO) to execute Work Order No. MTSJOC275-15 to MTS Doc. No. PWG275.0-19, with ABC Construction Co., Inc. (ABC), for the removal and replacement of the rollup doors, door threshold, and addition of flood barriers at Building C for a total cost of $251,853.51.

11. On-Call Job Order Contracting (JOC) Building and Facilities Construction Services – Contract Award
Action would authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. PWG324.0-21, with ABC Construction Co., Inc. (ABC), for on-call building and facilities construction services, in the amount of $7,000,000.00, for one (1) base year and four (4) option years beginning on January 1, 2021.

12. Low Carbon Fuel Standard Verification Services – Contract Award
Action would authorize the Chief Executive Officer (CEO) to: 1) Execute MTS Doc. No. G2429.0-21 with Rincon Consultants for the provision of Low Carbon Fuel Standard Verification Services for a three (3)-year base period, and one (1) three-year optional term, for a total of six (6) years, in the amount of $123,728.00; and 2) Exercise option at the CEO's discretion.

13. Bayside Double Track Imperial Avenue Transit Center (IMT) Construction Management Services – Work Order Amendment
Action authorize the Chief Executive Officer (CEO) to execute Work Order No. WOA2019-CM07 under MTS Doc. No. G2019.0-17 (in substantially the same format as Attachment A), with Kleinfelder Construction Services, Inc., for the Bayside Double Track IMT, Construction Management (CM) Services in the amount of $846,751.95

14. Bus Farebox Conversion – Contract Award
Action authorize the Chief Executive Officer (CEO) to execute MTS Doc. No. B0723.0-21, a Sole Source Agreement with Genfare, A Division of SPX Corporation, for Bus Farebox Conversion totaling $3,556,310.61 for ten (10) years effective January 1, 2021, subject to the MTS General Counsel approving modified MTS Standard Conditions.

8. COMMITTEE MEMBER COMMUNICATIONS AND OTHER BUSINESS

There was no Committee Member Communications and Other Business discussion.

9. NEXT MEETING DATE

The next Executive Committee meeting is scheduled for January 14, 2021, at 9:00 a.m.

10. ADJOURNMENT

Chair Fletcher adjourned the meeting at 10:13 a.m.

/S/ Nathan Fletcher
Chairperson

San Diego Metropolitan Transit System

Attachment: Roll Call Sheet

SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

ROLL CALL

MEETING OF (DATE):	December 3, 2020	CALL TO ORDER (TIME):	9:00am
RECESS:		RECONVENE:	
CLOSED SESSION:		RECONVENE:	
PUBLIC HEARING:		RECONVENE:	
ORDINANCES ADOPTED:		ADJOURN:	10:13am

BOARD MEMBER		(Alternate)		PRESENT (TIME ARRIVED)	ABSENT (TIME LEFT)
ARAMBULA	☐	(Hall)	☐	-	-
FLETCHER (Chair)	☒	(Cox)	☐	9:00am	10:13am
SALAS	☒	(Sandke)	☐	9:00am	10:13am
SOTELO-SOLIS	☒	(Vice Chair – no alternate)	☐	9:00am	10:13am
WARD	☒	(Montgomery)	☐	9:00am	10:13am

SIGNED BY THE CLERK OF THE BOARD: /S/ Dalia Gonzalez

CONFIRMED BY THE GENERAL COUNSEL: /S/ Karen Landers

Metropolitan Transit System

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Agenda Item No. 4

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

February 4, 2021

SUBJECT:

SAN DIEGO TRANSIT CORPORATION (SDTC) PENSION INVESTMENT STATUS (JEREMY MILLER, REPRESENTATIVE FROM RVK AND LARRY MARINESI)

INFORMATIONAL ONLY

Budget Impact

None at this time.

DISCUSSION:

The SDTC Employee Retirement Plan's (Plan) investment advisor, Jeremy Miller from RVK, will provide the Board of Directors with an update as to the performance of the Plan as well as general capital market performance. RVK's pension investment performance analysis (Attachment A) for the Plan as of June 30, 2020 includes assets with a market value of $166.6 million. During fiscal year 2020, the Plan's assets decreased by approximately $4.3 million, primarily due to the market performance post COVID-19. This resulted from a net investment gain of $0.9 million, partially offset by a net payout of benefits and expenses less contributions of $5.2 million.

Through February 2020, MTS was on pace to achieve targeted returns of 6.75% for the Plan, as returns exceeded 4.0% through February 2020. Given the market downturn beginning in March 2020 due to the COVID-19 pandemic, the MTS Board of Directors approved the use of one-time Coronavirus Aid, Relief, and Economic Security (CARES) Act funds to fund the difference of the February returns and the ending market performance of 0.5% (approximately 3.5%) to the Plan which has been calculated at $7.8 million. These funds will be added to the Plan in February 2021.

The Plan's eleven products achieved a combined investment return of 0.5% for the year. The Plan's returns over the past three, five and ten years were 4.1%, 4.2% and 6.0% respectively. Since inception (10/1/1982), the Plan's investments have returned 8.7%.

A significant rebound in market performance has taken place since the end of the fiscal year, and RVK will also provide an update to performance for the subsequent six months following fiscal year 2020 (July 2020 – December 2020), which has produced a combined investment return of 13.6% for the year to date.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachment: A. RVK Pension Investment Performance Analysis

Monthly Investment Performance Analysis

San Diego Transit Corporation

Employees Retirement Plan

Period Ended: June 30, 2020

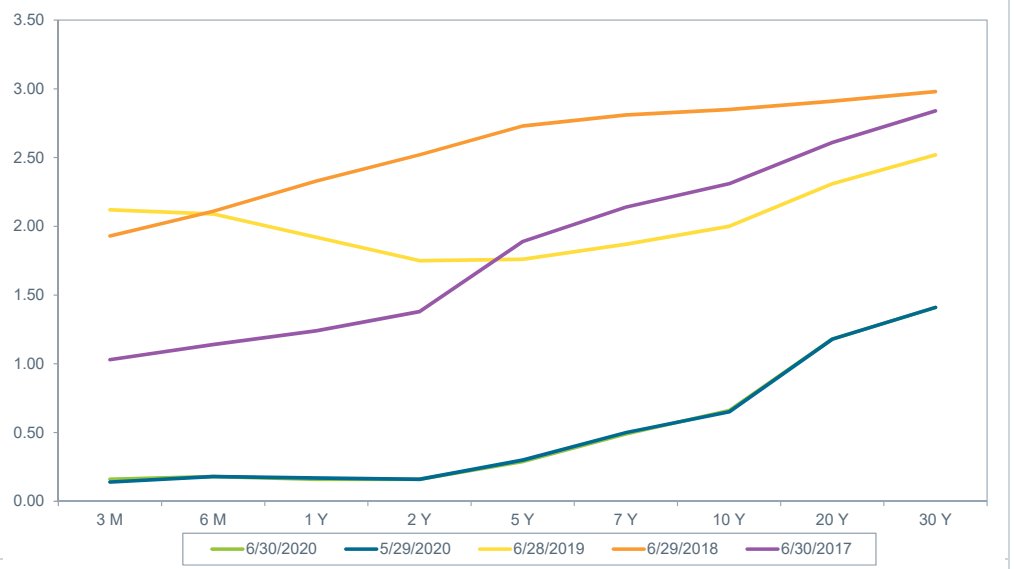
Capital Markets Review

As of June 30, 2020

General Market Commentary

- US equity markets started the month off strong, but pulled back sharply as COVID-19 case numbers began to spike in many parts of the United States. The increase in cases threaten to pause states' reopening plans, potentially stunting economic growth. Despite the increase in cases, most US and developed international markets returned low-single digits for the month, while emerging markets outperformed their developed counterparts, returning over 7%.
- At the June FOMC meeting, the Federal Reserve indicated its intention to keep interest rates low through at least 2022. By keeping the Federal funds rate at 0% - 0.25% for the foreseeable future, the Fed hopes to spur economic growth until the US economy is able to fully recover from the fallout of the coronavirus pandemic.
- Additionally, the Federal Reserve stated it would begin to buy new issuances of corporate debt directly from corporate issuers in order to help keep credit flowing freely amid the coronavirus pandemic. This program will allow many corporations to continue to borrow money at a time of increased financial stress.
- Equity markets posted positive returns in June as the S&P 500 (Cap Wtd) Index returned 1.99% and the MSCI EAFE (Net) Index returned 3.41%. Emerging markets returned 7.35% as measured by the MSCI EM (Net) Index.
- The Bloomberg US Aggregate Bond Index returned 0.63% in June, outperforming the 0.08% return by the Bloomberg US Treasury Intermediate Term Index. International fixed income markets returned 0.96%, as measured by the FTSE Non-US World Gov't Bond Index.
- Public real estate, as measured by the FTSE NAREIT Eq REITs Index (TR), returned 3.06% in June and 4.06% over the trailing five-year period.
- The Cambridge US Private Equity Index returned 13.94% for the trailing one-year period and 12.12% for the trailing five-year period ending December 2019.
- Absolute return strategies, as measured by the HFRI FOF Comp Index, returned 1.98% for the month and 0.48% over the trailing one-year period.
- Crude oil's price increased by 10.65% during the month, but has decreased by 32.84% YoY.

Treasury Yield Curve (%)



Economic Indicators	Jun-20		May-20	Jun-19	10 Yr	20 Yr
Federal Funds Rate (%)	0.08	▲	0.05	2.40	0.64	1.65
Breakeven Inflation - 5 Year (%)	1.17	▲	0.84	1.54	1.72	1.82
Breakeven Inflation - 10 Year (%)	1.34	▲	1.14	1.70	1.95	2.01
Breakeven Inflation - 30 Year (%)	1.56	▲	1.48	1.76	2.08	2.24
Bloomberg US Agg Bond Index - Yield (%)	1.25	▼	1.34	2.49	2.43	3.65
Bloomberg US Agg Bond Index - OAS (%)	0.68	▼	0.76	0.46	0.53	0.63
Bloomberg US Agg Credit Index - OAS (%)	1.42	▼	1.64	1.09	1.32	1.46
Bloomberg US Corp: HY Index - OAS (%)	6.26	▼	6.37	3.77	4.80	5.48
Capacity Utilization (%)	68.63	▲	65.09	77.69	76.63	76.82
Unemployment Rate (%)	11.1	▼	13.3	3.7	6.2	6.0
PMI - Manufacturing (%)	52.6	▲	43.1	51.6	53.8	52.5
Baltic Dry Index - Shipping	1,799	▲	504	1,354	1,155	2,305
Consumer Conf (Conf Board)	98.30	▲	85.90	124.30	94.00	91.75
CPI YoY (Headline) (%)	0.6	▲	0.1	1.6	1.7	2.1
CPI YoY (Core) (%)	1.2	—	1.2	2.1	1.9	2.0
PPI YoY (%)	-2.2	▲	-2.8	0.5	1.5	2.1
M2 YoY (%)	22.9	▲	21.9	4.7	6.5	6.4
US Dollar Total Weighted Index	120.86	▼	121.28	114.56	103.66	103.13
WTI Crude Oil per Barrel ($)	39	▲	35	58	70	62
Gold Spot per Oz ($)	1,781	▲	1,730	1,410	1,372	969

Treasury Yield Curve (%)	Jun-20	May-20	Jun-19	Jun-18	Jun-17
3 Month	0.16	0.14	2.12	1.93	1.03
6 Month	0.18	0.18	2.09	2.11	1.14
1 Year	0.16	0.17	1.92	2.33	1.24
2 Year	0.16	0.16	1.75	2.52	1.38
5 Year	0.29	0.30	1.76	2.73	1.89
7 Year	0.49	0.50	1.87	2.81	2.14
10 Year	0.66	0.65	2.00	2.85	2.31
20 Year	1.18	1.18	2.31	2.91	2.61
30 Year	1.41	1.41	2.52	2.98	2.84

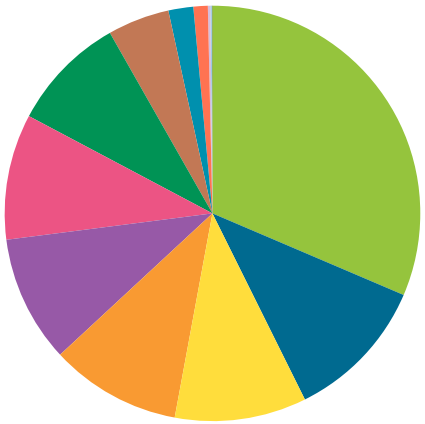
Market Performance (%)	MTD	QTD	CYTD	1 Yr	3 Yr	5 Yr	7 Yr	10 Yr
S&P 500 (Cap Wtd)	1.99	20.54	-3.08	7.51	10.73	10.73	12.13	13.99
Russell 2000	3.53	25.42	-12.98	-6.63	2.01	4.29	7.17	10.50
MSCI EAFE (Net)	3.41	14.88	-11.34	-5.13	0.81	2.05	3.93	5.73
MSCI EAFE SC (Net)	1.37	19.88	-13.11	-3.52	0.53	3.81	6.41	8.02
MSCI EM (Net)	7.35	18.08	-9.78	-3.39	1.90	2.86	3.22	3.27
Bloomberg US Agg Bond	0.63	2.90	6.14	8.74	5.32	4.30	3.96	3.82
ICE BofAML 3 Mo US T-Bill	0.01	0.02	0.60	1.63	1.77	1.19	0.86	0.64
NCREIF ODCE (Gross)	-1.56	-1.56	-0.60	2.22	5.66	7.31	9.07	10.80
FTSE NAREIT Eq REITs Index (TR)	3.06	11.82	-18.71	-13.04	0.03	4.06	5.36	9.05
HFRI FOF Comp Index	1.98	7.89	-1.59	0.48	2.25	1.49	2.70	2.79
Bloomberg Cmdty Index (TR)	2.28	5.08	-19.40	-17.38	-6.14	-7.69	-8.11	-5.82

Treasury data courtesy of the US Department of the Treasury. Economic data courtesy of Bloomberg Professional Service.

San Diego Transit Corporation Employees Retirement Plan
AA by Manager, AA vs. Target, and Schedule of Investable Assets

Asset Allocation by Manager

June 30, 2020 : $166,570,712

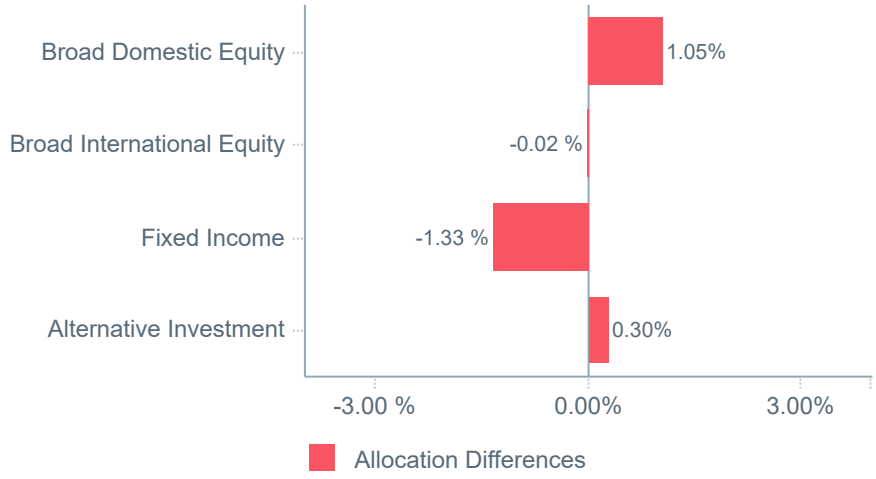


	Market Value ($)	Allocation (%)
Vanguard Tot Bd;Inst (VBTIX)	52,341,168	31.42
PIMCO:All Ast Ath;Inst (PAUIX)	18,726,512	11.24
Analytic US Low Volatility (CF)	17,071,737	10.25
MFS Intl Grth Cl 2 (CIT)	16,958,414	10.18
Westwood All Cap Val (CF)	16,446,615	9.87
PIMCO:RAE GlxUS;Inst (PZRIX)	16,318,798	9.80
GMO:Bchmk-Fr All;III (GBMFX)	15,009,249	9.01
BNYM PE US SMID Cap Grth Eq NL (CF)	8,010,999	4.81
Vanguard Infl-Prot;Adm (VAIPX)	3,225,791	1.94
Vanguard Energy Idx;Adm (VENAX)	1,866,994	1.12
Disbursement Account	328,512	0.20
Contribution Account	186,022	0.11
PAAMCO Pacific Hedged Strategy (CF)	79,902	0.05

Asset Allocation vs. Target Allocation

	Market Value ($)	Allocation (%)	Target (%)
Broad Domestic Equity	43,396,345	26.05	25.00
Broad International Equity	33,277,212	19.98	20.00
Fixed Income	56,081,492	33.67	35.00
Alternative Investment	33,815,663	20.30	20.00
Total Fund	166,570,712	100.00	100.00

Asset Allocation vs. Target Allocation Differences



Schedule of Investable Assets

Periods Ending	Beginning Market Value ($)	Net Cash Flow ($)	Gain/Loss ($)	Ending Market Value ($)	% Return	Unit Value
FYTD	170,855,911	-5,206,688	921,489	166,570,712	0.53	100.53

Performance shown is gross of fees. Market values and performance are preliminary and subject to change. Allocations shown may not sum up to 100% exactly due to rounding. Fiscal year ends 06/30. Market value shown for PAAMCO represents a 5% holdback amount, and will be paid out when the financial audit has been completed.

San Diego Transit Corporation Employees Retirement Plan
Asset Allocation & Performance

	Allocation		Performance (%)												
	Market Value ($)	%	MTD	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	Since Incep.	Inception Date
San Diego Transit Total Fund	**166,570,712**	**100.00**	**1.70**	**11.35**	**0.53**	**-4.15**	**0.53**	**4.05**	**4.16**	**6.00**	**16.17**	**-4.93**	**13.21**	**8.70**	**10/01/1982**
Policy Index			2.15	12.29	4.57	-1.46	4.57	5.74	5.12	6.69	19.02	-5.00	11.91	8.98	
Difference			-0.45	-0.94	-4.04	-2.69	-4.04	-1.69	-0.96	-0.69	-2.85	0.07	1.30	-0.28	
Domestic Equity	**43,396,345**	**26.05**	**0.49**	**20.43**	**-0.58**	**-7.71**	**-0.58**	**6.14**	**7.02**	**11.77**	**28.24**	**-7.70**	**17.26**	**7.17**	**03/01/2005**
Russell 3000 Index			2.29	22.03	6.53	-3.48	6.53	10.04	10.03	13.72	31.02	-5.24	21.13	8.61	
Difference			-1.80	-1.60	-7.11	-4.23	-7.11	-3.90	-3.01	-1.95	-2.78	-2.46	-3.87	-1.44	
International Equity	**33,277,212**	**19.98**	**4.23**	**15.92**	**-5.52**	**-11.93**	**-5.52**	**2.20**	**4.26**	**6.12**	**22.67**	**-11.76**	**30.60**	**3.40**	**03/01/2005**
MSCI ACW Ex US Index (USD) (Net)			4.52	16.12	-4.80	-11.00	-4.80	1.13	2.26	4.97	21.51	-14.20	27.19	4.13	
Difference			-0.29	-0.20	-0.72	-0.93	-0.72	1.07	2.00	1.15	1.16	2.44	3.41	-0.73	
Fixed Income	**56,081,492**	**33.67**	**0.72**	**3.01**	**8.73**	**6.13**	**8.73**	**5.29**	**3.79**	**4.22**	**8.66**	**0.07**	**3.57**	**5.21**	**03/01/2005**
Bloomberg US Agg Bond Index			0.63	2.90	8.74	6.14	8.74	5.32	4.30	3.82	8.72	0.01	3.54	4.46	
Difference			0.09	0.11	-0.01	-0.01	-0.01	-0.03	-0.51	0.40	-0.06	0.06	0.03	0.75	
Alternative Investment	**33,815,663**	**20.30**	**2.51**	**10.85**	**-5.97**	**-8.79**	**-5.97**	**0.23**	**0.90**	**2.96**	**9.71**	**-3.90**	**7.90**	**1.67**	**05/01/2007**
Alternative Investment Custom Index			2.27	12.70	3.42	-2.28	3.42	4.57	3.06	3.36	18.55	-3.69	4.12	1.79	
Difference			0.24	-1.85	-9.39	-6.51	-9.39	-4.34	-2.16	-0.40	-8.84	-0.21	3.78	-0.12	

Performance shown is gross of fees. Market values and performance are preliminary and subject to change. Fiscal year ends 06/30. Inception dates shown represent the first full month following initial funding. The Alternative Investment performance shown is a blend of gross and net of fees, due to gross of fees performance for PAAMCO Pacific Hedged Strategy (CF) being unavailable.

San Diego Transit Corporation Employees Retirement Plan
Comparative Performance

As of June 30, 2020

	MTD	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	Since Incep.	Inception Date
San Diego Transit Total Fund	**1.70**	**11.35**	**0.53**	**-4.15**	**0.53**	**4.05**	**4.16**	**6.00**	**16.17**	**-4.93**	**13.21**	**8.70**	**10/01/1982**
Policy Index	2.15	12.29	4.57	-1.46	4.57	5.74	5.12	6.69	19.02	-5.00	11.91	8.98	
Difference	-0.45	-0.94	-4.04	-2.69	-4.04	-1.69	-0.96	-0.69	-2.85	0.07	1.30	-0.28	
Westwood All Cap Val (CF) (1)	**-1.52**	**13.64**	**-6.11**	**-14.11**	**-6.11**	**3.71**	**5.00**	**10.69**	**28.56**	**-9.63**	**19.12**	**10.13**	**07/01/1986**
Russell 3000 Val Index (2)	-0.46	14.55	-9.42	-16.74	-9.42	1.41	4.41	10.30	26.26	-8.58	13.19	9.27	
Difference	-1.06	-0.91	3.31	2.63	3.31	2.30	0.59	0.39	2.30	-1.05	5.93	0.86	
Vanguard Energy Idx;Adm (VENAX)	**-0.81**	**33.38**	**-37.98**	**-36.48**	**-37.98**	**-14.08**	**N/A**	**N/A**	**9.45**	**-19.82**	**-2.29**	**-11.57**	**08/01/2016**
MSCI US IM Energy 25/50 Index (Gross)	-0.84	33.32	-38.06	-36.55	-38.06	-14.11	-10.80	-0.95	9.42	-19.80	-2.33	-11.60	
Difference	0.03	0.06	0.08	0.07	0.08	0.03	N/A	N/A	0.03	-0.02	0.04	0.03	
Analytic US Low Volatility (CF)	**0.21**	**16.11**	**1.27**	**-6.50**	**1.27**	**6.94**	**8.09**	**N/A**	**28.79**	**-4.85**	**13.37**	**10.52**	**10/01/2012**
MSCI US Min Vol Index (USD) (Net)	-1.12	12.67	-0.17	-6.81	-0.17	9.06	10.20	13.12	27.09	0.87	18.41	11.37	
Difference	1.33	3.44	1.44	0.31	1.44	-2.12	-2.11	N/A	1.70	-5.72	-5.04	-0.85	
Russell 1000 Index	2.21	21.82	7.48	-2.81	7.48	10.64	10.47	13.97	31.43	-4.78	21.69	12.70	
Difference	-2.00	-5.71	-6.21	-3.69	-6.21	-3.70	-2.38	N/A	-2.64	-0.07	-8.32	-2.18	
BNYM PE US SMID Cap Grth Eq NL (CF)	**5.84**	**46.05**	**34.09**	**24.97**	**34.09**	**24.87**	**17.48**	**18.97**	**40.61**	**-0.86**	**27.31**	**19.65**	**04/01/2009**
Russell 2500 Grth Index	3.68	32.87	9.21	2.02	9.21	12.10	9.57	14.45	32.65	-7.47	24.46	16.74	
Difference	2.16	13.18	24.88	22.95	24.88	12.77	7.91	4.52	7.96	6.61	2.85	2.91	
PIMCO:RAE GlxUS;Inst (PZRIX)	**3.84**	**14.51**	**-14.25**	**-19.30**	**-14.25**	**-3.27**	**0.21**	**N/A**	**16.57**	**-14.44**	**26.66**	**3.13**	**03/01/2012**
FTSE RAFI Dvl'd Ex US 1000 Index	3.83	14.01	-11.68	-17.31	-11.68	-2.15	0.65	4.83	18.85	-14.55	25.72	3.52	
Difference	0.01	0.50	-2.57	-1.99	-2.57	-1.12	-0.44	N/A	-2.28	0.11	0.94	-0.39	
MSCI ACW Ex US Index (USD) (Net)	4.52	16.12	-4.80	-11.00	-4.80	1.13	2.26	4.97	21.51	-14.20	27.19	3.54	
Difference	-0.68	-1.61	-9.45	-8.30	-9.45	-4.40	-2.05	N/A	-4.94	-0.24	-0.53	-0.41	
MFS Intl Grth Cl 2 (CIT)	**4.60**	**17.30**	**3.31**	**-4.55**	**3.31**	**8.00**	**8.36**	**N/A**	**28.56**	**-7.99**	**33.94**	**7.40**	**03/01/2013**
MSCI ACW Ex US Grth Index (USD) (Net)	5.08	19.11	5.80	-2.62	5.80	6.07	5.61	7.04	27.34	-14.43	32.01	5.69	
Difference	-0.48	-1.81	-2.49	-1.93	-2.49	1.93	2.75	N/A	1.22	6.44	1.93	1.71	
Vanguard Tot Bd;Inst (VBTIX)	**0.71**	**2.99**	**9.02**	**6.38**	**9.02**	**5.40**	**N/A**	**N/A**	**8.77**	**0.04**	**3.61**	**3.92**	**07/01/2016**
Vanguard Spl B US Agg Flt Adj Index	0.68	3.03	8.92	6.30	8.92	5.40	4.37	3.87	8.87	-0.08	3.63	3.93	
Difference	0.03	-0.04	0.10	0.08	0.10	0.00	N/A	N/A	-0.10	0.12	-0.02	-0.01	
Vanguard Infl-Prot;Adm (VAIPX)	**1.04**	**4.17**	**8.20**	**6.04**	**8.20**	**4.98**	**3.78**	**N/A**	**8.32**	**-1.31**	**3.04**	**3.56**	**08/01/2010**
Bloomberg US Trsy US TIPS Index	1.12	4.24	8.28	6.01	8.28	5.05	3.75	3.52	8.43	-1.26	3.01	3.53	
Difference	-0.08	-0.07	-0.08	0.03	-0.08	-0.07	0.03	N/A	-0.11	-0.05	0.03	0.03	

Performance shown is gross of fees, preliminary and subject to change. Manager inception dates shown represent the first full month following initial funding. Fiscal year ends 06/30. Please see Addendum for more information regarding custom hybrids denoted with a number in parentheses.

San Diego Transit Corporation Employees Retirement Plan
Comparative Performance

As of June 30, 2020

	MTD	QTD	FYTD	CYTD	1 Year	3 Years	5 Years	10 Years	2019	2018	2017	Since Incep.	Inception Date
PIMCO:All Ast Ath;Inst (PAUIX)	**3.43**	**13.39**	**-6.29**	**-8.32**	**-6.29**	**-0.05**	**1.78**	**3.24**	**8.62**	**-5.25**	**13.09**	**3.48**	**06/01/2008**
All Asset Custom Index (Eql Wtd) (3)	1.20	7.77	4.77	0.60	4.77	5.22	4.93	5.72	12.97	-1.62	8.94	4.65	
Difference	2.23	5.62	-11.06	-8.92	-11.06	-5.27	-3.15	-2.48	-4.35	-3.63	4.15	-1.17	
HFRI FOF: Cnsvt Index	1.73	5.57	-0.48	-2.03	-0.48	1.90	1.47	2.56	6.30	-0.87	4.12	1.13	
Difference	1.70	7.82	-5.81	-6.29	-5.81	-1.95	0.31	0.68	2.32	-4.38	8.97	2.35	
Consumer Price Index+5%	0.96	1.10	5.68	2.80	5.68	6.80	6.63	6.78	7.40	7.01	7.21	6.52	
Difference	2.47	12.29	-11.97	-11.12	-11.97	-6.85	-4.85	-3.54	1.22	-12.26	5.88	-3.04	
GMO:Bchmk-Fr All;III (GBMFX)	**1.40**	**8.08**	**-4.88**	**-9.04**	**-4.88**	**1.05**	**2.07**	**N/A**	**12.53**	**-4.49**	**14.10**	**1.98**	**04/01/2014**
60% MSCI ACW (Net)/40% Bbrg US Agg Idx	2.17	12.52	5.29	-1.01	5.29	6.16	5.87	7.27	19.41	-5.52	15.41	5.52	
Difference	-0.77	-4.44	-10.17	-8.03	-10.17	-5.11	-3.80	N/A	-6.88	1.03	-1.31	-3.54	
HFRI FOF: Cnsvt Index	1.73	5.57	-0.48	-2.03	-0.48	1.90	1.47	2.56	6.30	-0.87	4.12	1.82	
Difference	-0.33	2.51	-4.40	-7.01	-4.40	-0.85	0.60	N/A	6.23	-3.62	9.98	0.16	
Consumer Price Index+5%	0.96	1.10	5.68	2.80	5.68	6.80	6.63	6.78	7.40	7.01	7.21	6.47	
Difference	0.44	6.98	-10.56	-11.84	-10.56	-5.75	-4.56	N/A	5.13	-11.50	6.89	-4.49	

Performance shown is gross of fees, preliminary and subject to change. Manager inception dates shown represent the first full month following initial funding. Fiscal year ends 06/30. Please see Addendum for more information regarding custom hybrids denoted with a number in parentheses.

San Diego Transit Corporation Employees Retirement Plan
Fee Schedule

	Fee Schedule	Market Value As of 06/30/2020 ($)	Estimated Annual Fee ($)	Estimated Annual Fee (%)
Westwood All Cap Val (CF)	0.75 % of Assets	16,446,615	123,350	0.75
Vanguard Energy Idx;Adm (VENAX)	0.10 % of Assets	1,866,994	1,867	0.10
Analytic US Low Volatility (CF)	0.40 % of First $20 M 0.30 % of Next $80 M 0.20 % Thereafter	17,071,737	68,287	0.40
BNYM PE US SMID Cap Grth Eq NL (CF)	0.90 % of First $25 M 0.75 % Thereafter	8,010,999	72,099	0.90
PIMCO:RAE GlxUS;Inst (PZRIX)	0.55 % of Assets	16,318,798	89,753	0.55
MFS Intl Grth Cl 2 (CIT)	0.75 % of Assets	16,958,414	127,188	0.75
Vanguard Tot Bd;Inst (VBTIX)	0.04 % of Assets	52,341,168	18,319	0.04
Vanguard Infl-Prot;Adm (VAIPX)	0.10 % of Assets	3,225,791	3,226	0.10
PIMCO:All Ast Ath;Inst (PAUIX)	0.94 % of Assets	18,726,512	176,029	0.94
GMO:Bchmk-Fr All;III (GBMFX)	0.88 % of Assets	15,009,249	132,081	0.88
Contribution Account	0.18 % of Assets	186,022	335	0.18
Disbursement Account	0.18 % of Assets	328,512	591	0.18
San Diego Transit Total Fund		166,570,712	813,925	0.49

Mutual fund fees are sourced from Morningstar and/or the investment manager. The expense ratio for Vanguard Tot Bd;Inst (VBTIX) is 0.035%.

San Diego Transit Corporation Employees Retirement Plan
Addendum

Performance Related and Miscellaneous Comments

- Performance is gross of fees.
- Performance is annualized for periods greater than one year.
- Manager inception dates shown represent the first full month following initial funding.
- Fiscal year ends 06/30.
- The Alternative Investment performance shown is a blend of gross and net of fees, due to gross of fees performance for PAAMCO Pacific Hedged Strategy (CF) being unavailable.
- PIMCO:All Ast Ath;Inst (PAUIX) performance prior to 08/2011 is represented by PIMCO:All Asset;Inst (PAAIX).
- PIMCO:RAE GlxUS;Inst (PZRIX) performance prior to 06/2015 is represented by Research Affiliates Global AC Ex-US, LP (CF).
- Effective 01/02/2019, The Boston Company was rebranded under the Mellon Corporation.
- Vanguard Infl-Prot;Adm (VAIPX) performance prior to 05/2019 is represented by Vanguard Infl-Prot;Inst (VIPIX). Prior to 06/2012, performance is represented by Vanguard Infl-Prot;Adm (VAIPX).

Custom Hybrid Comments

- The Policy Index is calculated monthly and currently consists of 25% Russell 3000 Index, 20% MSCI ACW Ex US Index (USD) (Net), 35% Bloomberg US Agg Bond Index and 20% of the 60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx. Prior to 05/2020, consisted of 25% Russell 3000 Index, 20% MSCI ACW Ex US Index (USD) (Net), 32.50% Bloomberg US Agg Bond Index and 22.50% of the 60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx.
- Performance shown for Alternative Investment Custom Index represents 60% MSCI ACW (Net)/40% Bbrg Gbl Agg Idx from 07/2018 through present; and prior to 07/2018, consists of the HFRI FOF: Cnsvt Index.
- Performance shown for Westwood All Cap Val (CF) **(1)** represents Westwood All Cap Val (CF) from 08/2011 through present; beginning of month market value weighted average of Westwood LargeCap Value (CF) and Westwood SMidCap Equity (CF) from 07/2008 through 07/2011; Westwood LargeCap Value (CF) from 10/2004 through 06/2008; beginning of month market value weighted average of Westwood LargeCap Value (CF) and Westwood SmallCap Growth (CF) from 01/1997 through 09/2004; and Westwood LargeCap Value (CF) from 07/1986 through 12/1996.
- Performance shown for Russell 3000 Val Index **(2)** represents Russell 3000 Val Index from 08/2011 through present; beginning of month market value weighted average of Westwood LargeCap Value (CF) and Westwood SMidCap Equity (CF) applied to the Russell 1000 Val Index and Russell 2500 Val Index, respectively, from 07/2008 through 07/2011; Russell 1000 Val Index from 10/2004 through 06/2008; beginning of month market value weighted average of Westwood LargeCap Value (CF) and Westwood SmallCap Growth (CF) applied to the Russell 1000 Val Index and Russell 2000 Grth Index, respectively, from 01/1997 through 09/2004; and Russell 1000 Val Index from 01/1986 through 12/1996.
- Performance shown for All Asset Custom Index (Eql Wtd) **(3)** represents All Asset Custom Index (Eql Wtd) from 01/2014 through present; and All Asset Composite Index from 10/1997 through 12/2013.
- The All Asset Custom Index (Eql Wtd) is an equal-weighted hybrid created independently by RVK specifically for PIMCO's All Asset strategies, and it consists of the following benchmarks:

1. *Short Term Strategies*: ICE BofAML 1 Yr T-Bill Index
2. *US Core and Long Maturity Bond Strategies*: Bloomberg US Agg Bond Index
3. *EM and Gbl Bond Strategies*: PIMCO GLADI Index*
4. *Crdt Strategies*: ICE BofAML US Hi Yld Master II Index
5. *Inflation Related Strategies*: Bloomberg US Trsy US TIPS Index
6. *US Equity Strategies*: Russell 3000 Index
7. *Global Equity Strategies*: MSCI ACW Index (USD) (Net)
8. *Alternative Strategies*: ICE BofAML 3 Mo US T-Bill Index+3%

* Performance for the PIMCO Gbl Advantage Bond Index (London Close) prior to 01/01/2004 consists of the JPM EMBI Gbl Dvf'd Index (USD) (TR).

PORTLAND BOISE CHICAGO NEW YORK

RVK

SDTC Pension Investment Status

Executive Committee

February 4, 2021

MTS Pension Plans

- CalPERS Plans (Total Active/Retired):
  - San Diego Trolley Employees (SMART, IBEW, TEOA) (951)
  - San Diego Trolley Management (PARS Supplement) (95)
    - Discontinued in December 2012
  - MTS Administration & Management (372)
- SDTC Employee Retirement Plan (1,634)
  - Closed Plan for non-contract employees
  - Newly hired employees in Defined Contribution with SDTC match
    - ATU: 5% contribution with additional 2% match
    - IBEW: 5% contribution with additional 2% match (effective 7/2021)

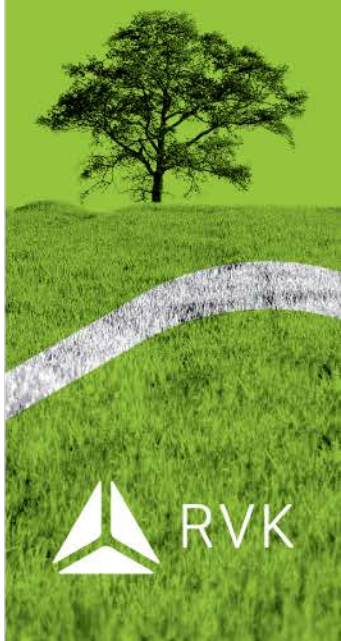
San Diego Transit Corporation

Investment Manager Fiscal Year 2020 Update

Investment Structure as of 6/30/2020

Asset Allocation vs. Target Allocation			
	Market Value ($)	Allocation (%)	Target (%)
Broad Domestic Equity	43,396,345	26.05	25.00
Broad International Equity	33,277,212	19.98	20.00
Fixed Income	56,081,492	33.67	35.00
Alternatives (Multi-Asset)	33,815,663	20.30	20.00
Total Fund	**166,570,712**	**100.00**	**100.00**

- Plan is diversified across four broad asset classes
- Goal is to maximize return, while assuming a prudent risk level
  - Closed Plan to non-management participants (2011/2012)
  - Risk Profile as measured by Volatility (higher % = riskier portfolio)
    - 6/30/2011: 3-Year Plan Risk = 16% (Percentile Rank: 31st of 100)
    - 6/30/2020: 3-Year Plan Risk = 9% (Percentile Rank: 76th of 100)
- Liability structure (mature plan, with net outflows) would suggest an Asset structure that is more conservative, diversified and liquid
  - Assets exist to satisfy the Liabilities, as capital preservation is necessary in mature plan. Less emphasis on equity allocation
  - Management fees reduced significantly through passive investing

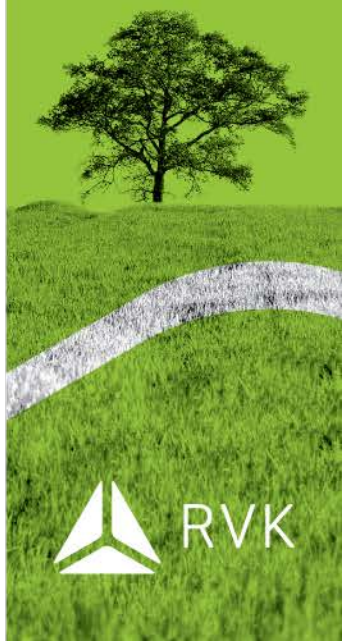


Investment Details as of 6/30/2020

Asset Allocation Detail					
Fund	**Asset Class**	**Strategy**	**Market Value ($)**	**Allocation (%)**	**Target (%)**
Westwood All Cap Value	US Equity	Active	16,446,615	9.87	
Vanguard Energy Index	US Equity	Passive	1,866,994	1.12	
Analytic US Low Volatility	US Equity	Active	17,071,737	10.25	
BNYM US SMID Growth	US Equity	Active	8,010,999	4.81	
Total US Equity			**43,396,345**	**26.05**	**25.00**
PIMCO RAE	Int'l Equity	Active	16,318,798	9.80	
MFS Int'l Growth	Int'l Equity	Active	16,958,414	10.18	
Total International Equity			**33,277,212**	**19.98**	**20.00**
Vanguard Total Bond	Fixed Income	Passive	52,341,168	31.42	
Vanguard Inflation-Protection	Fixed Income	Active	3,225,791	1.94	
Contribution Account	Fixed Income	NA	186,022	0.11	
Disbursement Account	Fixed Income	NA	328,512	0.20	
Total Fixed Income			**56,081,492**	**33.67**	**35.00**
PIMCO All Asset All Auth	GTAA	Active	18,726,512	11.24	
GMO Benchmark-Free	GTAA	Active	15,009,249	9.01	
PAAMCO Pacific Hedge*	Hedge Funds	Cash	79,902	0.05	
Total Alternatives			**33,815,663**	**20.30**	**20.00**
TOTAL FUND			**166,570,712**	**100.00**	**100.00**

* PAAMCO market value is residual cash post termination.

- Assets are allocated across 10 different products
- Product diversification reduces overall portfolio risks
- Allocation sizes for active managers are controlled, reducing concentration risks



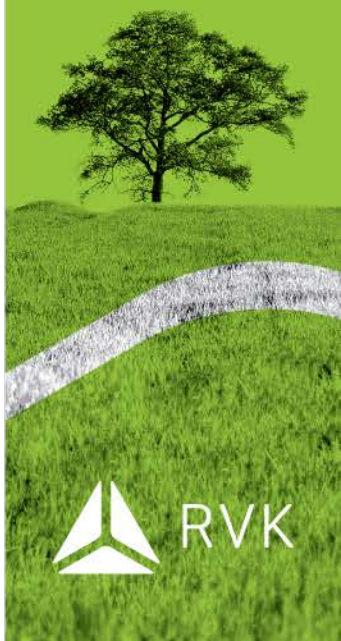
FY 2020 Performance

- January 2020 FY return at 4.43%
  - On track for meeting Actuarial target of 6.75%
- COVID-19 Market Impacts:
  - Significant market downturn due to uncertainty in marketplace
  - Plan's FY return dropped to -9.7% at the end of Q1 2020
  - Good performance in Q2 2020 to get in positive territory
  - Impact of investment drop from Jan – June = $7.8M and funded with CARES Act funds (actuarially calculated)
    - Contribution of $7.8M in February 2021

Schedule of Investable Assets					
Period Ending	Beginning Market Value ($)	Net Cash Flow ($)	Gain/Loss ($)	Ending Market Value ($)	Return (%)
FYTD	170,855,911	-5,206,688	921,489	166,570,712	0.53

- Plan returned 0.53% over the 2020 fiscal year
- Assumed Actuarial annual rate of return is 6.75%
- Underperformed the actuarial rate by 6.22% in fiscal year 2020

Returns are gross of fees.

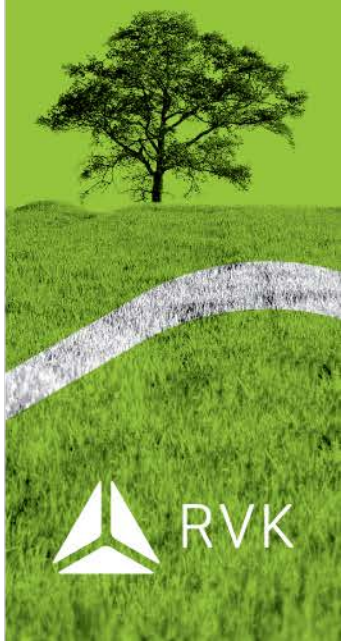


FYTD 2021 Performance

- Plan has returned 13.60% so far in the 2021 fiscal year
- Assumed Actuarial annual rate of return is 6.75%
- Outperformed the actuarial rate by 6.85% in the first six months of fiscal year 2021

Schedule of Investable Assets					
Period Ending	Beginning Market Value ($)	Net Cash Flow ($)	Gain/Loss ($)	Ending Market Value ($)	Return (%)
FYTD	166,570,712	-1,224,576	22,549,771	187,895,907	13.60

Returns are gross of fees.



Long Term Performance Details

As of 6/30/2020

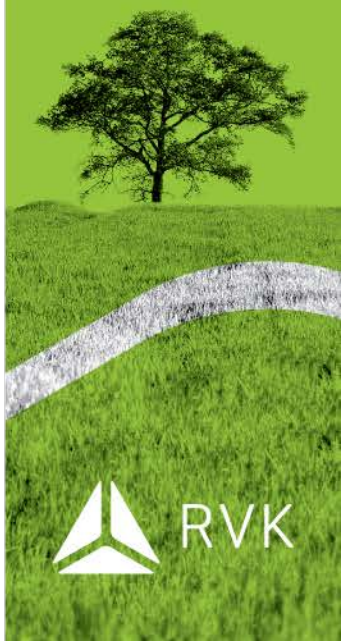
	Allocation		Performance (%)				
	Market Value ($)	%	1 Year	5 Years	10 Years	38 Year	Inception Date
San Diego Transit Total Fund	166,570,712	100.00	0.53	4.16	6.00	8.70	10/01/1982
Domestic Equity	43,396,345	26.05	-0.58	7.02	11.77		
International Equity	33,277,212	19.98	-5.52	4.26	6.12		
Fixed Income	56,081,492	33.67	8.73	3.79	4.22		
Alternative Investment	33,815,663	20.30	-5.97	0.90	2.96		

As of 12/31/2020

	Allocation		Performance (%)				
	Market Value ($)	%	1 Year	5 Years	10 Years	38 Year	Inception Date
San Diego Transit Total Fund	187,895,907	100.00	8.88	7.85	5.72	8.94	10/01/1982
Domestic Equity	50,939,163	27.11	13.11	11.94	11.44		
International Equity	39,680,679	21.12	9.68	10.89	6.04		
Fixed Income	59,906,207	31.88	7.74	4.14	3.96		
Alternative Investment	37,369,858	19.89	2.13	4.75	2.71		

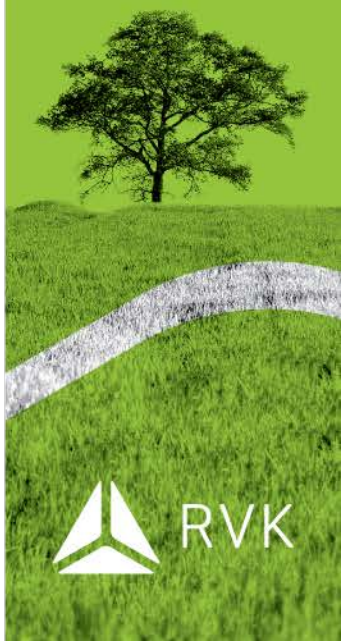
- Year to year returns will fluctuate significantly, some years above and some years below the Actuarial rate of return, but over the long-run the SDTC portfolio has consistently outperformed the 6.75% Actuarial return hurdle

Returns are gross of fees.



Investment Structure Summary

- Plan is well diversified across a verity of managers and broad asset classes
- Asset Allocation is intentionally designed to be more conservative given that the Plan is closed
  - Focus is on satisfying liabilities
  - Balance capital appreciation vs. capital preservation
- Management fees are kept low with the use of passive investments
- Portfolio is well positioned for the future given the liability structure of the Plan



Metropolitan Transit System

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San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

Agenda Item No. 5

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

February 4, 2021

SUBJECT:

SAN DIEGO TRANSIT CORPORATION (SDTC) EMPLOYEE RETIREMENT PLAN'S ACTUARIAL VALUATION AS OF JULY 1, 2020 (ANNE HARPER AND ALICE ALSBERGHE OF CHEIRON, INC. AND LARRY MARINESI)

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Executive Committee forward a recommendation to the Board of Directors to receive the SDTC Employee Retirement Plan's (Plan) actuarial valuation as of July 1, 2020 (Attachment A), and adopt the pension contribution amount of $17,585,592 for fiscal year 2022.

Budget Impact

Board adoption would result in the annual pension contribution of $17,585,592 for fiscal year 2022, consisting of both employer and employee contributions.

DISCUSSION:

The actuarial valuation of the Plan as of July 1, 2020 was completed in December 2020 by Cheiron, Inc., and the entire report is included as Attachment A. The purpose of the actuarial valuation is to measure, describe, and identify the following as of the valuation date:

- The financial condition of the Plan,
- Past and expected trends in the financial progress of the Plan, and
- Compute the total annual pension contribution amount.

The Plan's funding policy is to contribute an amount equal to the sum of:

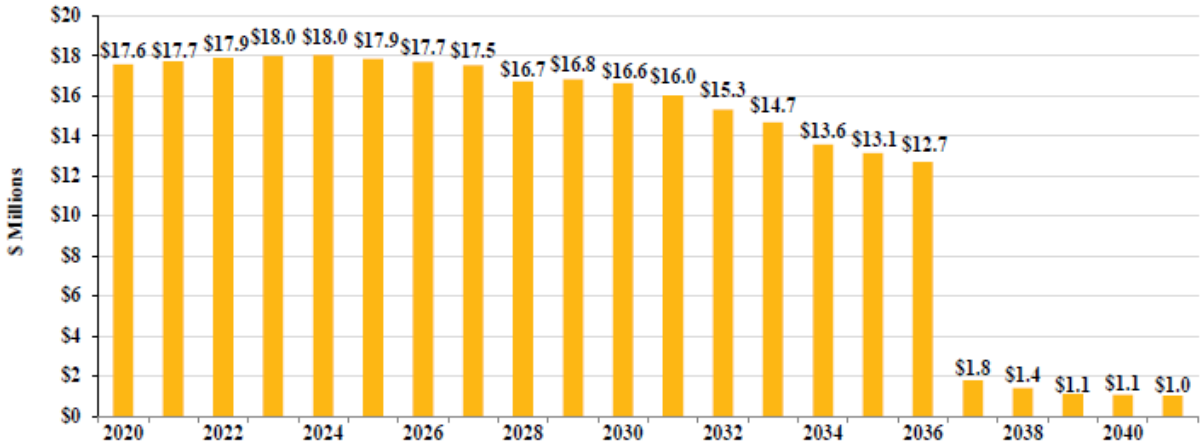
- The normal cost,
- Expected administrative expenses, and
- Amortization of the unfunded actuarial liability.

This valuation has calculated a total contribution of $17,585,592, an increase of 0.7% from fiscal year 2021, which would be used for the fiscal year 2022 budget.

As reflected in the following table, contributions are increasing year over year by approximately $120,000.

Total Contribution Reconciliation	
Fiscal Year 2020-2021, middle of the year	**17,465,703**
Change due to actuarial investment experience	612,716
Change due to liability experience	(411,331)
Changed due to effect of closed plan on benefits earned	(165,591)
Change due to other miscellaneous factors	84,095
Fiscal Year 2020-2021, middle of the year	**17,585,592**

Given the updated projected rates of return and the closed nature of the plan, the plan contributions are projected to level off over the next few years (excluding the one-time Coronavirus Aid, Relief, and Economic Security (CARES) Act amount of $7.8 million in 2021), and the Unfunded Actuarial Liability will be fully paid off by fiscal year 2036.



Anne Harper and Alice Alsberghe of Cheiron, Inc. will provide an overview of the report in more detail and be available for any questions.

Therefore, staff recommends that the MTS Executive Committee forward a recommendation to the Board of Directors to receive the SDTC Employee Retirement Plan's actuarial valuation as of July 1, 2020 (Attachment A), and adopt the pension contribution amount of $17,585,592 for fiscal year 2022.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachment: A. Actuarial Report

CHEIRON
Classic Values, Innovative Advice

Retirement Plans of San Diego Transit Corporation

Actuarial Valuation Report as of July 1, 2020

Produced by Cheiron

December 2020

TABLE OF CONTENTS

CHEIRON

Classic Values, Innovative Advice

December 11, 2020

Mr. Larry Marinesi
San Diego Transit Corporation
1255 Imperial Avenue, Suite 1000
San Diego, California 92101-7490

Dear Mr. Marinesi:

At your request, we have conducted an actuarial valuation of the Retirement Plans of San Diego Transit Corporation ("Plan," "SDTC") as of July 1, 2020. This report contains information on the Plan's assets, liabilities, and contribution levels. It also contains an assessment and disclosures of the Plan's risks. In the Foreword, we refer to the general approach employed in the preparation of this report.

The purpose of this report is to present the results of the annual actuarial valuation of the Plans. This report is for the use of the Retirement Board and the San Diego Metropolitan Transit System ("MTS") Board and its auditors in preparing financial reports in accordance with applicable law and accounting requirements.

In preparing our report, we relied on information (some oral and some written) supplied by the plan administrator. This information includes, but is not limited to, the Plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

The assumptions used in calculating the liabilities found in this report reflect the results of an Experience Study approved by the Budget Development Committee in April 2016, with the exception of the expected rate of return assumption which was adopted by the MTS Board in April 2019.

Future results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

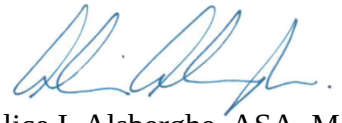
This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable law and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Mr. Larry Marinesi
San Diego Transit Corporation
December 11, 2020

This report was prepared exclusively for the Retirement Board and MTS Board for the purposes described herein. Other uses of this valuation report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,
Cheiron

Anne D. Harper, FSA, MAAA, EA
Principal Consulting Actuary



Alice I. Alsberghe, ASA, MAAA, EA
Consulting Actuary

FOREWORD

Cheiron has performed the actuarial valuation of the Retirement Plans of San Diego Transit Corporation as of July 1, 2020. The valuation report is organized as follows:

- In Section I, the **Executive Summary,** we describe the purpose of an actuarial valuation, summarize the key results found in this valuation, and disclose important trends;

- The **Main Body** of the report presents details on the Plan's

    - Section II – Assessment and Disclosure of Risk
    - Section III – Assets
    - Section IV – Liabilities
    - Section V – Contributions

- In the **Appendices,** we conclude our report with detailed information describing plan membership (Appendix A), actuarial assumptions and methods employed in the valuation (Appendix B), a summary of pertinent plan provisions (Appendix C), and a glossary of key actuarial terms (Appendix D).

Cheiron utilizes ProVal, an actuarial valuation application leased from Winklevoss Technologies (WinTech), to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have reviewed ProVal and have a basic understanding of it and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this report. The deterministic and stochastic projections shown in this report were developed using R-scan, our proprietary stochastic projection tool for assessing probabilities of different outcomes. We have relied on Cheiron colleagues who developed the tool, and we have used the tool in accordance with its purpose.

SECTION I – EXECUTIVE SUMMARY

The primary purpose of the actuarial valuation and this report is to measure, describe, and identify the following as of the valuation date:

- The financial condition of the Plan,
- Past and expected trends in the financial progress of the Plan, and
- The total contribution amount (employer and employee) to be made during Fiscal Year 2021-2022.

In the balance of this Executive Summary, we present (A) the basis upon which this year's valuation was completed, (B) the key results of this valuation including a summary of all key financial results, (C) changes in Plan cost, (D) an examination of historical trends, and (E) the future expected financial trends for the Plan.

A. Valuation Basis

This valuation determines total employer and employee contributions for the plan year.

The Plan's funding policy is to contribute an amount equal to the sum of:

- The normal cost under the Entry Age Normal Cost Method,
- Expected administrative expenses, and
- Amortization of the Unfunded Actuarial Liability (UAL) based on level dollar payments.

The employee will contribute according to the Plan schedules below. Member contribution rates in the future may change in response to collective bargaining. It will be the responsibility of the employer to contribute the remaining portion of the total contribution determined in this report.

- IBEW members contributed 3% of compensation to the Plan in April 2013 and 4% of compensation in April 2014. The contribution rate increased to 6% of compensation in April 2015 and increased to 8% of compensation in April 2016.

- ATU drivers and clerical members contributed 3% of compensation to the Plan in July 2013. The contribution rate increased to 5% of compensation in July 2014, to 6% in July 2015, and to 7% of compensation in July 2016. As of December 2017, the member contribution rate increased to 8% of compensation.

- Non-contract members hired before July 1, 2013 contributed 2% of compensation to the Plan prior to January 2014. The Non-contract member contributions increased to 4% of compensation in January 2014, to 6% in January 2015, and to 7% of compensation on January 1, 2016. As of January 1, 2017, the member contribution rate increased to 8% of compensation.

SECTION I – EXECUTIVE SUMMARY

- PEPRA: New Members must contribute half of the normal cost of the Plan, rounded to the nearest 0.25%. Currently, PEPRA members are contributing 6.25% of pay and the employer pays the remaining cost of the Plan. For the July 1, 2020 valuation, the PEPRA member rate remains at 6.25% of pay. The development of the PEPRA member rate can be found in Section V in the body of this report.

The SDTC Plans are closed to new entrants, except for Non-Contract members. A closed plan has very different dynamics as active plan membership declines and grows older and a larger portion of the Plan's liability shifts to payees. This dynamic shortens the investment horizon thus mitigating investment risk becomes more important. If the asset mix changes to reflect the expected pattern of benefit payments, it will become more conservative and the expected return on plan assets will decrease. Thus, adjusting the Plan's investment rate of return to be consistent with the expected trending decrease of future asset returns should continue to be monitored.

The true cost of the Plan is a function of actual Plan experience, not the actuarial assumptions. It is important to set realistic assumptions to mitigate the risk of Plan contribution volatility. In Section II of this report, we provide a detailed assessment and disclosure of the Plan's risks.

This valuation was prepared based on the Plan provisions as summarized in Appendix C. There have been no changes in plan provisions since the prior valuation. The results of this valuation do not include members participating in the defined contribution plans.

B. Key Results of this Valuation

The key results of the July 1, 2020 actuarial valuation are as follows:

- The actuarial contribution shown in this report is the total contribution required from both the employer and the employees. The total contribution increased from $17,465,703 to $17,585,592, an increase of about $120,000 from the July 1, 2019 valuation. This increase is primarily due to the recognition of the current year's asset loss and prior years' deferred asset losses in the Actuarial Value of Assets partially offset by favorable liability experience. See Table I-2 for a reconciliation of the contribution cost from last year to this year that includes all components of the change.

- During the plan year ending June 30, 2020, the return on Plan assets was 0.01% based on the Market Value of Assets (MVA) compared to the 6.75% assumed rate of return. A return over 6.75% would result in an actuarial gain, and a return lower than 6.75% would result in an actuarial loss. The actual market rate of return was lower than expected, resulting in unexpected earnings of ($11,318,912) which is an actuarial loss.

- The Actuarial Value of Assets (AVA) recognizes 20% of the difference between the expected and actual return, referred to as "Unexpected Earnings", on the Market Value of Assets (MVA) for each of the prior five years. The AVA experienced a return of 3.38%. See Table III-3 and III-4 for the detailed calculations.

- The Actuarial Liability of the Plan was less than expected by $3,159,945. The liability experience gain was primarily driven by salary increases that were lower than expected and changes to monthly benefit amounts for certain payees due to MTS' recalculation of retiree benefits.

- The Plan's funded ratio, the ratio of actuarial (smoothed) assets over the Actuarial Liability, slightly increased from 55.8% last year to 56.3% as of July 1, 2020. However, the funded ratio based on the Market Value of Assets decreased from 54.0% to 52.6%.

- The Unfunded Actuarial Liability (UAL) is the excess of the Plan's Actuarial Liability over the Actuarial Value of Assets. The Plan's UAL decreased from $139,105,186 to $137,726,531 as of July 1, 2020.

SECTION I – EXECUTIVE SUMMARY

Below we present Table I-1, which summarizes all the key results of the valuation with respect to membership, assets and liabilities, and contributions. The results are presented and compared for both the current and prior plan year.

Table I-1
Summary of Principal Plan Results

Participant Counts	**July 1, 2019**	**July 1, 2020**	**% Change**
Active Participants	424	389	-8.3%
Participants Receiving a Benefit	1,011	1,028	1.7%
Inactive Participants	218	217	-0.5%
Total	1,653	1,634	-1.1%
Projected Plan Member Payroll [1] for Fiscal Year 2020 and 2021	$ 25,519,608	$ 23,766,459	-6.9%
Assets and Liabilities			
Actuarial Liability (AL)	$ 314,919,978	$ 315,167,505	0.1%
Actuarial Value of Assets (AVA)	175,814,792	177,440,974	0.9%
Unfunded Actuarial Liability (UAL)	$ 139,105,186	$ 137,726,531	-1.0%
Market Value of Assets (MVA)	$ 170,139,617	$ 165,921,800	-2.5%
Funded Ratio (AVA)	55.8%	56.3%	0.5%
Funded Ratio (MVA)	54.0%	52.6%	-1.4%
Contributions	**FY 2020-2021**	**FY 2021-2022**	
Total Normal Cost [2]	$ 3,728,085	$ 3,489,689	-6.4%
Total UAL Contribution	13,737,618	14,095,903	2.6%
Total Contribution (middle of year)	$ 17,465,703	$ 17,585,592	0.7%

[1] *Based on valuation data projected using half-year of salary increases but excludes payroll for members expected to leave employment or retire during the year.*

[2] *Includes assumed administrative expenses of $282,045 payable during FY 2020-2021 and $289,801 payable during FY 2021-2022.*

C. Changes in Plan Cost

Table I-2 below summarizes the impact of actuarial experience on Plan cost.

Table I-2
Total Contribution Reconciliation

Fiscal Year 2020-2021, middle of year	**$**	**17,465,703**
Change due to actuarial investment experience		612,716
Change due to liability experience		(411,331)
Change due to effect of closed plan on benefits earned		(165,591)
Change due to other miscellaneous factors		84,095
Fiscal Year 2021-2022, middle of year	**$**	**17,585,592**

An analysis of the cost **changes from the prior valuation** reveals the following:

- The actual return on the Actuarial Value Assets (AVA) was 3.38% compared to the expected return of 6.75%, resulting in a negative variance (actuarial loss) of $5,857,988 and an increase to the total contribution of $612,716. The average annual return for the last five years on the Market Value of Assets (MVA) was 3.7%, below the 6.75% target. As a result, there are net deferred actuarial losses of approximately $11.5 million, the difference between the AVA and MVA.

- Actual demographic experience will always differ from the actuarial assumptions. Salary experience, Cost-of-Living Adjustment (COLA) experience, and demographic experience of the Plan – rates of retirement, death, disability, and termination –were different than expected based on the actuarial assumptions, causing a decrease in the contribution of $411,331. The liability experience gain was primarily driven by salary increases that were lower than expected and changes to monthly benefit amounts for certain payees due to MTS' recalculation of retiree benefits.

- Closing the Plan to most new entrants decreases the total amount of benefits that are being earned as members continue to leave employment through retirements, terminations, disabilities, and death, and thus cease to earn additional benefits. This decreased the Plan contribution by $165,591.

- The net effect of other miscellaneous factors, including actual administrative expenses being different than expected and a contribution timing adjustment, increased the Plan contributions by $84,095.

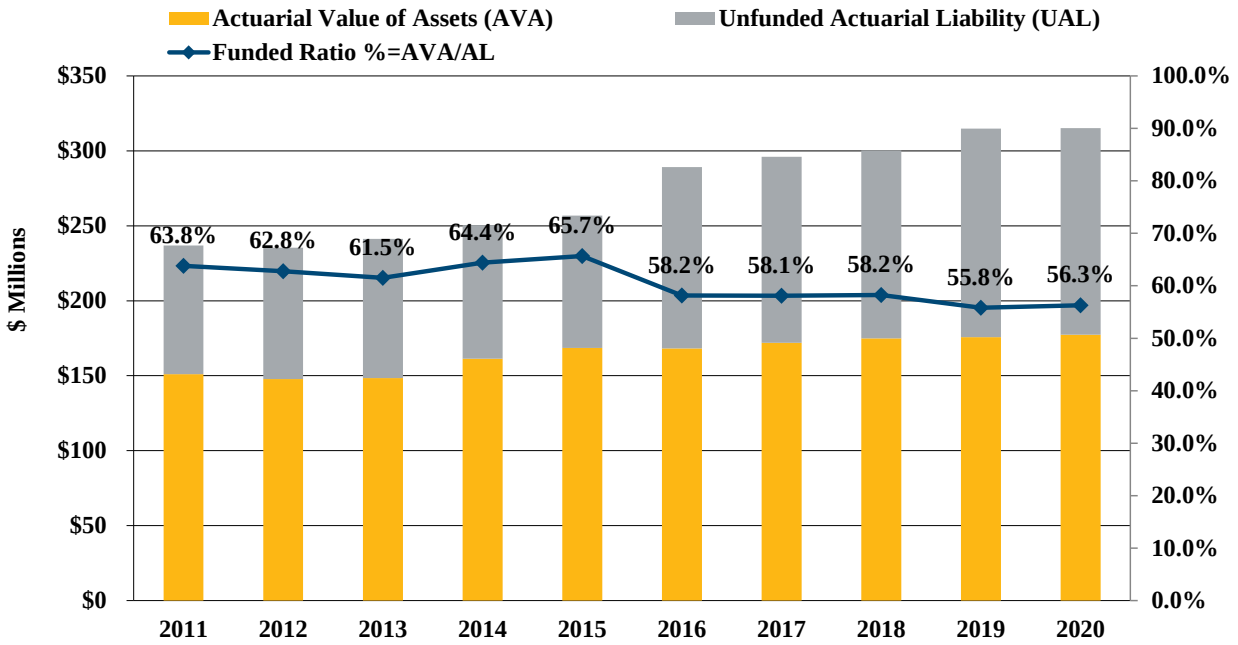
D. Historical Trends

Despite the fact that for most retirement plans the greatest attention is given to the current valuation results – in particular the size of the current Unfunded Actuarial Liability (UAL) and the total contribution – it is important to remember that each valuation is merely a snapshot in the long-term progress of a pension fund. It is important to judge a current year's valuation results relative to historical trends, as well as trends expected into the future.

Assets and Liabilities

The chart below presents the Actuarial Value of Assets (gold bars), Unfunded Actuarial Liability (gray bars), and Funded Ratio (navy line). The top of the bars (sum of gold and gray bars) depicts the total Actuarial Liability. Over the ten-year period shown, the Actuarial Liability has been increasing, however, the Actuarial Value of Assets are relatively level. This in turn leads to a decreasing funded ratio.

Following the severe market downturn in 2008, the funded ratio decreased year over year until 2013 given the phase-in recognition of deferred investment losses in the Actuarial Value of Assets. The funded ratio decreased again in 2016 to 58.2% following an actuarial experience study which significantly increased the Actuarial Liability. From 2016 to 2018, the funded ratio remained stable. In 2019, the funded ratio decreased primarily due to a reduction in the discount rate assumption from 7.00% to 6.75%. The funded ratio of 56.3% in 2020 increased slightly by 0.5% from 2019. Although the Plan experienced a net actuarial loss, the UAL decreased by $1.4 million since the Actuarial Value of Asset increased by more than the increase in the Actuarial Liability.



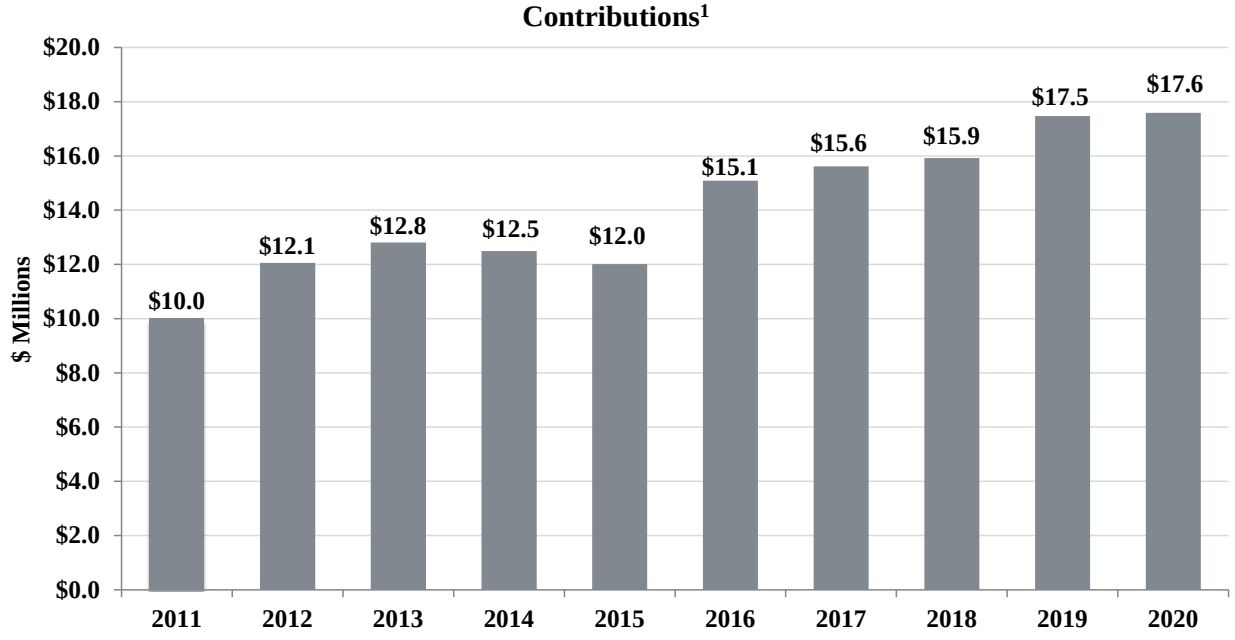
SECTION I – EXECUTIVE SUMMARY

Contributions

The chart below shows a history of the Plan's actuarially determined total contribution. The Plan's actuarially determined contributions increased from 2011 to 2012 primarily due to the phasing in over five years of the 2009 asset loss, along with assumption changes in 2010, and actuarial funding policy changes in 2012. The contributions leveled off between $12-$13 million from 2012 to 2015.

In 2016, the Board approved actuarial assumption changes based on the recommendations in the Actuarial Experience Study for July 1, 2010 through June 30, 2015. Most notably were the new mortality assumptions and the assumed investment rate of return decreasing from 7.50% to 7.00%. After 2016, investment experience on the AVA has been the primary source of the contribution increases. In 2019, the further reduction of the discount rate assumption to 6.75% also increased the contribution level to $17.5 million. Offsetting actuarial liability gains and actuarial asset losses kept the contributions steady in 2020 compared to 2019.

A reconciliation of the contributions from the 2019 to 2020 valuations can be found in Table I-2 of this report.

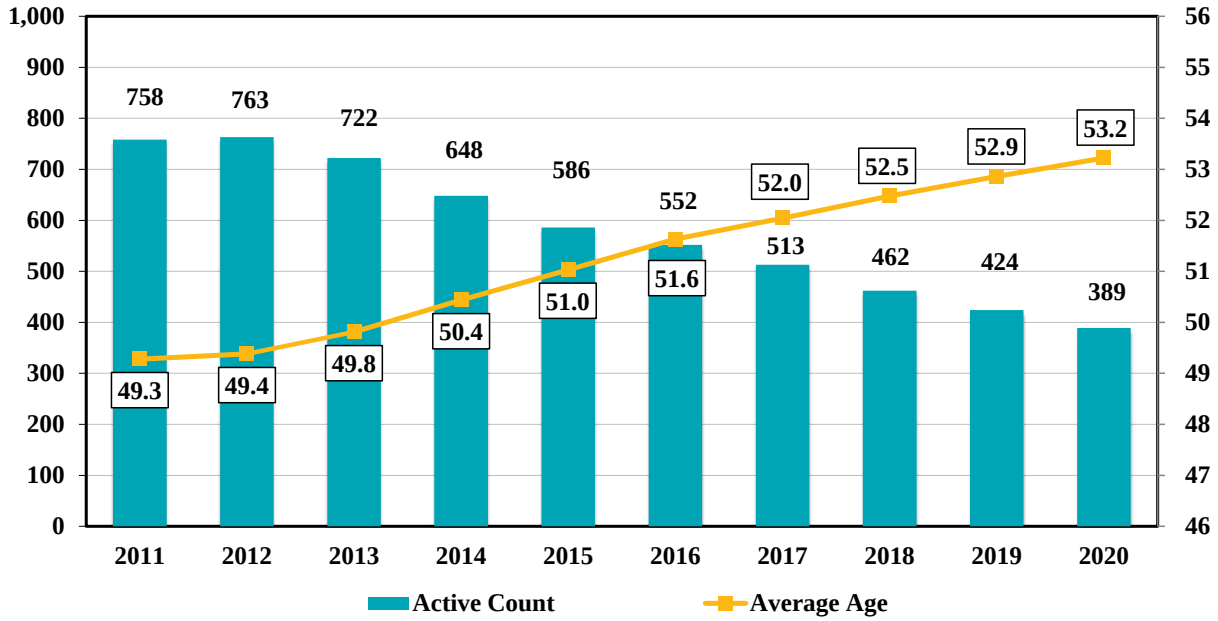


[1] *Beginning with 2015, contribution amounts are mid-year values for the upcoming fiscal year.*

SECTION I – EXECUTIVE SUMMARY

Active Participant Trends

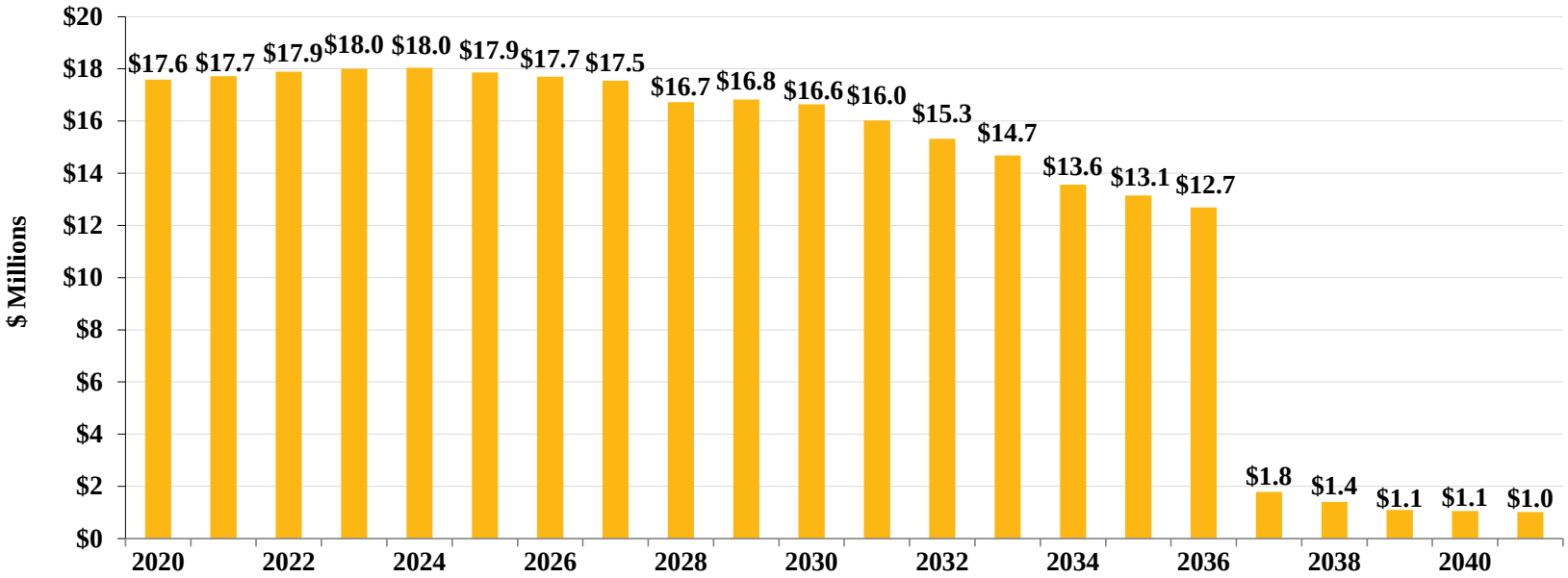
The number and average age of active Plan members for the last 10 years is shown in the chart below. We can see that membership has declined from 758 actives on July 1, 2011 to 389 actives on July 1, 2020, a decrease of 49%. In addition, the average age of an active member has increased by almost four years during the period shown. These trends are expected to continue, as most new employees participate instead in the defined contribution plan.



E. Future Expected Financial Trends

The analysis of projected financial trends is perhaps the most important component of this valuation. In this section, we present our assessment of the implications of the July 1, 2020 valuation results in terms of benefit security (assets over liabilities) and contributions over the next 20 years. All the projections in this section assume that the Plan will exactly achieve the 6.75% investment return assumption and all other actuarial assumptions will be met each year, which is clearly an impossibility. We assume the current funding method and amortization policy adopted in 2012, will remain in place throughout the projection period.

Projection of Total Plan Contributions, 6.75% return each year



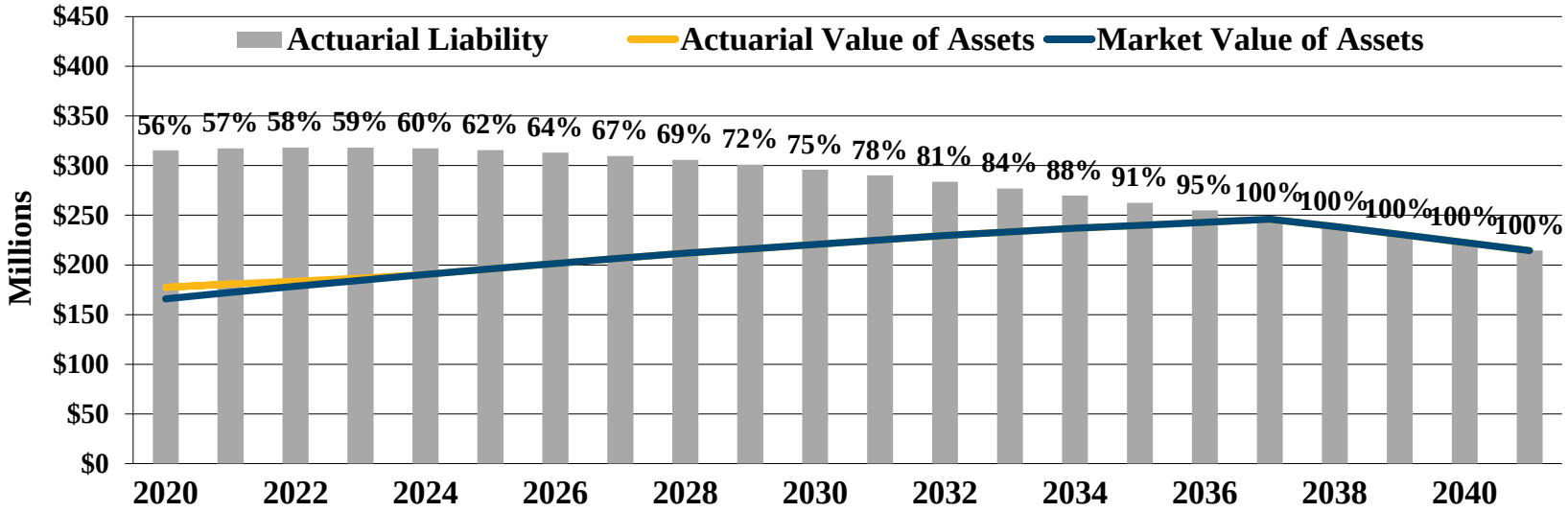
The graph shows that the Plan's contribution is expected to increase for the next four years to $18.0 million as previous years' investment losses are fully recognized. Currently, there are $11.5 million in deferred losses. Then the Plan's contributions are expected to steadily decline to $12.7 million in 2036. The gradual decline in the contribution is due to the decrease in the annual benefits that are earned as the number of active members decline since the Plan is closed to most new entrants. During Fiscal Year 2036-37, the last payment for the majority of the Plan's expected UAL will be made.

SECTION I – EXECUTIVE SUMMARY

Asset and Liability Projections:

The following graph shows the projection of assets and liabilities assuming that assets will earn the 6.75% assumption each year during the projection period.

Projection of Assets and Liabilities, 6.75% return each year



The funded status is expected to gradually increase over the projection period. The Plan is projected to be fully funded by 2037 assuming the actuarial assumptions are achieved. However, it is the actual return on Plan assets that will determine the future funding status and contribution to the Plan.

SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience, but actual future experience will undoubtedly be different and may be significantly different. This section of the report is intended to identify the primary risks to the plan, provide some background information about those risks, and provide an assessment of those risks.

Identification of Risks

The fundamental risk to a pension plan is that the contributions needed to pay the benefits become unaffordable. While we believe it is unlikely that the Plan by itself would become unaffordable, the contributions needed to support the Plan may differ significantly from expectations. While there are a number of factors that could lead to contribution amounts deviating from expectations, we believe the primary sources are:

- Investment risk,
- Inflation risk, and
- Contribution risk.

Other risks that we have not identified may also turn out to be important.

Investment Risk is the potential for investment returns to be different than expected. Lower investment returns than anticipated will increase the Unfunded Actuarial Liability (UAL) necessitating higher contributions in the future unless there are other gains that offset these investment losses. In contrast, higher investment returns than anticipated may create a potentially significant surplus that could be difficult to use until all benefits have been paid. Expected future investment returns and their potential volatility are determined by the Plan's asset allocation.

Inflation risk is the potential for actual inflation to be different than expected. Retirement benefits under the plan for the Non-Contract retirees who retired on or after June 30, 1999 are potentially increased annually for inflation with certain caps. Higher inflation than expected could result in the payment of greater benefits, and lower inflation than expected could result in the payment of lower benefits.

Contribution risk is the potential for actual future actuarially determined contributions to deviate from expected future contributions to an extent that they become unaffordable. The Plan's funding policy is to determine an Actuarially Determined Contribution (ADC) equal to the sum of the normal cost, amortization of the UAL, and the Plan's expected administrative expenses. The UAL is amortized in level dollar payments with several layers with differing amortization periods. The UAL is currently expected to be fully paid for as of 2037. However, as 2037 gets closer and the Plan's remaining amortization period shortens, a significant loss or change in assumption may cause a large increase in the ADC. While the funding policy can be changed when such a situation occurs, any reduction in the ADC will result in a slower recovery in funded status.

SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Plan Maturity Measures

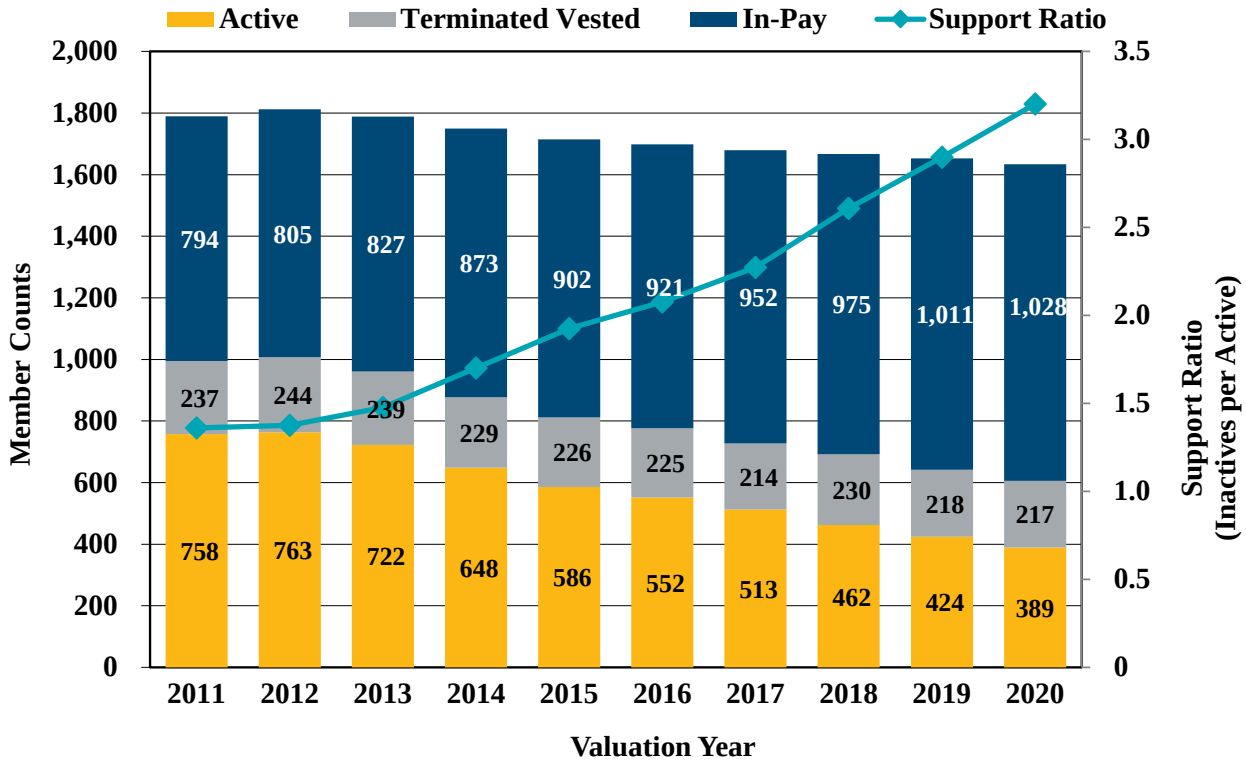
The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. Before assessing each of these risks, it is important to understand the maturity of the plan.

Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic – the larger the plan is compared to the contribution or revenue base that supports it; the more sensitive the plan will be to risk. Given that the Plan has been closed to most new entrants since 2012, measures specific to the Plan show significant increases in maturity while maturity measures in context of Metropolitan Transit System as a whole show declining maturity.

Support Ratio (Inactives per Active)

One simple measure of plan maturity is the ratio of the number of inactive members (those receiving benefits or entitled to a deferred benefit) to the number of active members. For a closed plan, the Support Ratio is expected to increase significantly as the active members retire or terminate and there are no new entrants replacing them. The chart below shows the growth in the Support Ratio for the Plan for the past 10 years.

Support Ratio (Inactives per Active)

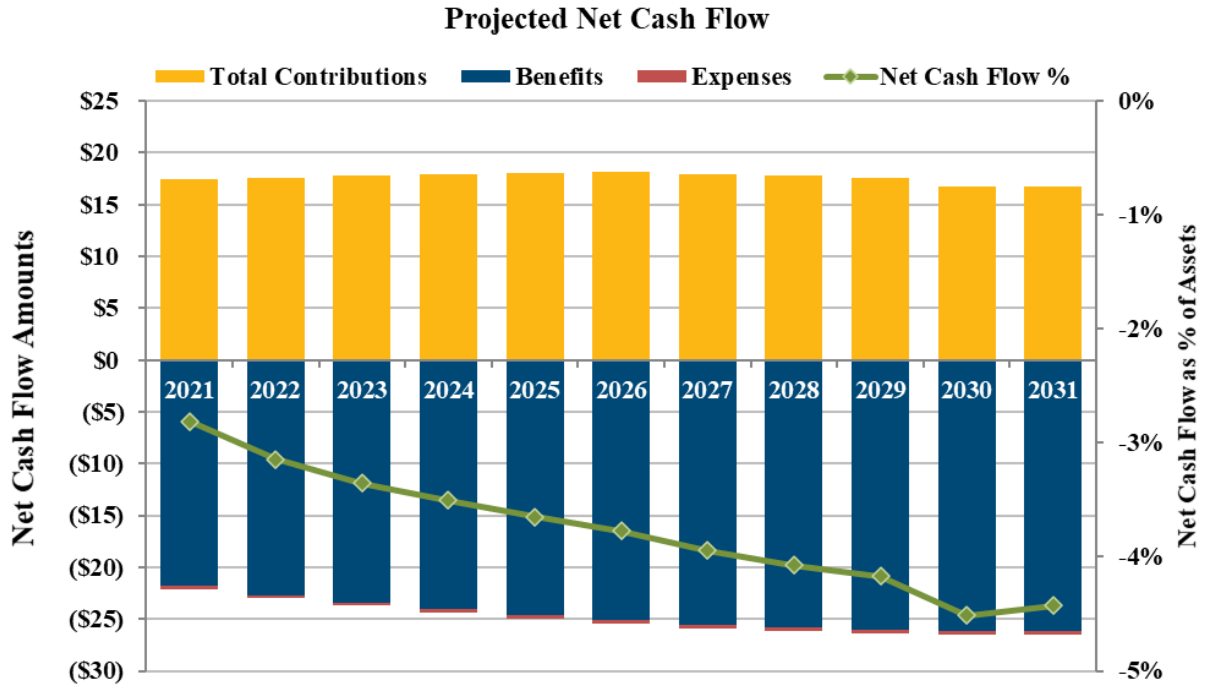


SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Net Cash Flow

The net cash flow of the plan as a percentage of the beginning of year assets indicates the sensitivity of the plan to short-term investment returns. Net cash flow is equal to contributions less benefit payments and administrative expenses. Mature plans can have large amounts of benefit payments compared to contributions, particularly if they are well funded.

The chart below shows the projected net cash flow for the next 10 fiscal years. The bars represent the dollar amounts of the different components of the projected net cash flow, and the line represents the net cash flow as a percentage of the assets as of the beginning of the fiscal year.



The net cash flow has been negative since at least 2013. The net cash flow is expected to become increasingly negative as benefit payments grow, the Plan becomes better funded and contributions are reduced.

The first issue the negative cash flow presents to the Plan is a need for liquidity in the investments so that benefits can be paid. When the cash flow was positive or close to neutral, benefits could be paid out of contributions without liquidating investments. As net cash flow becomes increasingly negative, the benefit payments will require liquidation of some investments (at least to the extent the bond portfolio doesn't generate sufficient cash income).

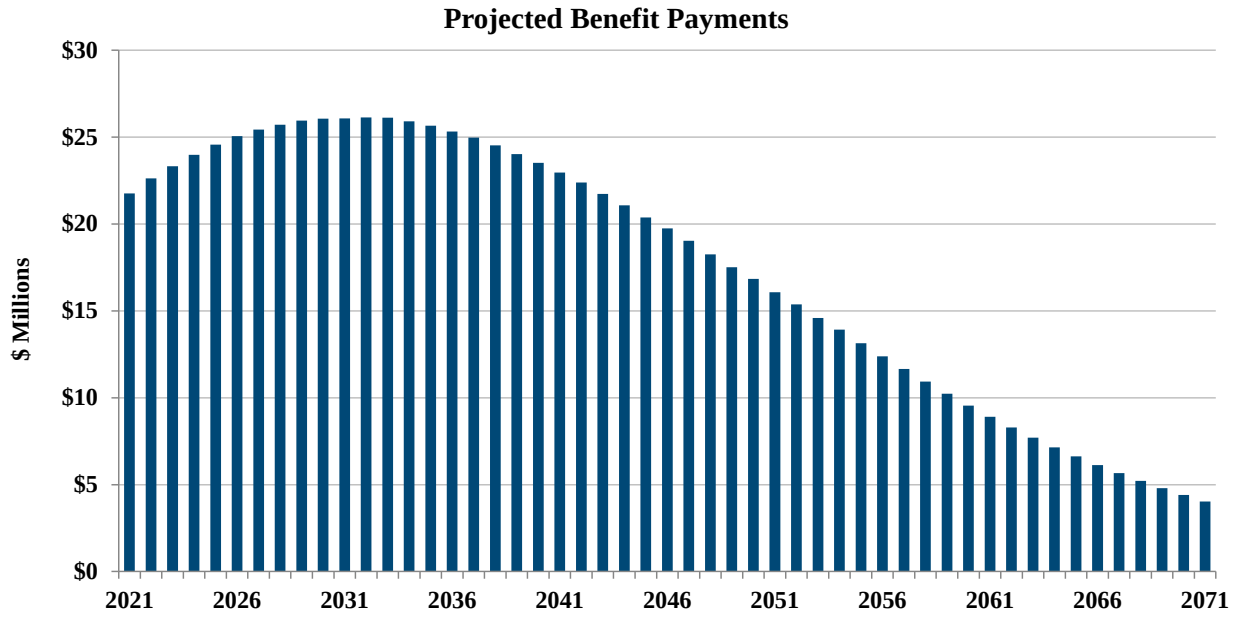
The other change of note is the sensitivity to short-term investment returns. Investment losses in the short term are compounded by the net withdrawal from the plan leaving a smaller asset base to try to recover from the investment losses. On the other hand, large investment gains in the

short term also tend to have a longer beneficial effect as any future losses are relative to a smaller liability base due to the negative cash flow.

Assessing Costs and Risks

A closed pension plan will ultimately either end up with excess assets after all benefits have been paid or run out of assets before all benefits have been paid. If the Plan develops surplus assets, it may be able to reduce the risk in its investment portfolio, immunize investments, or purchase annuities to settle the remaining obligation. However, such an approach may not be the objective for MTS, and if the surplus assets exceed the additional amounts needed to purchase annuities or immunize the portfolio, it is not clear how they could be used until all benefits have been paid.

If the Plan, on the other hand, were to run out of assets, MTS would be forced to pay benefits directly on a pay-as-you-go basis. As long as MTS can afford the pay-as-you-go costs, benefits would remain secure. The chart below shows a projection of expected benefit payments for the closed plan.

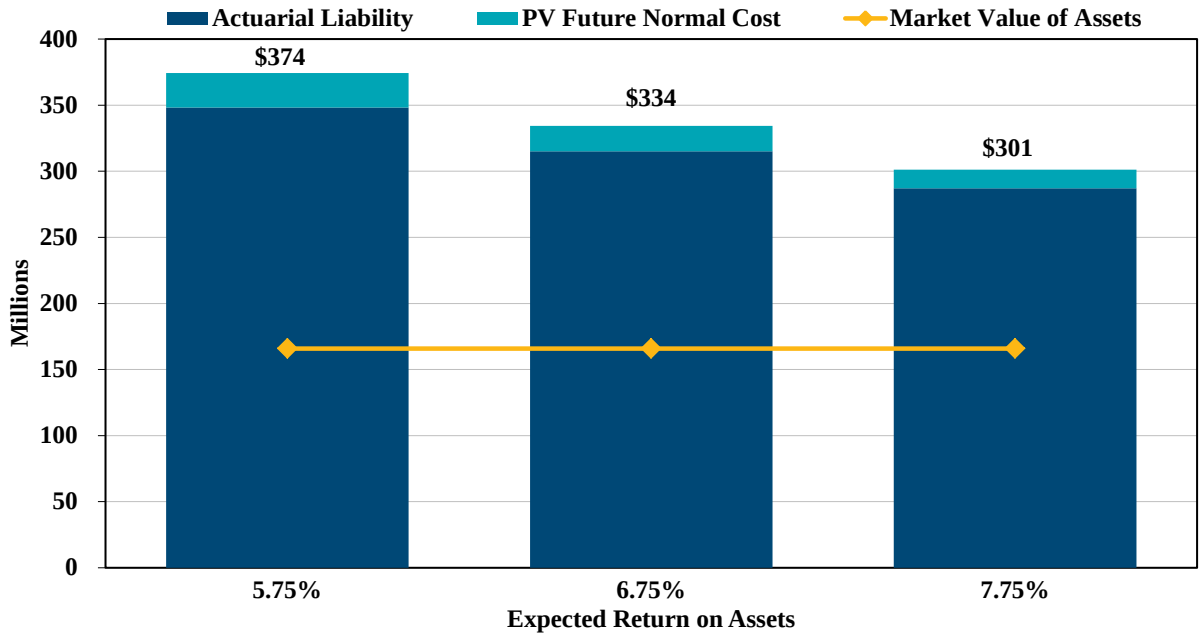


SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Sensitivity to Investment Returns

The chart below compares assets to the present value of all projected future benefits discounted at the current expected rate of return and at investment return 100 basis points above and below the expected rate of return. The present value of future benefits is shown as a bar with the portion attributable to past service in dark blue (Actuarial Liability) and the portion attributable to future service in teal (Present Value of Future Normal Costs). The Market Value of Assets is shown by the gold line.

Present Value of Future Benefits versus Assets



If investments return 6.75% annually, the Plan would need approximately $334 million in assets today to pay all projected benefits compared to current assets of $166 million. If investment returns are only 5.75%, the Plan would need approximately $374 million in assets today, and if investment returns are 7.75%, the Plan would need approximately $301 million in assets today.

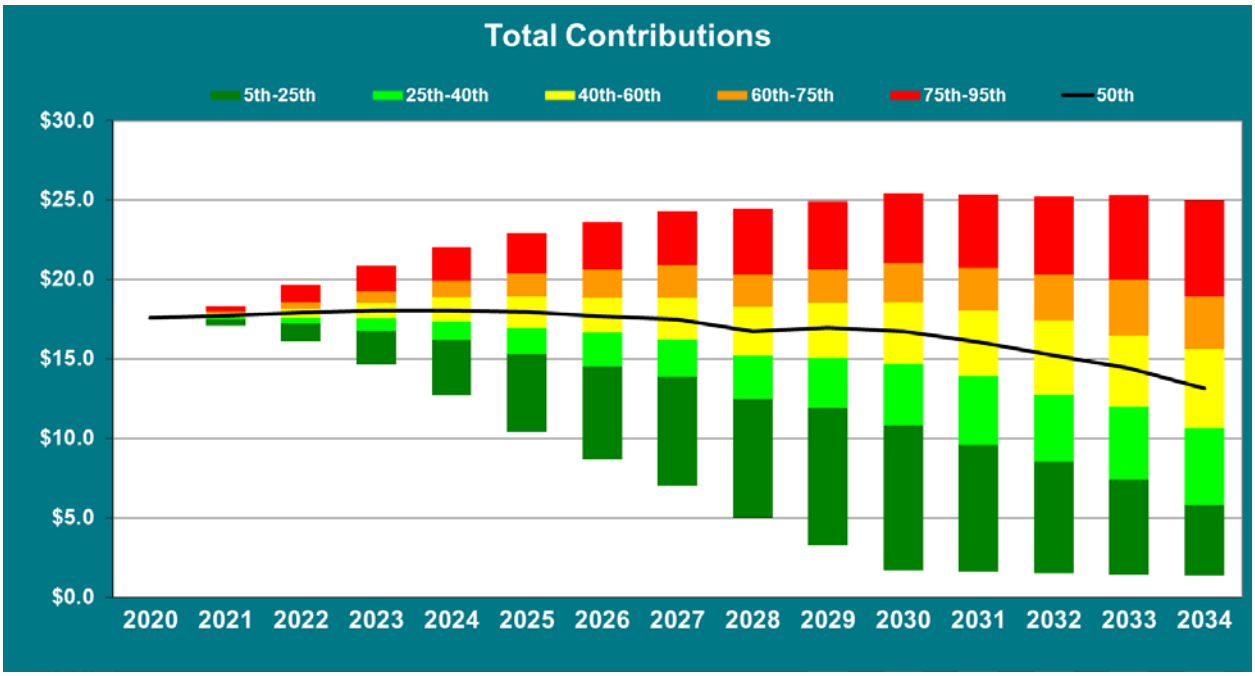
SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Stochastic Projections

Stochastic projections serve to show the range of probable outcomes of various measurements. The charts on the following pages show the projected range of the total contributions and of the funded ratio on an actuarial value of assets basis. The range in both scenarios is driven by the volatility of investment returns (a 10.9% standard deviation of annual returns from RVK's Asset Allocation Study dated February 2019). The stochastic projections of investment returns are based on an assumption that each future year's investment return is independent from all other years and is identically distributed according to a lognormal distribution. This assumption may result in an unrealistically wide range of compound investment returns over longer periods of time.

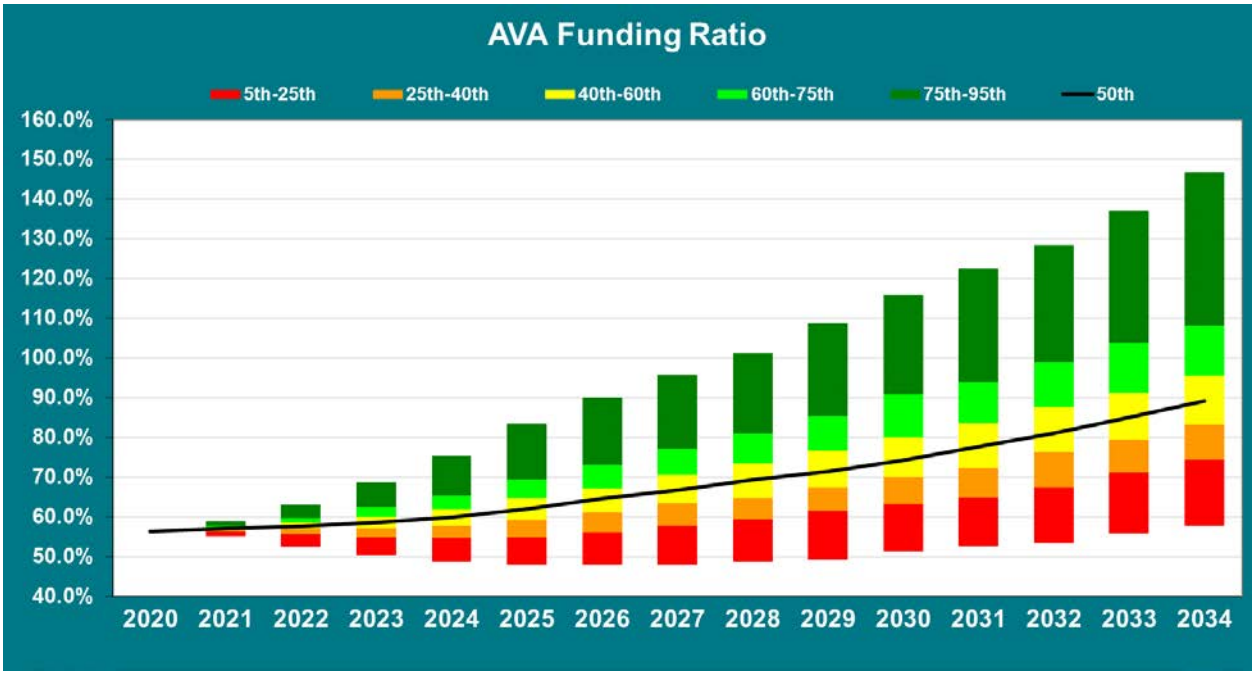
The stochastic projection of contributions shows the probable range of future contributions. The baseline contributions (black line), which is based on the median simulations using an average return of 6.75%, aligns with the projections discussed in Subsection E. of the Executive Summary of this report. In the most pessimistic scenario shown, the 95th percentile, the projected contributions are about $25 million in 2034. Conversely, in the most optimistic scenario shown, the 5th percentile, the projected contribution amount declines to about $1.4 million in 2034.

Stochastic Projection of Total Contributions
(in millions)



SECTION II – ASSESSMENT AND DISCLOSURE OF RISK

Stochastic Projection of Funded Ratio on an Actuarial Value of Assets Basis



While the baseline funded ratio (black line) is projected to be around 90% at the end of the 15-year period shown here, there is a wide range of potential outcomes. Good investment returns have the likelihood of bringing the funded ratio well over 100%. Due to the sound funding policy of the Plan, even in scenarios with unfavorable investment returns, the Plan is projected to remain around 50% funded, as long as actuarially determined contributions continue to be made.

SECTION III – ASSETS

Pension Plan assets play a key role in the financial operation of the Plan and in the decisions the Board may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact benefit levels, contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on Plan assets including:

- **Disclosure** of Plan assets as of June 30, 2019 and June 30, 2020,
- Statement of the **changes** in market values during the year,
- Development of the **Actuarial Value of Assets**.

Disclosure

There are two types of asset values disclosed in the valuation, the Market Value of Assets and the Actuarial Value of Assets. The market value represents a snapshot value that provides the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not as suitable for long-range planning as are the Actuarial Value of Assets that reflect smoothing of annual investment returns.

SECTION III – ASSETS

Table III-1 discloses and compares each component of the Market Value of Assets as of June 30, 2019 and June 30, 2020.

Table III-1
Statement of Assets at Market Value

Investments		**June 30, 2019**		**June 30, 2020**
Common Stock	$	74,267,853	$	74,754,591
Mutual Funds		41,983,514		35,576,950
Corporate Debt / Bond Funds		50,739,381		52,340,391
Closely Held Instruments		185,954		79,902
US Treasury Obligations		2,984,267		3,225,688
Short-Term Investments		693,394		593,192
Total Investments	$	170,854,363	$	166,570,714
Receivables				
Dividends and Interest	$	1,480	$	44
Other Reveivables		0		0
Total Receivables	$	1,480	$	44
Payables				
Due to Plan Sponsor	$	549,303	$	496,232
Other Payables		166,923		152,726
Total Payables	$	716,226	$	648,958
Market Value of Assets	**$**	**170,139,617**	**$**	**165,921,800**

SECTION III – ASSETS

Changes in Market Value

The components of asset change are:

- Contributions (employer and employee)
- Investment income (realized and unrealized), net of investment expenses
- Benefit payments
- Administrative Expenses

Table III-2 shows the components of a change in the Market Value of Assets during FYE 2019 and FYE 2020.

Table III-2
Changes in Market Values

	June 30, 2019	June 30, 2020
Contributions		
Employer's Contribution	13,633,181	14,709,528
Members' Contributions	2,074,025	2,017,164
Total Contributions	15,707,206	16,726,692
Investment Income		
Interest	21,852	9,374
Dividends	3,818,826	3,514,044
Miscellaneous	0	25,247
Realized & Unrealized Gain/(Loss)	4,900,584	(3,182,117)
Investment Expenses	(325,462)	(341,882)
Net Investment Income	8,415,800	24,666
Disbursements		
Benefit Payments	(19,969,862)	(20,712,755)
Administrative Expenses	(252,584)	(256,420)
Total Disbursments	(20,222,446)	(20,969,175)
Net Increase (Decrease)	3,900,560	(4,217,817)
Net Assets Held in Trust for Benefits		
Beginning of Year	166,239,057	170,139,617
End of Year	170,139,617	165,921,800
Approximate Return	5.13%	0.01%

SECTION III – ASSETS

Actuarial Value of Assets (AVA)

The Actuarial Value of Assets represents a "smoothed" value developed by the actuary to reduce the volatile results, which could develop due to short-term fluctuations in the Market Value of Assets. For this Plan, the Actuarial Value of Assets is calculated on a modified market-related value. The Market Value of Assets is adjusted to recognize, over a five-year period, investment earnings which are greater than (or less than) the assumed investment return. The actuarial value is constrained to fall within 20% of the market value.

Table III-3
Development of Actuarial Value of Assets
as of June 30, 2020

Plan Year	(a) Expected Earnings	(b) Actual Earnings	(c) = (b) – (a) Unexpected Earnings	(d) Phase-In Factor	(c) x (d) Phase-In Adjustment
2015 -16	11,704,510	(540,093)	(12,244,603)	0%	0
2016 -17	10,584,363	12,216,936	1,632,573	20%	326,515
2017 -18	11,170,341	8,792,300	(2,378,041)	40%	(951,216)
2018 -19	11,481,373	8,415,801	(3,065,572)	60%	(1,839,343)
2019 -20	11,343,578	24,666	(11,318,912)	80%	(9,055,130)

1. Total Unrecognized Asset Gains/(Losses)	(11,519,174)
2. Market Value of Assets as of June 30, 2020	165,921,800
3. Actuarial Value of Assets as of June 30, 2020: [(2) - (1)]	177,440,974
4. Ratio of Actuarial Value to Market Value [(3) ÷ (2)]	106.9%

SECTION III – ASSETS

Investment Performance

The following table calculates the investment related gain/loss for the plan year on both a market value and an actuarial value basis. The market value gain/loss is an appropriate measure for comparing the actual asset performance to the valuation's long-term assumption. Effective with the July 1, 2019 actuarial valuation, the rate of return assumption is 6.75%.

Table III-4
Asset Gain/(Loss)

	Market Value	Actuarial Value
As of June 30, 2019	**$ 170,139,617**	**$ 175,814,792**
Employer Contributions	14,709,528	14,709,528
Employee Contributions	2,017,164	2,017,164
Benefit Payments	(20,712,755)	(20,712,755)
Administrative Expenses	(256,420)	(256,420)
Expected Investment Earnings at 6.75%	11,343,578	11,726,653
Expected Value as of July 1, 2020	**$ 177,240,712**	**$ 183,298,962**
Actuarial (Loss)/Gain on Assets	(11,318,912)	(5,857,988)
Actual Value as of June 30, 2020	**$ 165,921,800**	**$ 177,440,974**
Return	0.01%	3.38%
Variance from Expected Return of 6.75%	-6.74%	-3.37%

SECTION IV – LIABILITIES

In this section, we present detailed information on Plan liabilities including:

- **Disclosure** of Plan liabilities at July 1, 2019 and July 1, 2020,
- Statement of **changes** in these liabilities during the year.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them. Note that these liabilities are not appropriate for settlement purposes, including the purchase of annuities and the payment of lump sums.

- **Present Value of Future Benefits:** Used for measuring all future Plan obligations; the obligations of the Plan earned as of the valuation date and those to be earned in the future by current Plan participants, under the current Plan provisions.

- **Actuarial Liability:** Used for funding calculations, this liability is calculated taking the total Projected Value of Future Benefits and subtracting all future normal costs. The method used for this Plan is called the Entry Age Normal (EAN) funding method.

- **Unfunded Actuarial Liability:** The excess of the Actuarial Liability over the Actuarial Value of Assets.

SECTION IV – LIABILITIES

Table IV-1 discloses each of these liabilities for the current and prior valuations.

Table IV-1
Liabilities and Unfunded Actuarial Liability

	July 1, 2019	July 1, 2020
1. Present Value of Future Benefits		
Active Participant Benefits		
ATU/Drivers	$ 60,359,725	$ 55,153,993
IBEW/Mechanics	28,096,965	27,063,653
ATU/Clerical	2,096,051	2,220,396
Non-Contract/Admin [1]	22,876,251	23,474,231
Total	**$ 113,428,992**	**$ 107,912,273**
2. Inactive Actuarial Liability		
ATU/Drivers	$ 120,824,212	$ 122,833,980
IBEW/Mechanics	29,891,297	30,516,899
ATU/Clerical	4,953,197	4,833,198
Non-Contract/Admin	66,868,890	68,168,114
Total	**$ 222,537,596**	**$ 226,352,191**
3. Active Actuarial Liability		
ATU/Drivers	$ 49,064,420	$ 45,350,009
IBEW/Mechanics	22,816,691	22,225,926
ATU/Clerical	1,843,014	1,975,305
Non-Contract/Admin [1]	18,658,257	19,264,074
Total	**$ 92,382,382**	**$ 88,815,314**
4. Total Actuarial Liability, [(2) + (3)]	$ 314,919,978	$ 315,167,505
5. Plan Assets (Actuarial Value)	175,814,792	177,440,974
6. Unfunded Actuarial Liability (UAL), [(4) - (5)]	**$ 139,105,186**	**$ 137,726,531**

[1] *Includes PEPRA members.*

SECTION IV – LIABILITIES

Table IV-2 below analyzes the increases or decreases in the liabilities since the last valuation.

Changes in Liabilities

Each of the liabilities disclosed in the prior table are expected to change at each valuation. The components of that change (as shown in Table IV-2 below), depending upon which liability is analyzed, can include:

- Benefits accrued since the last valuation
- Plan amendments changing benefits (none for the 2020 Valuation)
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial assumptions
- A change in the actuarial funding method or software

Table IV-2
Changes in Actuarial Liability

Actuarial Liability at July 1, 2020	$	315,167,505
Actuarial Liability at July 1, 2019	$	314,919,978
Liability Increase (Decrease)	$	247,527
Change due to:		
Assumption Changes		0
Accrual of Benefits		3,326,248
Actual Benefit Payments		(20,712,755)
Interest		20,793,979
Actuarial (Gain)/Loss		(3,159,945)
Liability Increase (Decrease)	$	247,527

SECTION IV – LIABILITIES

Unfunded liabilities will change (as shown in Table IV-3 below) because of all of the above, and also due to changes in Plan assets resulting from:

- Contributions different than expected
- Investment earnings different than expected
- Expenses different than expected

Table IV-3
Development of Actuarial Gain / (Loss)

1. Unfunded Actuarial Liability (UAL) at Start of Year (not less than zero)	$	139,105,186
2. Expected UAL Payment		(13,296,199)
3. Interest on (1) and (2) to End of Year		8,492,107
4. Increase in UAL due to Assumption Change		0
5. Expected Unfunded Actuarial Liability at End of Year, [(1) + (2) + (3) + (4)]	$	134,301,094
6. Actual Unfunded Actuarial Liability at End of Year (not less than zero)	$	137,726,531
7. **Actuarial Gain/(Loss), [(5) – (6)]**	$	**(3,425,437)**
(a) Liability Gain/(Loss)		3,159,945
(b) Asset Gain/(Loss) on Actuarial Value		(5,857,988)
(c) Contribution Timing Gain/(Loss)		(763,544)
(d) Administrative Expenses Less than Expected		36,150

SECTION V – CONTRIBUTIONS

In the process of evaluating the financial condition of any pension plan, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions are needed to properly maintain the funding status of the Plan. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that are both stable and predictable.

Based on the assumptions and cost method, Plan assets are currently below the target level of assets determined by the cost method; consequently, there is an Unfunded Actuarial Liability. As a result, the required Plan contribution consists of three components: The normal cost, the amortization of the Unfunded Actuarial Liability (UAL), and assumed administrative expenses.

The normal cost represents the cost of the additional benefits earned during the plan year by active Plan members. The amortization of the unfunded liability represents a payment designed to bring the Plan's assets up to the target level set by the actuarial cost method. Currently, the amortization of UAL represents about three-fourths of the total contribution.

As the UAL is paid over time, the Plan contribution is expected to decrease to a level near the normal cost plus administrative expenses. The normal cost itself will be changing since the Plan is closed to new members other than non-contract employees.

The table below presents the total Plan contributions (both employer and employee) for the current and prior valuations.

Table V-1
Development of Annual Contribution

		July 1, 2019	July 1, 2020
1.	Total Actuarial Liability	$ 314,919,978	$ 315,167,505
2.	Plan Assets (Actuarial Value)	175,814,792	177,440,974
3.	Unfunded Actuarial Liability (UAL), [(1) - (2)]	$ 139,105,186	$ 137,726,531
4.	UAL Amortization Payment (BOY)	$ 13,296,199	$ 13,642,971
5.	Total Plan Normal Cost	$ 3,326,248	$ 3,087,757
6.	Expected Administrative Expenses	$ 282,045	$ 289,801
7.	Total Cost, [(4) + (5) + (6)]	$ 16,904,492	$ 17,020,529
8.	Total Cost (interest adjusted to middle of year)	$ 17,465,703	$ 17,585,592

SECTION V – CONTRIBUTIONS

Table V-2 presents the calculation of the UAL payments for the Plan under the amortization policy adopted in 2012.

Table V-2
Development of the Amortization Payment (BOY) as of July 1, 2020

	Type of Base	Date Established	Initial Balance	Initial Amortization	Outstanding Balance	Remaining Amortization	Amortization Amount
1.	Initial Unfunded Actuarial Liability	7/1/2012	$ 87,613,245	25	$ 73,694,233	17	$ 6,948,912
2.	Actuarial Loss	7/1/2013	6,555,553	15	4,314,735	8	670,346
3.	Actuarial Gain	7/1/2014	(2,132,368)	15	(1,528,815)	9	(217,483)
4.	Actuarial Loss	7/1/2015	740,624	15	571,515	10	75,347
5.	Assumption Changes	7/1/2016	29,699,872	21	26,741,039	17	2,521,515
6.	Actuarial Loss	7/1/2016	4,978,340	15	4,095,145	11	505,232
7.	Actuarial Loss	7/1/2017	5,880,935	15	5,124,183	12	596,324
8.	Method Changes	7/1/2018	(640,322)	19	(604,417)	17	(56,993)
9.	Actuarial Loss	7/1/2018	5,453,907	15	5,000,497	13	552,566
10.	Assumption Changes	7/1/2019	7,536,766	18	7,309,712	17	689,261
11.	Actuarial Loss	7/1/2019	9,988,472	15	9,583,267	14	1,011,173
12.	Actuarial Loss	7/1/2020	3,425,437	15	3,425,437	15	346,771
	TOTAL				**$ 137,726,531**		**$ 13,642,971**
					Total UAL Payment, Middle of Year		**$ 14,095,903**

Table V-3 presents the development of the PEPRA Member Contribution Rate. PEPRA Members must contribute half of the total normal cost rate of the Plan, rounded to the nearest 0.25%, as shown in the table below.

Table V-3
Development of the PEPRA Member Contribution Rate

Valuation Date	**July 1, 2019**	**July 1, 2020**
Effective Date	FY 2020-2021	FY 2021-2022
Assumed Rate of Return	6.75%	6.75%
Total Normal Cost Rate	12.55%	12.59%
50/50 Cost Sharing Rate for Members	6.28%	6.30%
Member Contribution Rate	**6.25%**	**6.25%**
(rounded to nearest quarter %)		
Active PEPRA Membership Statistics		
Number	19	19
Average Age	46.2	45.8
Average Service	5.9	5.2
Average Age at Hire Date	40.4	40.6

APPENDIX A – MEMBERSHIP INFORMATION

Data pertaining to active and inactive Members and their beneficiaries as of the valuation date was supplied by the Plan Administrator on electronic media. As is usual in studies of this type, Member data was neither verified nor audited; however, it was reviewed to ensure that it complies with generally accepted actuarial standards.

Summary of Participant Data

Active Participants

Non-Contract/Admin	July 1, 2019	July 1, 2020
Number	52	52
Average Age	51.7	52.5
Average Service	17.5	18.2
Average Pay	$ 75,551	$ 77,409
Non-Contract/PEPRA	**July 1, 2019**	**July 1, 2020**
Number	19	19
Average Age	46.2	45.8
Average Service	5.9	5.2
Average Pay	$ 64,493	$ 64,895
ATU/Clerical	**July 1, 2019**	**July 1, 2020**
Number	11	11
Average Age	52.6	53.6
Average Service	15.9	16.9
Average Pay	$ 51,045	$ 51,783
ATU/Drivers	**July 1, 2019**	**July 1, 2020**
Number	237	208
Average Age	54.3	54.7
Average Service	16.3	16.9
Average Pay	$ 61,004	$ 62,312
IBEW/Mechanics	**July 1, 2019**	**July 1, 2020**
Number	105	99
Average Age	51.4	51.9
Average Service	19.9	20.5
Average Pay	$ 64,373	$ 64,980
Total	**July 1, 2019**	**July 1, 2020**
Number	424	389
Average Age	52.9	53.2
Average Service	16.8	17.4
Average Pay	$ 63,520	$ 64,838

APPENDIX A – MEMBERSHIP INFORMATION

Summary of Participant Data

Deferred Participants

Terminated Vested	July 1, 2019	July 1, 2020
Number	218	217
Average Age	54.3	54.8
Average Annual Benefit	$ 8,405	$ 8,753

In-Pay Participants

Service Retired	July 1, 2019	July 1, 2020
Number	778	789
Average Age	70.4	70.8
Average Annual Benefit	$ 23,172	$ 23,357
Beneficiaries	**July 1, 2019**	**July 1, 2020**
Number	154	163
Average Age	71.1	71.4
Average Annual Benefit	$ 10,572	$ 11,030
Disabled	**July 1, 2019**	**July 1, 2020**
Number	79	76
Average Age	70.3	71.1
Average Annual Benefit	$ 10,075	$ 9,837
Total	**July 1, 2019**	**July 1, 2020**
Number	1,011	1,028
Average Age	70.5	70.9
Average Annual Benefit	$ 20,229	$ 20,403

RETIREMENT PLANS OF SAN DIEGO TRANSIT CORPORATION
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2020

APPENDIX A – MEMBERSHIP INFORMATION

Data Summary as of July 1, 2020

Active Participants	Non-Contract/Administrative			ATU/	ATU/	IBEW/	
	Non-PEPRA	PEPRA	Sub-Total	Clerical	Drivers	Mechanics	Total
Number	52	19	71	11	208	99	389
Average Age	52.5	45.8	50.7	53.6	54.7	51.9	53.2
Average Service	18.2	5.2	14.7	16.9	16.9	20.5	17.4
Average Pay	$77,409	$64,895	$74,060	$51,783	$62,312	$64,980	$64,838

Inactive Participants	Non-Contract/Administrative			ATU/	ATU/	IBEW/	
	Non-PEPRA	PEPRA	Sub-Total	Clerical	Drivers	Mechanics	Total
Service Retired							
Number	129	n/a	129	32	514	114	789
Average Age	69.5	n/a	69.5	73.1	71.0	70.4	70.8
Average Annual Benefit	$39,077	n/a	$39,077	$14,093	$20,189	$22,451	$23,357
Beneficiaries							
Number	32	n/a	32	3	98	30	163
Average Age	68.8	n/a	68.8	74.2	72.8	69.3	71.4
Average Annual Benefit	$19,965	n/a	$19,965	$3,146	$9,321	$7,873	$11,030
Disabled							
Number	2	n/a	2	3	62	9	76
Average Age	70.7	n/a	70.7	81.9	70.7	70.2	71.1
Average Annual Benefit	$9,416	n/a	$9,416	$6,102	$9,608	$12,754	$9,837
Terminated Vested							
Number	22	n/a	22	12	137	46	217
Average Age	51.5	n/a	51.5	53.8	55.3	55.5	54.8
Average Annual Benefit	$18,711	n/a	$18,711	$5,121	$8,208	$6,563	$8,753

APPENDIX A – MEMBERSHIP INFORMATION

Status Reconciliation - All Divisions
Changes in Plan Membership as of July 1, 2020

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Total
Participant count as of July 1, 2019	**424**	**218**	**79**	**778**	**154**	**1,653**
New Entrants	2					2
Rehires						0
Disabilities		(2)	2			0
Retirements/ Domestic Relations Order (DRO)	(28)	(9)		37	1	1
Vested Terminations	(9)	11	(2)			0
Died, with Beneficiaries' Benefit Payable			(1)	(10)	11	0
Transfers						0
Died, without Beneficiary, and Other Terminations		(1)	(2)	(16)	(1)	(20)
Beneficiary Deaths					(2)	(2)
Data Corrections						0
Total Change	(35)	(1)	(3)	11	9	(19)
Participant count as of July 1, 2020	**389**	**217**	**76**	**789**	**163**	**1,634**

APPENDIX A – MEMBERSHIP INFORMATION

Status Reconciliation - Non-Contract/Administrative[1]
Changes in Plan Membership as of July 1, 2020

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Total
Participant count as of July 1, 2019	**71**	**22**	**2**	**126**	**32**	**253**
New Entrants	2					2
Rehires						0
Disabilities						0
Retirements/ Domestic Relations Order (DRO)	(2)	(1)		3		0
Vested Terminations	(1)	1				0
Died, with Beneficiaries' Benefit Payable						0
Transfers	1					1
Died, without Beneficiary, and Other Terminations						0
Beneficiary Deaths						0
Data Corrections						0
Total Change	0	0	0	3	0	3
Participant count as of July 1, 2020	**71**	**22**	**2**	**129**	**32**	**256**

[1] *Includes 19 active individuals participating in PEPRA.*

APPENDIX A – MEMBERSHIP INFORMATION

Status Reconciliation - Clerical
Changes in Plan Membership as of July 1, 2020

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Total
Participant count as of July 1, 2019	**11**	**13**	**3**	**32**	**3**	**62**
New Entrants						0
Rehires						0
Disabilities						0
Retirements/ Domestic Relations Order (DRO)		(1)		1		0
Vested Terminations						0
Died, with Beneficiaries' Benefit Payable						0
Transfers						0
Died, without Beneficiary, and Other Terminations				(1)		(1)
Beneficiary Deaths						0
Data Corrections						0
Total Change	0	(1)	0	0	0	(1)
Participant count as of July 1, 2020	**11**	**12**	**3**	**32**	**3**	**61**

APPENDIX A – MEMBERSHIP INFORMATION

Status Reconciliation - ATU/Drivers
Changes in Plan Membership as of July 1, 2020

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Total
Participant count as of July 1, 2019	**237**	**138**	**64**	**504**	**90**	**1,033**
New Entrants						0
Rehires						0
Disabilities		(2)	2			0
Retirements/ Domestic Relations Order (DRO)	(22)	(6)		28	1	1
Vested Terminations	(7)	8	(1)			0
Died, with Beneficiaries' Benefit Payable			(1)	(8)	9	0
Transfers						0
Died, without Beneficiary, and Other Terminations		(1)	(2)	(10)	(1)	(14)
Beneficiary Deaths					(1)	(1)
Data Corrections				0		0
Total Change	(29)	(1)	(2)	10	8	(14)
Participant count as of July 1, 2020	**208**	**137**	**62**	**514**	**98**	**1,019**

APPENDIX A – MEMBERSHIP INFORMATION

Status Reconciliation - IBEW/Mechanics
Changes in Plan Membership as of July 1, 2020

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Total
Participant count as of July 1, 2019	**105**	**45**	**10**	**116**	**29**	**305**
New Entrants						0
Rehires						0
Disabilities						0
Retirements/ Domestic Relations Order (DRO)	(4)	(1)		5		0
Vested Terminations	(1)	2	(1)			0
Died, with Beneficiaries' Benefit Payable				(2)	2	0
Transfers	(1)					(1)
Died, without Beneficiary, and Other Terminations				(5)		(5)
Beneficiary Deaths					(1)	(1)
Data Corrections						0
Total Change	(6)	1	(1)	(2)	1	(7)
Participant count as of July 1, 2020	**99**	**46**	**9**	**114**	**30**	**298**

APPENDIX A – MEMBERSHIP INFORMATION

Age / Service Distribution Of Active Participants - Non-Contract/Administrative[1] (Counts)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**0**
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	**0**
30 to 34	0	0	1	0	0	3	1	0	0	0	0	0	**5**
35 to 39	0	1	1	0	0	4	3	2	0	0	0	0	**11**
40 to 44	0	0	0	0	0	4	2	0	1	0	0	0	**7**
45 to 49	0	0	0	0	0	4	1	1	3	0	0	0	**9**
50 to 54	1	0	0	0	0	2	1	2	2	0	0	0	**8**
55 to 59	0	0	0	0	0	4	4	1	1	0	3	1	**14**
60 to 64	0	0	0	1	0	3	0	3	2	2	0	3	**14**
65 to 69	0	0	0	0	0	0	2	1	0	0	0	0	**3**
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Total	**1**	**1**	**2**	**1**	**0**	**24**	**14**	**10**	**9**	**2**	**3**	**4**	**71**

[1] *Includes 19 active individuals participating in PEPRA.*

Age / Service Distribution Of Active Participants - Non-Contract/Administrative[1] (Average Salary)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
30 to 34	0	0	64,334	0	0	66,437	78,000	0	0	0	0	0	**$68,329**
35 to 39	0	49,462	56,680	0	0	72,186	76,227	73,341	0	0	0	0	**$70,023**
40 to 44	0	0	0	0	0	74,542	71,300	0	86,653	0	0	0	**$75,346**
45 to 49	0	0	0	0	0	65,213	94,723	69,368	83,430	0	0	0	**$75,026**
50 to 54	39,000	0	0	0	0	69,534	68,078	66,319	58,438	0	0	0	**$61,958**
55 to 59	0	0	0	0	0	66,773	70,275	65,641	90,930	0	72,155	81,598	**$71,630**
60 to 64	0	0	0	81,598	0	62,089	0	91,986	83,343	99,147	0	107,438	**$87,937**
65 to 69	0	0	0	0	0	0	75,150	63,835	0	0	0	0	**$71,379**
70 & up	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
Total	**$39,000**	**$49,462**	**$60,507**	**$81,598**	**$0**	**$68,313**	**$74,535**	**$75,412**	**$79,048**	**$99,147**	**$72,155**	**$100,978**	**$74,060**

[1] *Includes 19 active individuals participating in PEPRA.*

RETIREMENT PLANS OF SAN DIEGO TRANSIT CORPORATION
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2020

APPENDIX A – MEMBERSHIP INFORMATION

Age / Service Distribution Of Active Participants - ATU/Clerical (Counts)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**0**
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	**0**
30 to 34	0	0	0	0	0	0	1	0	0	0	0	0	**1**
35 to 39	0	0	0	0	0	0	0	0	0	0	0	0	**0**
40 to 44	0	0	0	0	0	1	0	1	0	0	0	0	**2**
45 to 49	0	0	0	0	0	0	0	0	0	0	0	0	**0**
50 to 54	0	0	0	0	0	1	1	1	0	0	0	0	**3**
55 to 59	0	0	0	0	0	0	0	1	1	1	0	0	**3**
60 to 64	0	0	0	0	0	0	0	0	0	0	0	1	**1**
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0	**0**
70 & up	0	0	0	0	0	0	1	0	0	0	0	0	**1**
Total	**0**	**0**	**0**	**0**	**0**	**2**	**3**	**3**	**1**	**1**	**0**	**1**	**11**

Age / Service Distribution Of Active Participants - ATU/Clerical (Average Salary)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
30 to 34	0	0	0	0	0	0	49,350	0	0	0	0	0	**$49,350**
35 to 39	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
40 to 44	0	0	0	0	0	61,439	0	45,087	0	0	0	0	**$53,263**
45 to 49	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
50 to 54	0	0	0	0	0	45,087	45,087	45,099	0	0	0	0	**$45,091**
55 to 59	0	0	0	0	0	0	0	62,751	60,058	61,790	0	0	**$61,533**
60 to 64	0	0	0	0	0	0	0	0	0	0	0	46,710	**$46,710**
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
70 & up	0	0	0	0	0	0	47,156	0	0	0	0	0	**$47,156**
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$53,263**	**$47,198**	**$50,979**	**$60,058**	**$61,790**	**$0**	**$46,710**	**$51,783**

APPENDIX A – MEMBERSHIP INFORMATION

Age / Service Distribution Of Active Participants - ATU/Drivers (Counts)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**0**
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	**0**
30 to 34	0	0	0	0	0	2	2	0	0	0	0	0	**4**
35 to 39	0	0	0	0	0	7	6	1	0	0	0	0	**14**
40 to 44	0	0	0	0	0	1	7	4	1	0	0	0	**13**
45 to 49	0	0	0	0	0	3	10	7	2	0	0	0	**22**
50 to 54	0	0	0	0	0	6	18	8	5	1	2	0	**40**
55 to 59	0	0	0	0	0	6	17	9	12	9	2	0	**55**
60 to 64	0	0	0	0	0	8	10	5	6	6	5	0	**40**
65 to 69	0	0	0	0	0	0	5	2	3	3	2	1	**16**
70 & up	0	0	0	0	0	0	2	1	0	0	0	1	**4**
Total	**0**	**0**	**0**	**0**	**0**	**33**	**77**	**37**	**29**	**19**	**11**	**2**	**208**

Age / Service Distribution Of Active Participants - ATU/Drivers (Average Salary)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
30 to 34	0	0	0	0	0	59,817	52,664	0	0	0	0	0	**$56,241**
35 to 39	0	0	0	0	0	52,795	59,788	60,346	0	0	0	0	**$56,331**
40 to 44	0	0	0	0	0	50,598	60,475	67,928	65,771	0	0	0	**$62,416**
45 to 49	0	0	0	0	0	53,032	58,441	67,888	55,061	0	0	0	**$60,402**
50 to 54	0	0	0	0	0	55,791	63,332	59,899	64,401	79,431	54,913	0	**$61,629**
55 to 59	0	0	0	0	0	55,344	66,173	63,171	66,348	70,883	61,883	0	**$65,153**
60 to 64	0	0	0	0	0	60,004	60,837	66,946	63,947	60,318	68,126	0	**$62,734**
65 to 69	0	0	0	0	0	0	57,944	68,037	72,570	62,099	67,377	52,658	**$63,576**
70 & up	0	0	0	0	0	0	57,250	57,324	0	0	0	60,038	**$57,966**
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$55,931**	**$61,679**	**$64,409**	**$65,361**	**$66,609**	**$64,453**	**$56,348**	**$62,312**

RETIREMENT PLANS OF SAN DIEGO TRANSIT CORPORATION
ACTUARIAL VALUATION REPORT AS OF JULY 1, 2020

APPENDIX A – MEMBERSHIP INFORMATION

Age / Service Distribution Of Active Participants - IBEW/Mechanics (Counts)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**0**
25 to 29	0	0	0	0	0	1	0	0	0	0	0	0	**1**
30 to 34	0	0	0	0	0	2	11	0	0	0	0	0	**13**
35 to 39	0	0	0	0	0	2	2	2	1	0	0	0	**7**
40 to 44	0	0	0	0	0	0	1	1	3	0	0	0	**5**
45 to 49	0	0	0	0	0	0	2	1	5	3	0	0	**11**
50 to 54	0	0	0	0	0	1	2	0	6	1	3	0	**13**
55 to 59	0	0	0	0	0	0	4	5	4	6	4	2	**25**
60 to 64	0	0	0	0	0	0	4	3	1	1	1	4	**14**
65 to 69	0	0	0	0	0	0	2	1	2	0	2	0	**7**
70 & up	0	0	0	0	0	0	1	1	1	0	0	0	**3**
Total	**0**	**0**	**0**	**0**	**0**	**6**	**29**	**14**	**23**	**11**	**10**	**6**	**99**

Age / Service Distribution Of Active Participants - IBEW/Mechanics (Average Salary)
As of July 1, 2020

	Service												
Age	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	**Total**
Under 20	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
20 to 24	0	0	0	0	0	0	0	0	0	0	0	0	**$0**
25 to 29	0	0	0	0	0	53,578	0	0	0	0	0	0	**$53,578**
30 to 34	0	0	0	0	0	55,975	74,412	0	0	0	0	0	**$71,575**
35 to 39	0	0	0	0	0	34,852	56,653	74,412	74,412	0	0	0	**$58,035**
40 to 44	0	0	0	0	0	0	74,412	74,412	66,242	0	0	0	**$69,510**
45 to 49	0	0	0	0	0	0	70,477	42,613	64,904	69,166	0	0	**$65,053**
50 to 54	0	0	0	0	0	34,852	50,697	0	69,040	66,543	71,789	0	**$64,030**
55 to 59	0	0	0	0	0	0	54,352	72,838	70,477	71,789	64,387	74,412	**$68,024**
60 to 64	0	0	0	0	0	0	66,354	55,549	50,052	74,412	74,412	72,444	**$65,765**
65 to 69	0	0	0	0	0	0	49,106	42,613	58,297	0	70,477	0	**$56,911**
70 & up	0	0	0	0	0	0	42,613	34,852	50,052	0	0	0	**$42,506**
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$45,014**	**$64,560**	**$62,439**	**$65,674**	**$70,835**	**$68,828**	**$73,100**	**$64,980**

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Method

For the Retirement Plans of San Diego Transit Corporation (the Plan), the actuarial funding method used to determine the normal cost and the Unfunded Actuarial Liability is the individual entry age to final decrement cost method. This method is consistent with the method required under the GASB accounting statements.

Under this cost method, the normal cost is calculated as the amount necessary to fund Members' benefits as a level percentage of total payroll over their projected working lives. At each valuation date, the Actuarial Liability is equal to the difference between the liability for the Members' total projected benefit and the present value of future normal cost contributions. The total normal cost is calculated as the sum of the individual normal costs for each active member (individual entry age method).

The excess of the Actuarial Liability over the smoothed value of Plan assets is the Unfunded Actuarial Liability (UAL); the initial Unfunded Actuarial Liability as of July 1, 2012 is amortized in level dollar payments over a 25-year period ending June 30, 2037.

Changes in the Unfunded Actuarial Liability due to Plan amendments, changes in actuarial assumptions or methods will be amortized in level dollar payments over a separate period that ends on June 30, 2037, consistent with the amortization of the remaining June 30, 2012 UAL.

Changes in the Unfunded Actuarial Liability due to actuarial gains and losses are amortized over closed separate 15-year periods in level dollar payments.

Though, the Retirement Board may make exceptions, in general, the intent is to follow the guidelines published by the California Actuarial Advisory Panel and the Government Finance Officers' Association.

The total Plan cost is the sum of the normal cost, assumed administrative expenses, and the amortization of the Unfunded Actuarial Liability. The employer is responsible for contributing the difference between the total cost and member contributions.

Actuarial Value of Plan Assets

The Actuarial Value of Assets (AVA) is determined using an adjusted market value. Under this method, a preliminary AVA is determined as the Market Value of Assets on the valuation date less a decreasing fraction (4/5, 3/5, 2/5, 1/5) of the gain or loss in each of the preceding four years. The gain or loss for a given year is the difference between the actual investment return (on a market-to-market basis) and the assumed investment return based on the Market Value of Assets at the beginning of the year and actual cash flow. The AVA is adjusted, if necessary, to remain between 80% and 120% of the market value.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Assumptions

The economic and demographic assumptions are based on the experience study covering the period from July 1, 2010 through June 30, 2015 that was adopted at the Budget Development Meeting in April 2016, with the exception of the rate of return assumption. The rationale for all the assumptions can also be found in the experience study report dated April 2016. The MTS Board voted to decrease the expected rate of return at its April 2019 meeting from 7.00% to 6.75%. All assets and liabilities are computed as of the valuation date, July 1, 2020.

1. Rate of Return

The annual rate of return on all Plan assets is assumed to be 6.75% net of investment expenses.

2. Cost of Living

The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 2.75% per year.

3. Post Retirement COLA

Benefits for Non-Contract retirees assumed to increase after retirement at the rate of 2.0% per year.

4. Pay for Benefits

In most cases, pay for benefits is based on a two-year average of each Participant's pay during the two years preceding the valuation date. Special procedures are used in some cases, as noted for full-time Participants.

Unit	Pay for Continuing Participants	Pay for New Participants
Drivers	The larger of gross pay or 1,800 hours times the member's hourly rate	
Mechanics	2,150 hours times the Participant's hourly rate	
Clerical	Gross pay	The larger of gross pay or 2,100 hours times the Participant's hourly rate
Non-Contract	Gross pay	The larger of gross pay or 2,080 hours times the Participant's hourly rate

Part-time Participants are assumed to work 1,040 hours in the calculations shown above.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

5. Merit Pay (Longevity and Promotion) Increases

Assumed pay increases for active Participants consist of increases due to inflation (cost-of-living adjustments) and those due to longevity and promotion. Based on an analysis of pay levels and service, we developed the following assumptions:

Longevity and Promotion Increases

Service	ATU Drivers	IBEW Mechanics	Clerical	Non-Contract
0	6.00%	7.50%	10.00%	3.50%
1	6.00%	7.50%	10.00%	3.50%
2	6.00%	7.50%	0.25%	3.50%
3	6.00%	7.50%	0.25%	3.50%
4	6.00%	7.50%	0.25%	3.50%
5	6.00%	7.50%	0.25%	3.50%
6	6.00%	7.50%	0.25%	3.50%
7	6.00%	7.50%	0.25%	3.50%
8	0.50%	7.50%	0.25%	3.50%
9	0.50%	7.50%	0.25%	3.50%
10+	0.50%	0.50%	0.25%	0.25%

In addition, annual adjustments in pay due to inflation will equal the CPI, for an additional annual increase of 2.75%. The combination of rates is compounded rather than using an additive method.

6. Active Participant Mortality

Rates of mortality for all active Participants are given by the Combined Healthy Retired Pensioners (RP) 2000 Tables published by the Society of Actuaries using male's rates for both male and female members with generational improvements from the base year 2010 using Scale MP-2015.

7. Healthy Inactive Participant and Beneficiary Mortality

Rates of mortality for healthy inactive Participants, spouses, and surviving spouses are given by the Combined Healthy Retired Pensioners (RP) 2000 Tables with Blue Collar Adjustments for males and no collar adjustments for females published by the Society of Actuaries with generational improvements from the base year 2010 using Scale MP-2015.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

8. Disabled Participant Mortality

Rates of mortality for male disabled members are given by the Retired Pensioners (RP) 2014 Tables for Disabled Annuitants. Rates of mortality for female disabled members are given by Retired Pensioners (RP) 2000 Combined Healthy Table published by the Society of Actuaries, with future mortality improvements to 2010, the midpoint of the experience used for the mortality study, using projection scale MP-2015.

9. Mortality Improvement

For active and healthy inactive Participants, mortality is assumed to improve in future years in accordance with the MP-2015 generational improvement tables. For disabled Participants no explicit provision for mortality improvement is used.

10. Disability

Among ATU Drivers and IBEW Mechanics, 0.50% of Participants eligible for a disability benefit are assumed to become disabled each year. Disabled Participants are assumed not to return to active service. No disability is assumed for Clerical and Non-Contract Participants.

11. Plan Expenses

Plan administrative expenses of $289,801 are included in the annual cost calculated, increasing each year with the assumed rate of inflation.

12. Family Composition

100% of active Participants are assumed married. Male spouses are assumed four years older than their wives are.

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

13. Service Retirement

Retirement is assumed to occur in accordance with the rates shown in the following table:

Age	ATU Drivers	IBEW Mechanics	Clerical/Non Contract
52 [1]	0%	0%	10%
53-54	0%	0%	10%
55-56	10%	5%	10%
57-59	10%	5%	15%
60-61	15%	10%	15%
62	25%	20%	40%
63-64	25%	20%	30%
65	40%	40%	30%
66-69	30%	30%	30%
70 and older	100%	100%	100%

[1] *Non-Contract retirement assumption at age 52 is for PEPRA participants only, 0% otherwise.*

14. Termination

Service-based or age-based termination rates are shown below by group. For all participants, termination rates are assumed zero once a participant is eligible for retirement.

Termination for ATU Driver, IBEW Mechanic, and Non-Contract Participants are assumed to occur in accordance with the service-based rates shown in the following table:

Service	ATU Driver	IBEW Mechanic	Non-Contract
0	25.0%	25.0%	10.0%
1	25.0%	25.0%	10.0%
2	12.0%	12.0%	10.0%
3	12.0%	12.0%	10.0%
4 – 9	5.0%	5.0%	10.0%
10 +	2.0%	2.0%	3.0%

APPENDIX B – ACTUARIAL ASSUMPTIONS AND METHODS

Termination for Clerical Participants is assumed to occur in accordance with the age-based rates shown in the following table:

Clerical	
Age	**Rate**
20-24	25.0%
25-29	11.0%
30-34	13.0%
35-39	17.0%
40-44	12.0%
45-49	8.0%
50 and older	5.0%

15. Employment Status

No future transfers among Participant groups are assumed.

16. Changes in Actuarial Methods and Assumptions since the Prior Valuation

None.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

A. Definitions

Average Monthly Final Earnings: Average Monthly Final Earnings means the average monthly compensation during the consecutive months that produces a Participant's highest average compensation, computed by dividing the Compensation Earnable for such period by the number of months in such period.

- For ATU, IBEW, and Clerical Participants, the averaging period is thirty-six (36) consecutive months.
- For Non-Contract Participants, the number of consecutive months is twelve (12).
- Public Employees' Pension Reform Act (PEPRA): For Non-Contract Participants hired on and after July 1, 2013, the number of consecutive months is thirty-six (36).
- Those months during which the Participant did not receive compensation from the Employer equivalent to one-half the regular working days will be excluded. The average is then based on that portion of the averaging period remaining after the excluded months.
- PEPRA: It is possible that exclusions for months in which the Participant did not work full-time may be subject to change.
- Use the total of the Periodic Pensionable Earnings from the highest three calendar (payroll) years. These years need not be consecutive years. There shall be no skips and drops within the three calendar (payroll) years. Add the total Periodic Pensionable Earnings to Terminal Earnings and then divide by 36.

Compensation: Compensation means the remuneration for services paid by the Employer. The monetary value of board, lodgings, fuel, car allowance, laundry, or other advantages furnished to a Participant is not included.

PEPRA: For Participants joining the Plan on or after July 1, 2013, only base compensation up to the Social Security-integrated PEPRA compensation limit ($126,291 for 2020 and $124,180 for 2019) will count for computing Plan benefits and employee and employer contributions; in particular, all or most overtime will be excluded.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Compensation Earnable:

Compensation Earnable is the compensation actually received by a Participant during a period of employment. For ATU and Non-Contract Participants, any bonus or retroactive wage increases are treated as compensation when received rather than when the services are performed. For IBEW Participants, Compensation Earnable is limited to 2,140 hours of straight time equivalent hours in any 12-month period.

In addition, the value of any vacation or sick leave accumulated but unused when benefits begin is excluded from Compensation Earnable and from Average Monthly Final Earnings.

PEPRA: For Participants joining the Plan on and after July 1, 2013, it is likely that some sources of compensation, such as those underlined above, may be excluded from benefit and contribution computations for these new Participants.

Credited Years Of Service:

In general, Credited Years of Service is continuous service with the San Diego Transit Corporation and its predecessor company from the last date of employment through the date of retirement, death, disability, or other termination of service.

As of November 10, 1997, part-time ATU employees receive one Credited Year of Service for every 2,080 hours of service worked as a part-time employee after December 1, 1990.

For Non-Contract Participants, Credited Years of Service includes any year commencing on or after July 1, 1982 in which the Participant completes at least 1,000 Hours of Service. In addition, Credited Years of Service for Non-Contract Participants will exclude any period of service after the Participant's Normal Retirement Date.

A Participant who is disabled and recovers from disability and reenters the Plan as an active Participant will not receive Credited Years of Service for the period of disability.

B. Membership

All full-time and certain part-time IBEW employees hired prior to May 1, 2011 will become Participants on their date of hire. IBEW employees hired on and after May 1, 2011 will become Participants of a separate defined contribution plan and will not be Participants of this Plan.

All full-time and certain part-time ATU employees hired prior to November 1, 2012 will become Participants on their date of hire. ATU

employees hired on and after November 1, 2012 will become Participants of a separate defined contribution plan and will not be Participants of this Plan.

All Non-Contract employees become Participants after earning one Credited Year of Service.

PEPRA: Any Participant joining the Plan for the first time on or after January 1, 2013 is a New Participant.

C. Retirement Benefit

Eligibility: Clerical and Non-Contract Participants are eligible for normal service retirement upon attaining age 63 and completing five or more Credited Years of Service and eligible for early service retirement upon attaining age 53 and completing five or more Credited Years of Service.

ATU and IBEW Participants are eligible for normal service retirement upon attaining age 63 (65 for IBEW) and completing five or more Credited Years of Service and eligible for early service retirement upon attaining age 55 and completing five or more Credited Years of Service.

PEPRA: New Participants are eligible to retire upon attaining age 52 and completing five or more Credited Years of Service.

Benefit Amount: The monthly service retirement benefit is the Participant's Average Monthly Final Earnings multiplied by the percentage figures shown in the tables below.

- For ATU and Clerical Participants terminating prior to October 1, 2005, ATU/Clerical Table A-1 is used; for ATU and Clerical Participants terminating on and after October 1, 2005, ATU/Clerical Table A-2 is used. Prior to July 1, 2006, the benefit from the table is limited to 60%.

- For IBEW Participants terminating prior to January 1, 2007, IBEW Table A-1 is used; for IBEW Participants terminating on and after January 1, 2007, IBEW Table A-2 is used.

- For Non-Contract participants terminating prior to July 1, 2000, Non-Contract Table A-1 is used; for Non-Contract participants terminating on and after July 1, 2000, Non-Contract Table A-2 is used.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

For Participants with fractions of a year of age or service, the Participant's age or service will be rounded to the completed quarter year, and the percentage multiplier will be computed from the table using interpolation.

ATU participants who are active from November 10, 1997 to December 31, 1998 and from November 10, 1997 to December 31, 1999 receive an additional 2.5% and 2.5%, respectively. However, the multiplier from Table A-1 or A-2, as augmented by the additional 2.5% increments, is still limited to 60% prior to July 1, 2006 and 70% thereafter.

Non-Contract Participants who are active as of July 1, 1994 and July 1, 1995 receive an additional 6% and 2%, respectively. However, the benefit multiplier, as augmented by the additional 6% and 2% increments, is still limited to 60% under Table A-1 and 70% under Table A-2.

A Participant who is disabled and recovers from disability and reenters the Plan as an active Participant will have this benefit amount reduced by the actuarial equivalent of the benefits paid during the period of disability.

PEPRA: For New Participants, the benefit multiplier will be 1% at age 52, increasing by 0.1% for each year of age to 2.5% at 67. In between exact ages, the multiplier will increase by 0.025% for each quarter year increase in age.

Form of Benefit: The normal form of benefit is an annuity payable for the life of the Participant, with no continuation of benefits to a beneficiary after death. The retirement benefit will be paid as a 50% Joint and Survivor benefit actuarially equivalent to the normal form for participants who have been married for at least one year. Otherwise, the normal form will be paid.

Because Participants will be making employee contributions, the Participant's beneficiaries may be eligible to receive a refund of accumulated contributions that exceed the benefits paid out to the Participant (if any) upon death.

The ATU and IBEW benefits have been amended from time to time to remove the actuarial reduction in benefits for previously retired Participants whose spouses have died before them. However, these adjustments are retroactive only, and they do not apply to benefits paid to currently active Participants.

ATU and IBEW Participants may elect an Alternative Retirement Formula if they terminate employment before early retirement but after 10 Credited Years of Service or were hired between April 1, 1968 and March 31, 1971

and desire to retire at their Normal Retirement Date. These Participants are eligible for a deferred benefit commencing at age 65 based on Table B.

Tables A-1 and A-2 for each employee group, as well as Table B, can be found at the end of Appendix C herein.

D. Disability Retirement Benefit

Eligibility: A Participant is eligible for a Disability Retirement Benefit if:

- The Participant has earned five Credited Years of Service (ATU, IBEW, Clerical and Non-Contract), and
- The Participant is unable to perform the duties of his or her job with the Corporation, cannot be transferred to another job with the Corporation, and has submitted satisfactory medical evidence of permanent disqualification from his or her job.

Benefit Amount: The Disability Retirement Benefit is a monthly benefit equal to the lesser of:

1. 1.5% times Credited Years of Service at Disability Retirement Date times the Participant's Average Monthly Final Earnings; and,
2. The Normal Retirement Benefit calculated using the Average Monthly Final Earnings at Disability Retirement Date and the projected Credited Years of Service to Normal Retirement Date.

The benefit is reduced by 50% of the amount of any earned income from other sources in excess of 50% of the Participant’s Average Monthly Earnings during the 12 months prior to disability; this reduction applies to all IBEW and Non-Contract Participants, but only to ATU Participants hired after June 30, 1983.

PEPRA: Note that the Disability Retirement Benefit for New Participants is based on the new definition of Compensation, which is subject to a maximum and excludes overtime.

Form of Benefit: The normal form of benefit is an annuity commencing at disability and payable for the life of the Participant, with no continuation of benefits to a beneficiary after death. The Disability Retirement Benefit will be paid as a 50% Joint and Survivor benefit actuarially equivalent to the normal form

for participants who have been married for at least one year. Otherwise, the normal form will be paid.

Because Participants will be making employee contributions, the Participant's beneficiaries may be eligible to receive a refund of accumulated contributions that exceed the benefits paid out to the Participant (if any) upon death.

The ATU and IBEW benefits have been amended from time to time to remove the actuarial reduction in benefits for previously retired Participants whose spouses have died before them. However, these adjustments are retroactive only, and they do not apply to benefits paid to currently active Participants.

E. Pre-Retirement Death Benefit

Eligibility: A vested Participant is entitled to elect coverage of a pre-retirement spouse's benefit.

For years, a Participant is age 55 or under, the cost of the coverage is paid by the Company. For the years, a Participant is over age 55 and has elected this coverage, the cost of this coverage is paid by the Participant in the form of a reduced benefit upon retirement. The reduction is 3.5¢ per $10 of monthly benefit for each year of coverage.

There is no cost for this benefit for any ATU, Clerical, or Non-Contract Participant whose monthly benefit commences after November 27, 1990. There is no cost for this benefit for any IBEW Participant whose monthly benefit commences after December 3, 1996.

In order for the spouse to be eligible for this benefit, the participant must be married to the spouse for one year prior to death, unless death occurs from accidental causes.

Benefit Amount: For a Participant who is eligible to retire at death, the pre-retirement death benefit is 50% of the benefit that would have been payable had the Participant retired immediately prior to his or her death and elected to receive a 50% Joint and Survivor annuity.

For a Participant who dies before being eligible to retire, the pre-retirement death benefit is 50% of the benefit that would have been payable had the Participant survived to his or her earliest retirement date, retired, elected to receive a 50% Joint and Survivor annuity, and died immediately.

PEPRA: Note that the Pre-Retirement Death Benefit for New Participants is based on the new definition of compensation, which is subject to a maximum and excludes overtime.

Form of Benefit: For a Participant who is eligible to retire at death, the death benefit begins when the Participant dies and continues for the life of the surviving spouse.

For a Participant who dies before being eligible to retire, the death benefit begins when the Participant would have reached his or her earliest retirement date and continues for the life of the surviving spouse.

Because Participants will be making employee contributions, the Participant's beneficiaries may be eligible to receive a refund of accumulated contributions that exceed the benefits paid out to the Participant or spouse (if any) upon death.

F. Termination Benefit

Eligibility: A Participant is eligible for a termination benefit after earning five Credited Years of Service.

Benefit Amount: The termination benefit is computed in the same manner as the Normal Retirement Benefit, but it is based on Credited Years of Service and Average Monthly Final Earnings on the date of termination.

Effective July 1, 2000, Non-Contract participants who terminate prior to eligibility for early service retirement will have their benefits actuarially reduced if they begin receiving benefits before Normal Retirement Age.

PEPRA: For New Participants, the benefit multiplier will be 1% at age 52, increasing by 0.1% for each year of age to 2.5% at 67. In between exact ages, the multiplier will increase by 0.025% for each quarter year increase in age. Note also that the Termination Benefit for New Participants is based on the new definition of compensation, which is subject to a maximum and excludes overtime.

We assume a refund of employee contributions, with no interest, if termination occurs before five years of service.

Form of Benefit: The Participant will be eligible to commence benefits at the later of termination and earliest retirement eligibility age.

The normal form of benefit is an annuity payable for the life of the Participant, with no continuation of benefits to a beneficiary after death.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

The retirement benefit will be paid as a 50% Joint and Survivor benefit actuarially equivalent to the normal form for participants who have been married for at least one year. Otherwise, the normal form will be paid.

Because Participants will be making employee contributions, the Participant's beneficiaries may be eligible to receive a refund of accumulated contributions that exceed the benefits paid out to the Participant (if any) upon death.

The ATU and IBEW benefits have been amended from time to time to remove the actuarial reduction in benefits for previously retired Participants whose spouses have died before them. However, these adjustments are retroactive only, and they do not apply to benefits paid to currently active Participants.

G. Cost-of-Living Adjustments

Eligibility: An annual Cost-of-Living Adjustment (COLA) has been added for Non-Contract Participants who were actively employed on or after June 30, 1999. One time only (ad hoc) COLAs were granted to ATU and IBEW Participants in 1991 and 1992.

Benefit Amount: For Non-Contract Participants, the cumulative COLA is the increase in the Consumer Price Index (CPI) since the Participant began receiving benefits.

The COLA is subject to the following limits for Non-Contract Participants:

- The cumulative COLA cannot exceed 2% compounded annually for all years since the Participant's benefits began;
- The annual COLA is zero if the CPI increase in that year is less than 1%;
- The annual COLA is limited to 6% of the initial benefit amount in any year; and,
- A Participant's benefit cannot be reduced below the benefit level when payments commenced.

APPENDIX C – SUMMARY OF PLAN PROVISIONS

H. Voluntary Early Retirement Program

The Plan provided enhanced benefits to ATU participants who voluntarily elected early retirement during the window period from July 1, 1998 through February 20, 1998.

The Plan provided enhanced benefits to certain IBEW participants who voluntarily elected early retirement during the window period from July 1, 2004 through December 31, 2004.

I. DROP Program

The Plan provided DROP benefits to a number of ATU participants who elected retirement from July 1, 2002 through December 31, 2002.

J. Funding

- IBEW members contributed 3% of compensation to the Plan in April 2013 and 4% of compensation in April 2014. The contribution rate increased to 6% of compensation in April 2015 and increased to 8% of compensation in April 2016.

- ATU drivers and clerical members contributed 3% of compensation in July 2013. The contribution rate increased to 5% of compensation in July 2014, to 6% in July 2015, and to 7% of compensation in July 2016. The contribution rate increased to 8% of compensation in December 2017.

- Non-contract members hired before July 1, 2013 contributed 2% of compensation to the Plan prior to January 2014. The Non-contract member contributions increased to 4% of compensation in January 2014, to 6% of in January 2015, and increased to 7% of compensation on January 1, 2016. As of January 1, 2017, the member contribution rate increased to 8% of compensation.

- PEPRA: New Members must contribute half of the normal cost of the Plan, rounded to the nearest 0.25%. Currently, PEPRA members are paying 6.25% of pay and the employer pays the remaining cost of the Plan.

  The Corporation pays the actuarial cost of the Plan as reduced by Member contributions. Member contribution rates in the future may change in response to collective bargaining.

K. Changes in Plan Provisions since the Prior Valuation

None

APPENDIX C – SUMMARY OF PLAN PROVISIONS

ATU/Clerical Table A-1: Retirement Benefit Multipliers

Credited Years Of Service	Age at Retirement								
	55	56	57	58	59	60	61	62	63+
5	5.9%	6.3%	6.7%	7.2%	7.8%	8.3%	8.9%	9.5%	10.1%
6	7.1%	7.5%	8.1%	8.7%	9.3%	10.0%	10.7%	11.4%	12.1%
7	8.2%	8.8%	9.4%	10.1%	10.9%	11.7%	12.4%	13.3%	14.1%
8	9.4%	10.1%	10.8%	11.6%	12.4%	13.3%	14.2%	15.1%	16.1%
9	10.6%	11.3%	12.1%	13.0%	14.0%	15.0%	16.0%	17.0%	18.1%
10	11.8%	12.6%	13.5%	14.4%	15.5%	16.7%	17.8%	18.9%	20.1%
11	12.9%	13.8%	14.8%	15.9%	17.1%	18.3%	19.5%	20.8%	22.2%
12	14.1%	15.1%	16.2%	17.3%	18.6%	20.0%	21.3%	22.7%	24.2%
13	15.3%	16.3%	17.5%	18.8%	20.2%	21.7%	23.1%	24.6%	26.2%
14	16.5%	17.6%	18.9%	20.2%	21.7%	23.3%	24.9%	26.5%	28.2%
15	17.6%	18.9%	20.2%	21.7%	23.3%	25.0%	26.7%	28.4%	30.2%
16	18.8%	20.1%	21.5%	23.1%	24.8%	26.7%	28.4%	30.3%	32.2%
17	20.0%	21.4%	22.9%	24.5%	26.4%	28.3%	30.2%	32.2%	34.3%
18	21.2%	22.6%	24.2%	26.0%	27.9%	30.0%	32.0%	34.1%	36.3%
19	22.3%	23.9%	25.6%	27.4%	29.5%	31.7%	33.8%	36.0%	38.3%
20	23.5%	25.2%	26.9%	28.9%	31.0%	33.3%	35.5%	37.9%	40.3%
21	24.7%	26.4%	28.3%	30.3%	32.6%	35.0%	37.3%	39.7%	42.3%
22	25.9%	27.7%	29.6%	31.8%	34.1%	36.7%	39.1%	41.6%	44.3%
23	27.0%	28.9%	31.0%	33.2%	35.7%	38.3%	40.9%	43.5%	46.3%
24	28.2%	30.2%	32.3%	34.6%	37.2%	40.0%	42.6%	45.4%	48.4%
25	29.4%	31.4%	33.7%	36.1%	38.8%	41.7%	44.4%	47.3%	50.4%
26	30.6%	32.7%	35.0%	37.5%	40.3%	43.3%	46.2%	49.2%	52.4%
27	31.7%	34.0%	36.4%	39.0%	41.9%	45.0%	48.0%	51.1%	54.4%
28	32.9%	35.2%	37.7%	40.4%	43.4%	46.7%	49.8%	52.0%	56.4%
29	34.1%	36.5%	39.1%	41.9%	45.0%	48.3%	50.0%	55.0%	58.4%
30	35.3%	37.7%	40.4%	43.4%	46.5%	50.0%	51.0%	55.5%	60.0%
31	36.5%	39.0%	41.7%	44.8%	48.1%	51.0%	51.5%	56.0%	60.0%
32	37.6%	40.2%	43.1%	46.2%	49.6%	51.5%	52.0%	56.5%	60.0%
33	38.8%	41.5%	44.4%	47.6%	50.0%	52.0%	52.5%	57.0%	60.0%
34	40.0%	42.8%	45.8%	49.1%	51.0%	52.5%	53.0%	57.5%	60.0%
35 or more	41.2%	44.0%	47.1%	50.0%	51.5%	53.0%	53.5%	58.0%	60.0%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

ATU/Clerical Table A-2: Retirement Benefit Multipliers

Credited Years Of Service	Age at Retirement										
	Clerical										
	53	*54*	55	56	57	58	59	60	61	62	63+
5	*8.71%*	*9.33%*	10.00%	10.26%	10.52%	10.78%	11.05%	11.31%	11.57%	11.83%	12.09%
6	*10.45%*	*11.20%*	12.00%	12.31%	12.62%	12.94%	13.26%	13.57%	13.88%	14.20%	14.51%
7	*12.19%*	*13.06%*	14.00%	14.36%	14.73%	15.09%	15.47%	15.83%	16.20%	16.56%	16.93%
8	*13.94%*	*14.93%*	16.00%	16.42%	16.83%	17.25%	17.68%	18.10%	18.51%	18.93%	19.34%
9	*15.68%*	*16.79%*	18.00%	18.47%	18.94%	19.40%	19.89%	20.36%	20.83%	21.29%	21.76%
10	*17.42%*	*18.66%*	20.00%	20.52%	21.04%	21.56%	22.10%	22.62%	23.14%	23.66%	24.18%
11	*19.16%*	*20.53%*	22.00%	22.57%	23.14%	23.72%	24.31%	24.88%	25.45%	26.03%	26.60%
12	*20.90%*	*22.39%*	24.00%	24.62%	25.25%	25.87%	26.52%	27.14%	27.77%	28.39%	29.02%
13	*22.65%*	*24.26%*	26.00%	26.68%	27.35%	28.03%	28.73%	29.41%	30.08%	30.76%	31.43%
14	*24.39%*	*26.12%*	28.00%	28.73%	29.46%	30.18%	30.94%	31.67%	32.40%	33.12%	33.85%
15	*26.13%*	*27.99%*	30.00%	30.78%	31.56%	32.34%	33.15%	33.93%	34.71%	35.49%	36.27%
16	*27.87%*	*29.86%*	32.00%	32.83%	33.66%	34.50%	35.36%	36.19%	37.02%	37.86%	38.69%
17	*29.61%*	*31.72%*	34.00%	34.88%	35.77%	36.65%	37.57%	38.45%	39.34%	40.22%	41.11%
18	*31.36%*	*33.59%*	36.00%	36.94%	37.87%	38.81%	39.78%	40.72%	41.65%	42.59%	43.52%
19	*33.10%*	*35.45%*	38.00%	38.99%	39.98%	40.96%	41.99%	42.98%	43.97%	44.95%	45.94%
20	*34.84%*	*37.32%*	40.00%	41.04%	42.08%	43.12%	44.20%	45.24%	46.28%	47.32%	48.36%
21	*36.58%*	*39.19%*	42.00%	43.09%	44.18%	45.28%	46.41%	47.50%	48.59%	49.69%	50.78%
22	*38.32%*	*41.05%*	44.00%	45.14%	46.29%	47.43%	48.62%	49.76%	50.91%	52.05%	53.20%
23	*40.07%*	*42.92%*	46.00%	47.20%	48.39%	49.59%	50.83%	52.03%	53.22%	54.42%	55.61%
24	*41.81%*	*44.78%*	48.00%	49.25%	50.50%	51.74%	53.04%	54.29%	55.54%	56.78%	58.03%
25	*43.55%*	*46.65%*	50.00%	51.30%	52.60%	53.90%	55.25%	56.55%	57.85%	59.15%	60.45%
26	*45.29%*	*48.52%*	52.00%	53.35%	54.70%	56.06%	57.46%	58.81%	60.16%	61.52%	62.87%
27	*47.03%*	*50.38%*	54.00%	55.40%	56.81%	58.21%	59.67%	61.07%	62.48%	63.88%	65.29%
28	*48.78%*	*52.25%*	56.00%	57.46%	58.91%	60.37%	61.88%	63.34%	64.79%	66.25%	67.70%
29	*50.52%*	*54.11%*	58.00%	59.51%	61.02%	62.52%	64.09%	65.60%	67.11%	68.61%	70.00%
30	*52.26%*	*55.98%*	60.00%	61.56%	63.12%	64.68%	66.30%	67.86%	69.42%	70.00%	70.00%
31	*54.00%*	*57.85%*	62.00%	63.61%	65.22%	66.84%	68.51%	70.00%	70.00%	70.00%	70.00%
32	*55.74%*	*59.71%*	64.00%	65.66%	67.33%	68.99%	70.00%	70.00%	70.00%	70.00%	70.00%
33	*57.49%*	*61.58%*	66.00%	67.72%	69.43%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%
34	*59.23%*	*63.44%*	68.00%	69.77%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%
35 or more	*60.97%*	*65.31%*	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

IBEW Table A-1: Retirement Benefit Multipliers

Credited Years Of Service	Age at Retirement										
	55	56	57	58	59	60	61	62	63	64	65+
5	5.2%	5.5%	5.9%	6.3%	6.7%	7.2%	7.8%	8.3%	8.9%	9.5%	10.1%
6	6.2%	6.6%	7.1%	7.5%	8.1%	8.7%	9.3%	10.0%	10.7%	11.4%	12.1%
7	7.2%	7.7%	8.2%	8.8%	9.4%	10.1%	10.9%	11.7%	12.4%	13.3%	14.1%
8	8.2%	8.8%	9.4%	10.1%	10.8%	11.6%	12.4%	13.3%	14.2%	15.1%	16.1%
9	9.3%	9.9%	10.6%	11.3%	12.1%	13.0%	14.0%	15.0%	16.0%	17.0%	18.1%
10	10.2%	11.0%	11.8%	12.6%	13.5%	14.4%	15.5%	16.7%	17.8%	18.9%	20.1%
11	11.2%	12.1%	12.9%	13.8%	14.8%	15.9%	17.1%	18.3%	19.5%	20.8%	22.2%
12	12.3%	13.2%	14.1%	15.1%	16.2%	17.3%	18.6%	20.0%	21.3%	22.7%	24.2%
13	13.3%	14.3%	15.3%	16.3%	17.5%	18.8%	20.2%	21.7%	23.1%	24.6%	26.2%
14	14.4%	15.4%	16.5%	17.6%	18.9%	20.2%	21.7%	23.3%	24.9%	26.5%	28.2%
15	15.4%	16.5%	17.6%	18.9%	20.2%	21.7%	23.3%	25.0%	26.7%	28.4%	30.2%
16	16.4%	17.6%	18.8%	20.1%	21.5%	23.1%	24.8%	26.7%	28.4%	30.3%	32.2%
17	17.5%	18.7%	20.0%	21.4%	22.9%	24.5%	26.4%	28.3%	30.2%	32.2%	34.3%
18	18.5%	19.8%	21.2%	22.6%	24.2%	26.0%	27.9%	30.0%	32.0%	34.1%	36.3%
19	19.6%	20.9%	22.3%	23.9%	25.6%	27.4%	29.5%	31.7%	33.8%	36.0%	38.3%
20	20.6%	22.0%	23.5%	25.2%	26.9%	28.9%	31.0%	33.3%	35.5%	37.9%	40.3%
21	21.6%	23.1%	24.7%	26.4%	28.3%	30.3%	32.6%	35.0%	37.3%	39.7%	42.3%
22	22.7%	24.2%	25.9%	27.7%	29.6%	31.8%	34.1%	36.7%	39.1%	41.6%	44.3%
23	23.7%	25.3%	27.0%	28.9%	31.0%	33.2%	35.7%	38.3%	40.9%	43.5%	46.3%
24	24.8%	26.4%	28.2%	30.2%	32.3%	34.6%	37.2%	40.0%	42.6%	45.4%	48.4%
25	25.8%	27.5%	29.4%	31.4%	33.7%	36.1%	38.8%	41.7%	44.4%	47.3%	50.4%
26	26.9%	28.6%	30.6%	32.7%	35.0%	37.5%	40.3%	43.3%	46.2%	49.2%	52.4%
27	27.9%	29.7%	31.7%	34.0%	36.4%	39.0%	41.9%	45.0%	48.0%	51.1%	54.4%
28	29.0%	30.9%	32.9%	35.2%	37.7%	40.4%	43.4%	46.7%	49.8%	52.0%	56.4%
29	30.0%	32.0%	34.1%	36.5%	39.1%	41.9%	45.0%	48.3%	50.0%	55.0%	58.4%
30	31.1%	33.1%	35.3%	37.7%	40.4%	43.4%	46.5%	50.0%	51.0%	55.5%	60.0%
31	32.1%	34.2%	36.5%	39.0%	41.7%	44.8%	48.1%	51.0%	51.5%	56.0%	60.0%
32	33.2%	35.3%	37.6%	40.2%	43.1%	46.2%	49.6%	51.5%	52.0%	56.5%	60.0%
33	34.3%	36.5%	38.8%	41.5%	44.4%	47.6%	50.0%	52.0%	52.5%	57.0%	60.0%
34	35.4%	37.6%	40.0%	42.8%	45.8%	49.1%	51.0%	52.5%	53.0%	57.5%	60.0%
35 or more	36.5%	38.7%	41.2%	44.0%	47.1%	50.0%	51.5%	53.0%	53.5%	58.0%	60.0%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

IBEW Table A-2: Retirement Benefit Multipliers

Credited Years Of Service	Age at Retirement								
	55	56	57	58	59	60	61	62	63+
5	10.00%	10.26%	10.52%	10.78%	11.05%	11.31%	11.57%	11.83%	12.09%
6	12.00%	12.31%	12.62%	12.94%	13.26%	13.57%	13.88%	14.20%	14.51%
7	14.00%	14.36%	14.73%	15.09%	15.47%	15.83%	16.20%	16.56%	16.93%
8	16.00%	16.42%	16.83%	17.25%	17.68%	18.10%	18.51%	18.93%	19.34%
9	18.00%	18.47%	18.94%	19.40%	19.89%	20.36%	20.83%	21.29%	21.76%
10	20.00%	20.52%	21.04%	21.56%	22.10%	22.62%	23.14%	23.66%	24.18%
11	22.00%	22.57%	23.14%	23.72%	24.31%	24.88%	25.45%	26.03%	26.60%
12	24.00%	24.62%	25.25%	25.87%	26.52%	27.14%	27.77%	28.39%	29.02%
13	26.00%	26.68%	27.35%	28.03%	28.73%	29.41%	30.08%	30.76%	31.43%
14	28.00%	28.73%	29.46%	30.18%	30.94%	31.67%	32.40%	33.12%	33.85%
15	30.00%	30.78%	31.56%	32.34%	33.15%	33.93%	34.71%	35.49%	36.27%
16	32.00%	32.83%	33.66%	34.50%	35.36%	36.19%	37.02%	37.86%	38.69%
17	34.00%	34.88%	35.77%	36.65%	37.57%	38.45%	39.34%	40.22%	41.11%
18	36.00%	36.94%	37.87%	38.81%	39.78%	40.72%	41.65%	42.59%	43.52%
19	38.00%	38.99%	39.98%	40.96%	41.99%	42.98%	43.97%	44.95%	45.94%
20	40.00%	41.04%	42.08%	43.12%	44.20%	45.24%	46.28%	47.32%	48.36%
21	42.00%	43.09%	44.18%	45.28%	46.41%	47.50%	48.59%	49.69%	50.78%
22	44.00%	45.14%	46.29%	47.43%	48.62%	49.76%	50.91%	52.05%	53.20%
23	46.00%	47.20%	48.39%	49.59%	50.83%	52.03%	53.22%	54.42%	55.61%
24	48.00%	49.25%	50.50%	51.74%	53.04%	54.29%	55.54%	56.78%	58.03%
25	50.00%	51.30%	52.60%	53.90%	55.25%	56.55%	57.85%	59.15%	60.45%
26	52.00%	53.35%	54.70%	56.06%	57.46%	58.81%	60.16%	61.52%	62.87%
27	54.00%	55.40%	56.81%	58.21%	59.67%	61.07%	62.48%	63.88%	65.29%
28	56.00%	57.46%	58.91%	60.37%	61.88%	63.34%	64.79%	66.25%	67.70%
29	58.00%	59.51%	61.02%	62.52%	64.09%	65.60%	67.11%	68.61%	70.00%
30	60.00%	61.56%	63.12%	64.68%	66.30%	67.86%	69.42%	70.00%	70.00%
31	62.00%	63.61%	65.22%	66.84%	68.51%	70.00%	70.00%	70.00%	70.00%
32	64.00%	65.66%	67.33%	68.99%	70.00%	70.00%	70.00%	70.00%	70.00%
33	66.00%	67.72%	69.43%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%
34	68.00%	69.77%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%
35 or more	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Non-Contract Table A-1: Retirement Benefit Multipliers

Credited Years Of Service	Age at Retirement										
	53	54	55	56	57	58	59	60	61	62	63+
5	5.2%	5.5%	5.9%	6.3%	6.7%	7.2%	7.8%	8.3%	8.9%	9.5%	10.1%
6	6.2%	6.6%	7.1%	7.5%	8.1%	8.7%	9.3%	10.0%	10.7%	11.4%	12.1%
7	7.2%	7.7%	8.2%	8.8%	9.4%	10.1%	10.9%	11.7%	12.4%	13.3%	14.1%
8	8.2%	8.8%	9.4%	10.1%	10.8%	11.6%	12.4%	13.3%	14.2%	15.1%	16.1%
9	9.3%	9.9%	10.6%	11.3%	12.1%	13.0%	14.0%	15.0%	16.0%	17.0%	18.1%
10	10.2%	11.0%	11.8%	12.6%	13.5%	14.4%	15.5%	16.7%	17.8%	18.9%	20.1%
11	11.2%	12.1%	12.9%	13.8%	14.8%	15.9%	17.1%	18.3%	19.5%	20.8%	22.2%
12	12.3%	13.2%	14.1%	15.1%	16.2%	17.3%	18.6%	20.0%	21.3%	22.7%	24.2%
13	13.3%	14.3%	15.3%	16.3%	17.5%	18.8%	20.2%	21.7%	23.1%	24.6%	26.2%
14	14.4%	15.4%	16.5%	17.6%	18.9%	20.2%	21.7%	23.3%	24.9%	26.5%	28.2%
15	15.4%	16.5%	17.6%	18.9%	20.2%	21.7%	23.3%	25.0%	26.7%	28.4%	30.2%
16	16.4%	17.6%	18.8%	20.1%	21.5%	23.1%	24.8%	26.7%	28.4%	30.3%	32.2%
17	17.5%	18.7%	20.0%	21.4%	22.9%	24.5%	26.4%	28.3%	30.2%	32.2%	34.3%
18	18.5%	19.8%	21.2%	22.6%	24.2%	26.0%	27.9%	30.0%	32.0%	34.1%	36.3%
19	19.6%	20.9%	22.3%	23.9%	25.6%	27.4%	29.5%	31.7%	33.8%	36.0%	38.3%
20	20.6%	22.0%	23.5%	25.2%	26.9%	28.9%	31.0%	33.3%	35.5%	37.9%	40.3%
21	21.6%	23.1%	24.7%	26.4%	28.3%	30.3%	32.6%	35.0%	37.3%	39.7%	42.3%
22	22.7%	24.2%	25.9%	27.7%	29.6%	31.8%	34.1%	36.7%	39.1%	41.6%	44.3%
23	23.7%	25.3%	27.0%	28.9%	31.0%	33.2%	35.7%	38.3%	40.9%	43.5%	46.3%
24	24.8%	26.4%	28.2%	30.2%	32.3%	34.6%	37.2%	40.0%	42.6%	45.4%	48.4%
25	25.8%	27.5%	29.4%	31.4%	33.7%	36.1%	38.8%	41.7%	44.4%	47.3%	50.4%
26	26.9%	28.6%	30.6%	32.7%	35.0%	37.5%	40.3%	43.3%	46.2%	49.2%	52.4%
27	27.9%	29.7%	31.7%	34.0%	36.4%	39.0%	41.9%	45.0%	48.0%	51.1%	54.4%
28	29.0%	30.9%	32.9%	35.2%	37.7%	40.4%	43.4%	46.7%	49.8%	52.0%	56.4%
29	30.0%	32.0%	34.1%	36.5%	39.1%	41.9%	45.0%	48.3%	50.0%	55.0%	58.4%
30	31.1%	33.1%	35.3%	37.7%	40.4%	43.4%	46.5%	50.0%	51.0%	55.5%	60.0%
31	32.1%	34.2%	36.5%	39.0%	41.7%	44.8%	48.1%	51.0%	51.5%	56.0%	60.0%
32	33.2%	35.3%	37.6%	40.2%	43.1%	46.2%	49.6%	51.5%	52.0%	56.5%	60.0%
33	34.3%	36.5%	38.8%	41.5%	44.4%	47.6%	50.0%	52.0%	52.5%	57.0%	60.0%
34	35.4%	37.6%	40.0%	42.8%	45.8%	49.1%	51.0%	52.5%	53.0%	57.5%	60.0%
35 or more	36.5%	38.7%	41.2%	44.0%	47.1%	50.0%	51.5%	53.0%	53.5%	58.0%	60.0%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Non-Contract Table A-2: Retirement Benefit Multipliers

Credited Years Of Service	Age at Retirement										
	53	54	55	56	57	58	59	60	61	62	63+
5	8.71%	9.33%	10.00%	10.26%	10.52%	10.78%	11.05%	11.31%	11.57%	11.83%	12.09%
6	10.45%	11.20%	12.00%	12.31%	12.62%	12.94%	13.26%	13.57%	13.88%	14.20%	14.51%
7	12.19%	13.06%	14.00%	14.36%	14.73%	15.09%	15.47%	15.83%	16.20%	16.56%	16.93%
8	13.94%	14.93%	16.00%	16.42%	16.83%	17.25%	17.68%	18.10%	18.51%	18.93%	19.34%
9	15.68%	16.79%	18.00%	18.47%	18.94%	19.40%	19.89%	20.36%	20.83%	21.29%	21.76%
10	17.42%	18.66%	20.00%	20.52%	21.04%	21.56%	22.10%	22.62%	23.14%	23.66%	24.18%
11	19.16%	20.53%	22.00%	22.57%	23.14%	23.72%	24.31%	24.88%	25.45%	26.03%	26.60%
12	20.90%	22.39%	24.00%	24.62%	25.25%	25.87%	26.52%	27.14%	27.77%	28.39%	29.02%
13	22.65%	24.26%	26.00%	26.68%	27.35%	28.03%	28.73%	29.41%	30.08%	30.76%	31.43%
14	24.39%	26.12%	28.00%	28.73%	29.46%	30.18%	30.94%	31.67%	32.40%	33.12%	33.85%
15	26.13%	27.99%	30.00%	30.78%	31.56%	32.34%	33.15%	33.93%	34.71%	35.49%	36.27%
16	27.87%	29.86%	32.00%	32.83%	33.66%	34.50%	35.36%	36.19%	37.02%	37.86%	38.69%
17	29.61%	31.72%	34.00%	34.88%	35.77%	36.65%	37.57%	38.45%	39.34%	40.22%	41.11%
18	31.36%	33.59%	36.00%	36.94%	37.87%	38.81%	39.78%	40.72%	41.65%	42.59%	43.52%
19	33.10%	35.45%	38.00%	38.99%	39.98%	40.96%	41.99%	42.98%	43.97%	44.95%	45.94%
20	34.84%	37.32%	40.00%	41.04%	42.08%	43.12%	44.20%	45.24%	46.28%	47.32%	48.36%
21	36.58%	39.19%	42.00%	43.09%	44.18%	45.28%	46.41%	47.50%	48.59%	49.69%	50.78%
22	38.32%	41.05%	44.00%	45.14%	46.29%	47.43%	48.62%	49.76%	50.91%	52.05%	53.20%
23	40.07%	42.92%	46.00%	47.20%	48.39%	49.59%	50.83%	52.03%	53.22%	54.42%	55.61%
24	41.81%	44.78%	48.00%	49.25%	50.50%	51.74%	53.04%	54.29%	55.54%	56.78%	58.03%
25	43.55%	46.65%	50.00%	51.30%	52.60%	53.90%	55.25%	56.55%	57.85%	59.15%	60.45%
26	45.29%	48.52%	52.00%	53.35%	54.70%	56.06%	57.46%	58.81%	60.16%	61.52%	62.87%
27	47.03%	50.38%	54.00%	55.40%	56.81%	58.21%	59.67%	61.07%	62.48%	63.88%	65.29%
28	48.78%	52.25%	56.00%	57.46%	58.91%	60.37%	61.88%	63.34%	64.79%	66.25%	67.70%
29	50.52%	54.11%	58.00%	59.51%	61.02%	62.52%	64.09%	65.60%	67.11%	68.61%	70.00%
30	52.26%	55.98%	60.00%	61.56%	63.12%	64.68%	66.30%	67.86%	69.42%	70.00%	70.00%
31	54.00%	57.85%	62.00%	63.61%	65.22%	66.84%	68.51%	70.00%	70.00%	70.00%	70.00%
32	55.74%	59.71%	64.00%	65.66%	67.33%	68.99%	70.00%	70.00%	70.00%	70.00%	70.00%
33	57.49%	61.58%	66.00%	67.72%	69.43%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%
34	59.23%	63.44%	68.00%	69.77%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%
35 or more	60.97%	65.31%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%	70.00%

APPENDIX C – SUMMARY OF PLAN PROVISIONS

Table B: Alternate Retirement Formula Multipliers

Credited Years Of Service	Percentage
10	20.1%
11	22.2%
12	24.2%
13	26.2%
14	28.2%
15	30.2%
16	32.2%
17	34.3%
18	36.3%
19	38.3%
20	40.3%
21	42.3%
22	44.3%
23	46.3%
24	48.4%
25	50.4%
26	52.4%
27	54.4%
28	56.4%
29	58.4%
30	60.4%
31	62.5%
32	64.5%
33	66.5%
34	68.5%
35 or more	70.5%

APPENDIX D – GLOSSARY

1. Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs such as mortality, withdrawal, disability, retirement, changes in compensation, and rates of investment return.

2. Actuarial Cost Method

A procedure for determining the actuarial present value of pension plan benefits and expenses and for developing an allocation of such value to each year of service, usually in the form of a normal cost and an Actuarial Liability.

3. Actuarial Gain (Loss)

The difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, as determined in accordance with a particular actuarial cost method.

4. Actuarial Liability

The portion of the actuarial present value of projected benefits, which will not be paid by future normal costs. It represents the value of the past normal costs with interest to the valuation date.

5. Actuarial Present Value (Present Value)

The value as of a given date of a future amount or series of payments. The actuarial present value discounts the payments to the given date at the assumed investment return and includes the probability of the payment being made.

6. Actuarial Valuation

The determination, as of a specified date, of the normal cost, Actuarial Liability, Actuarial Value of Assets, and related actuarial present values for a pension plan.

7. Actuarial Value of Assets

The value of cash, investments, and other property belonging to a pension plan as used by the actuary for the purpose of an actuarial valuation. The purpose of an Actuarial Value of Assets is to smooth out fluctuations in market values.

8. Actuarially Equivalent

Of equal actuarial present value, determined as of a given date, with each value based on the same set of actuarial assumptions.

APPENDIX D – GLOSSARY

9. Amortization Payment

The portion of the pension plan contribution that is designed to pay interest and principal on the Unfunded Actuarial Liability in order to pay for that liability in a given number of years.

10. Entry Age Normal Actuarial Cost Method

A method under which the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages.

11. Funded Ratio

The ratio of the Actuarial Value of Assets to the Actuarial Liabilities.

12. Normal Cost

That portion of the actuarial present value of pension plan benefits and expenses, which is allocated to a valuation year by the actuarial cost method.

13. Projected Benefits

Those pension plan benefit amounts which are expected to be paid in the future under a particular set of actuarial assumptions, taking into account such items as increases in future compensation and service credits.

14. Unfunded Actuarial Liability

The excess of the Actuarial Liability over the Actuarial Value of Assets.

CHEIRON

Classic Values, Innovative Advice

Retirement Plans of
San Diego Transit Corporation

CHEIRON
Classic Values, Innovative Advice

Actuarial Valuation Results as of July 1, 2020

February 4, 2021

Alice I. Alsberghe, ASA, MAAA, EA

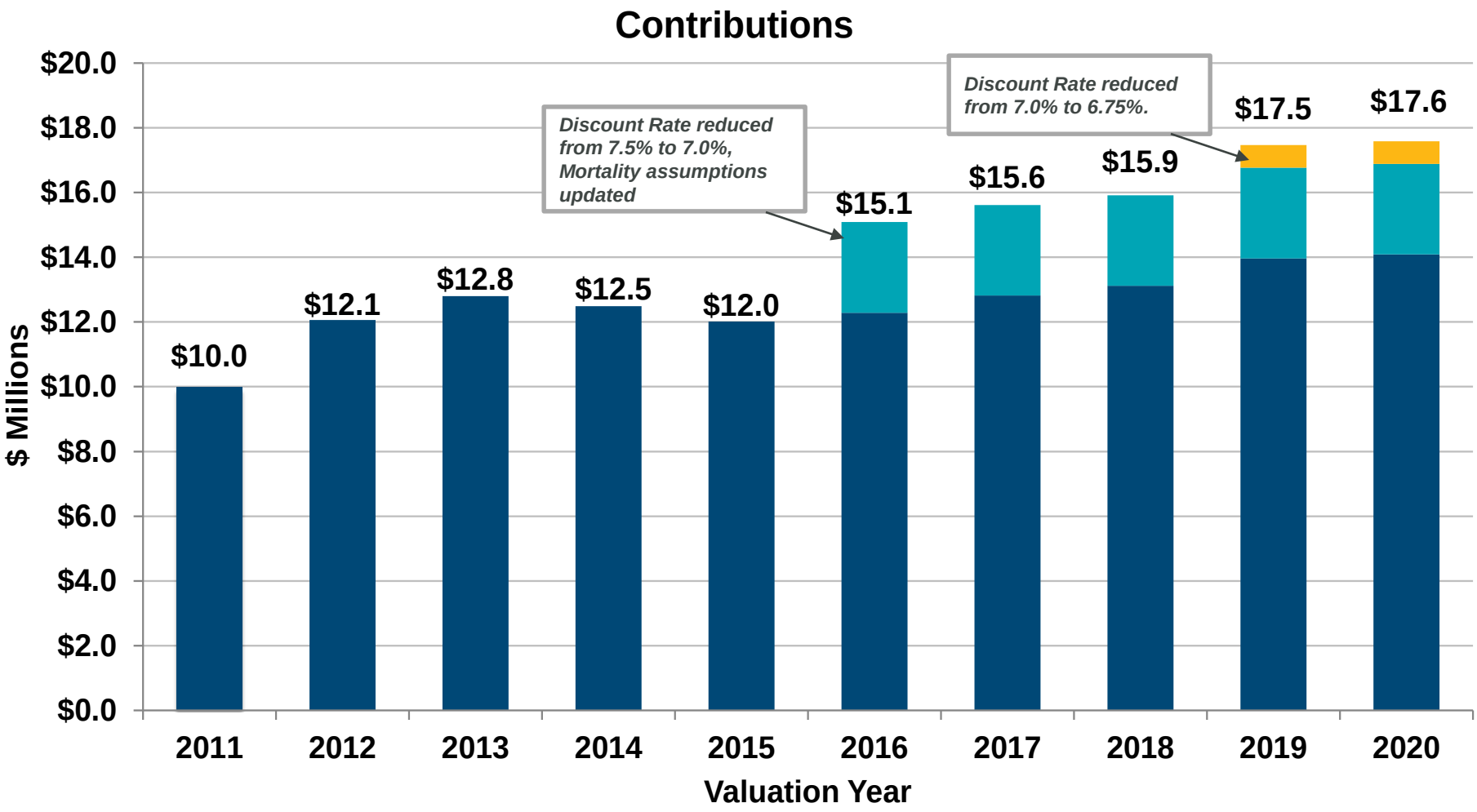
Today's Discussion

- Plan Cost for Fiscal Year 2021-2022 based on 2020 Actuarial Valuation
- Plan History
- Plan Projections with CARES Relief
- Next Steps

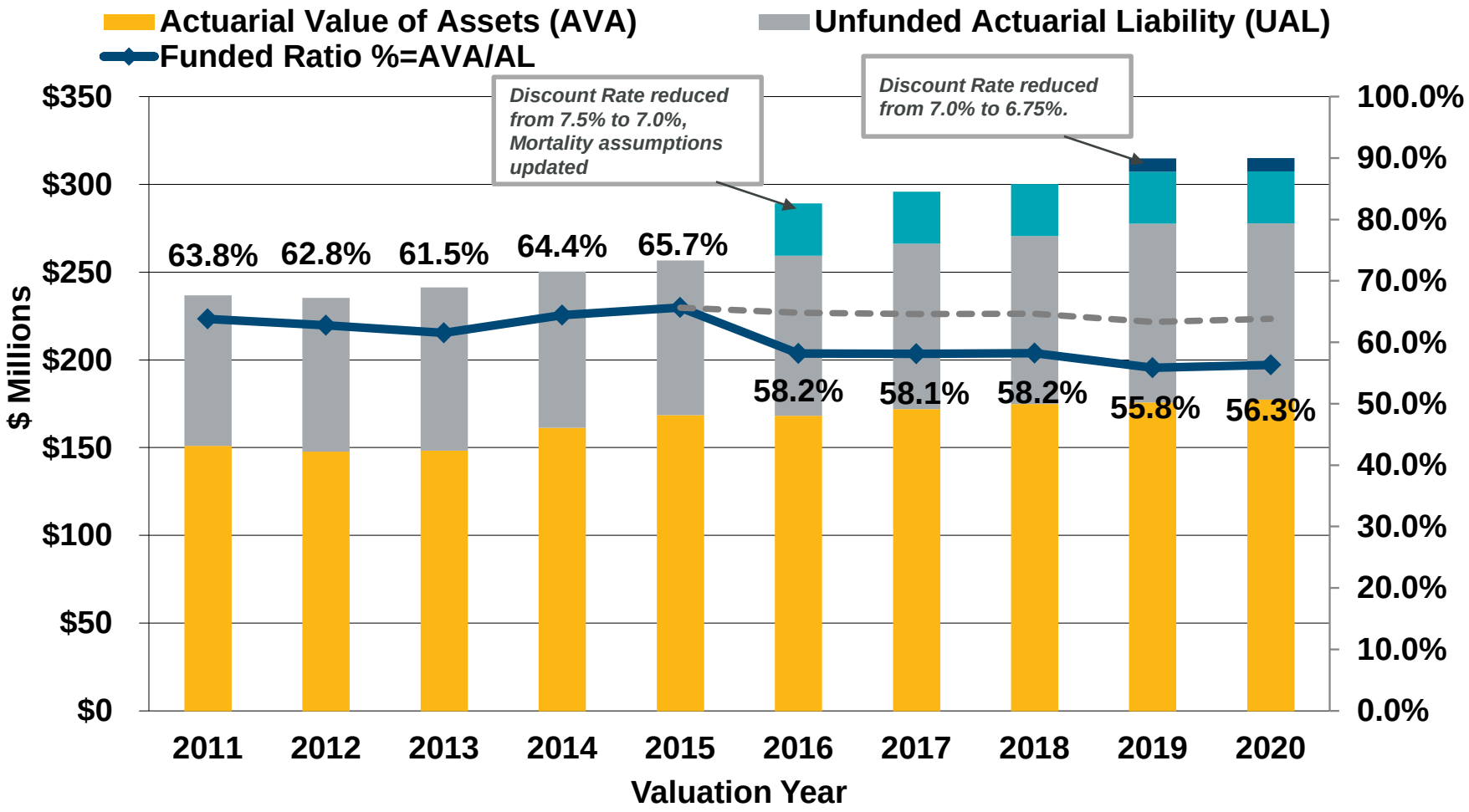
Plan Cost – Changes

Total Contribution Reconciliation		
Fiscal Year 2020-2021	**$**	**17,466,000**
Actuarial investment experience		613,000
Demographic, salary and COLA experience, and other miscellaneous factors		(327,000)
Fewer benefits earned by active membership due to closed plan		(166,000)
Fiscal Year 2021-2022	**$**	**17,586,000**

Plan History – Contributions

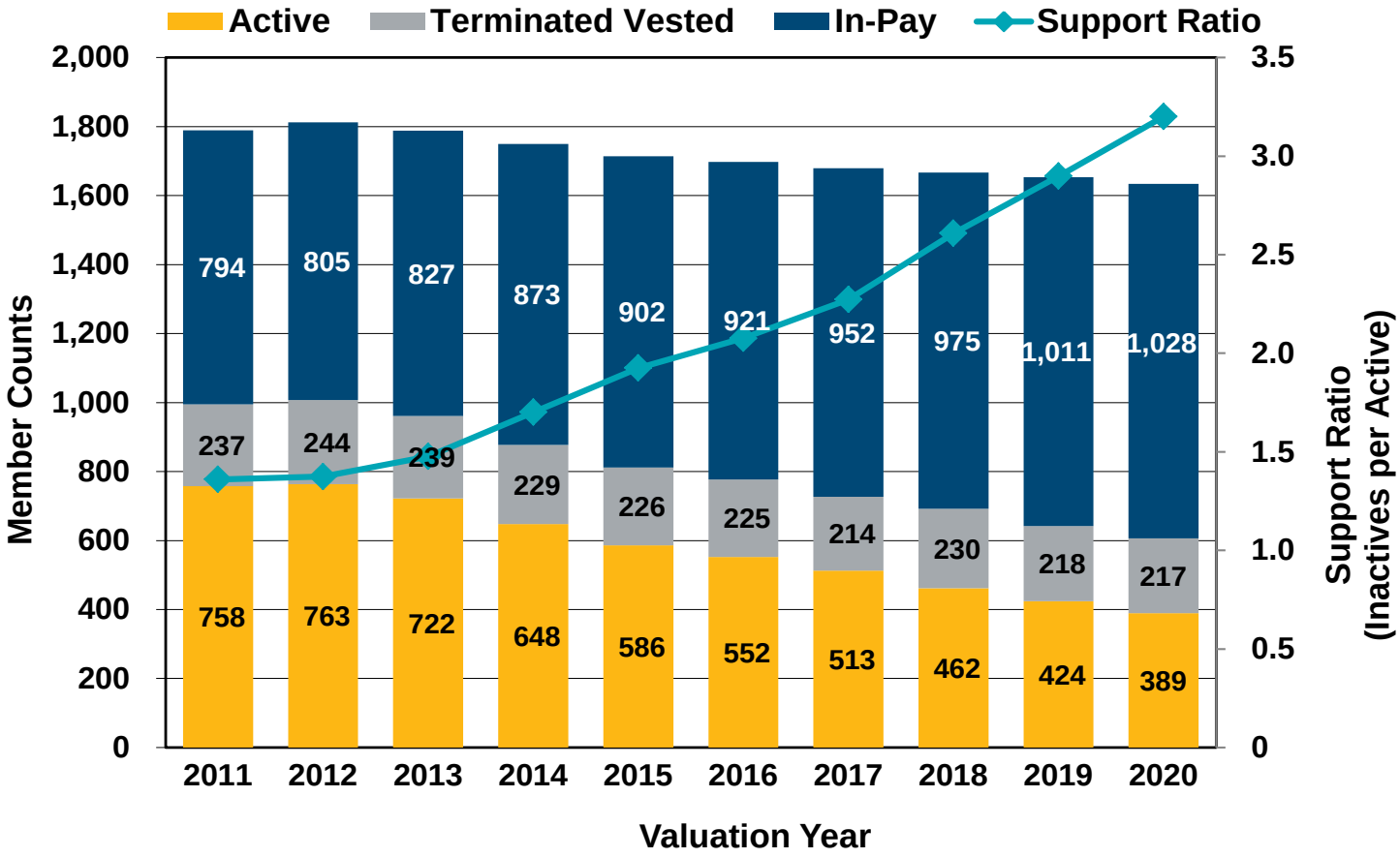


Plan History – Funding



Note: As of July 1, 2020, the Funded Ratio based on the Market Value of Assets is 52.6%.

Membership & Support Ratio



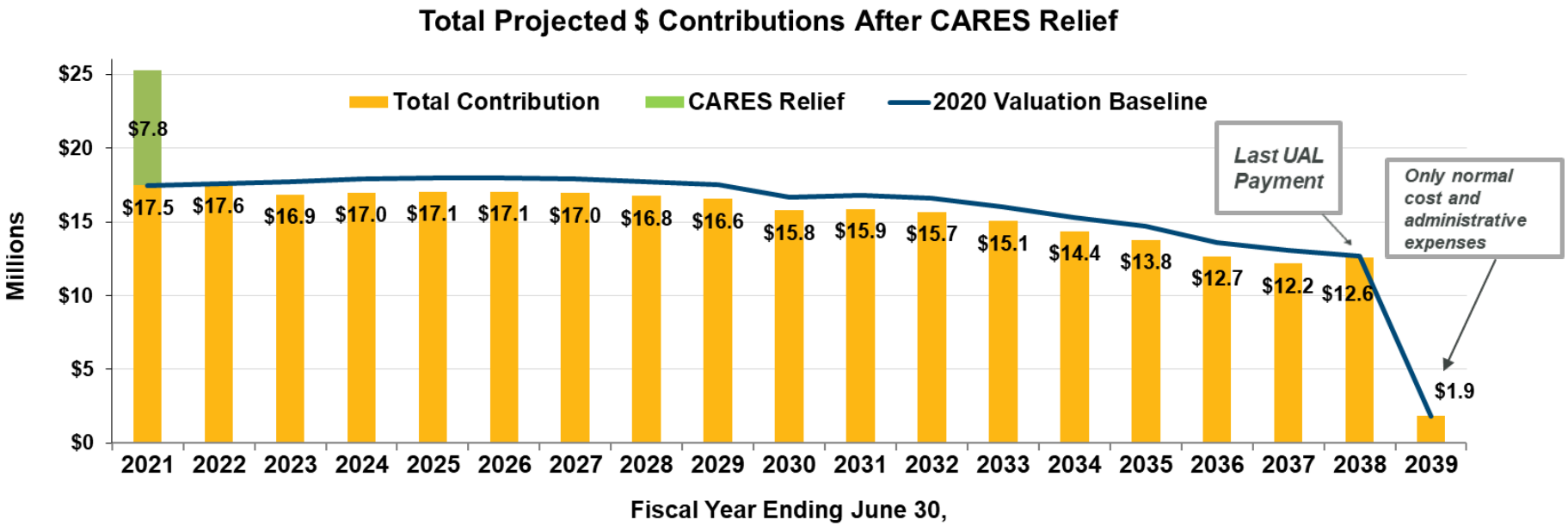
Active	758	763	722	648	586	552	513	462	424	389
Term Vested	237	244	239	229	226	225	214	230	218	217
In-Pay	794	805	827	873	902	921	952	975	1,011	1,028
Total	1,789	1,812	1,788	1,750	1,714	1,698	1,679	1,667	1,653	1,634

Total membership has decreased by 8.7% over the past decade.

COVID-19 Impact on Plan Assets

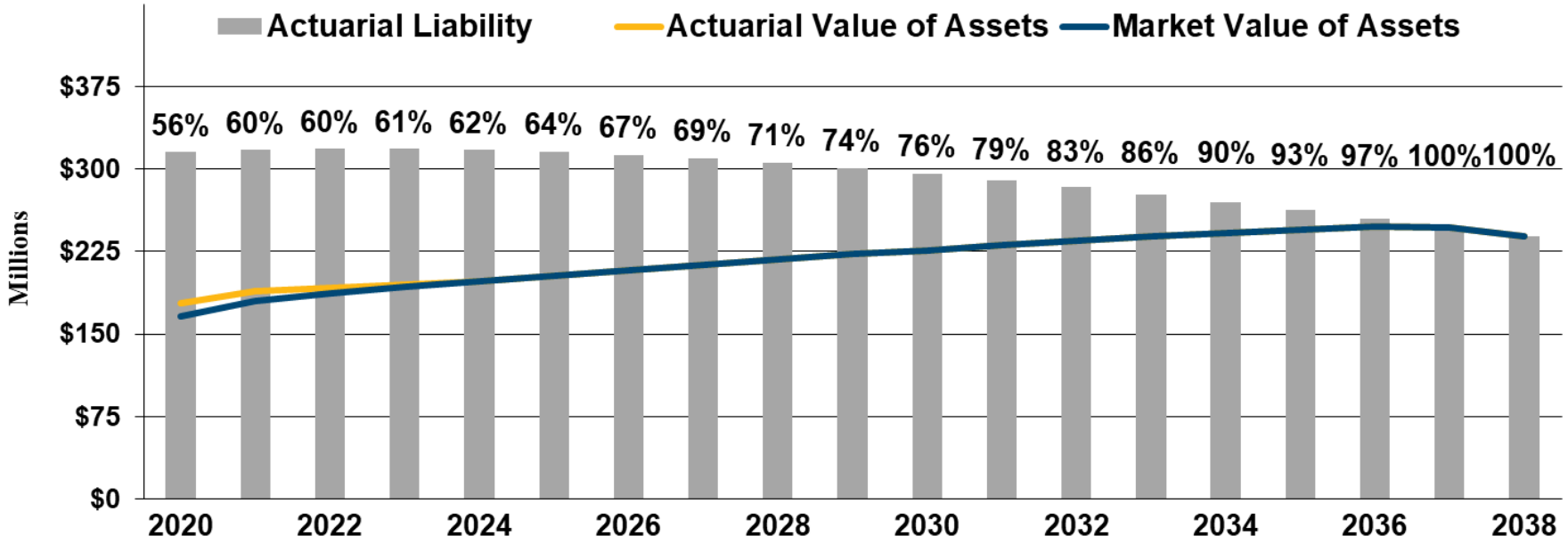
- Estimated asset returns at end of January 2020 were approximately 4.4%
- COVID-19 hit, markets crashed, and then rebounded
- However, asset return as of June 30, 2020 was 0.0% (net of all investment expenses), below the pre-COVID-19 level
- Board approved $7.8 million in CARES Relief to fund the estimated asset loss due to COVID-19
- The following projections assume $7.8 million CARES Relief will be made before June 30, 2021

Projected Total Contributions



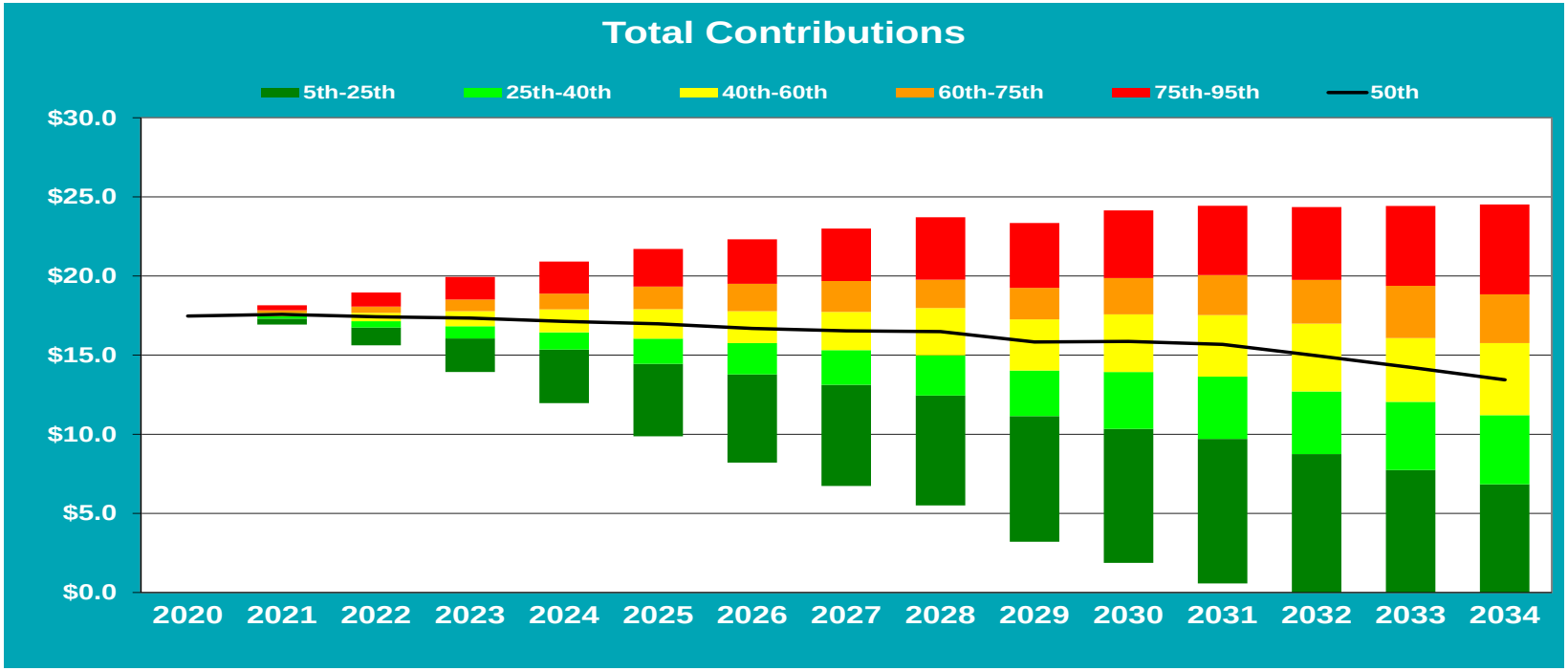
- Contributions of $17.5 million (from the 2019 valuation) and $7.8 million in CARES relief are expected to be made by June 30, 2021
- FYE 2022 contribution requirement is determined by the 2020 valuation, snapshot of plan assets and demographics as of June 30, 2020
- Additional CARES contribution will be recognized as an actuarial gain in the 2021 valuation, ultimately lowering the contribution by about $900,000 for 15 years starting with FYE 2023

Projected Funded Ratio



- CARES Relief immediately recognized in the assets for the July 1, 2021 valuation
- Funded ratio expected to increase to 60% in 2021 (only 57% without the additional CARES Relief contribution)
- Projected funded ratios are 2%-3% higher with CARES Relief
- Plan is projected to be fully funded by 2037 valuation

Stochastic Projection of Contributions



Based on current SDTC funding and amortization policies; future actuarial investment gains or losses are amortized over a 15-year period

Valuation	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2031	2033	2034
Actives	389	359	317	281	248	219	194	172	152	135	120	107	95	84	75
Inactives	1,245	1,225	1,203	1,181	1,157	1,132	1,106	1,079	1,051	1,022	991	960	927	894	860
Total Members	1,634	1,584	1,520	1,462	1,405	1,351	1,300	1,251	1,203	1,157	1,111	1,067	1,022	978	935

Next Steps

- Perform actuarial experience study to analyze the economic and demographic assumptions used in valuations and projections
  - Last full experience study done in 2016, typically performed for SDTC every 5 years
  - Focus is generally on mortality assumptions and assumed rate of investment return
- Cheiron performed an independent mortality study based on our ATU clients (including SDTC) and developed sets of mortality rates for ATU active, disabled, and retired members
  - These mortality tables may be used to more accurately reflect the mortality experience of your members

Reliance

The purpose of this presentation is to discuss the July 1, 2020 actuarial valuation results for the Retirement Plans of San Diego Transit Corporation.

In preparing this presentation, we relied on information (some oral and some written) supplied by the plan administrator. This information includes, but is not limited to, the Plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Cheiron utilizes ProVal, an actuarial valuation application leased from Winklevoss Technologies (WinTech) to calculate liabilities and project benefit payments. We have relied on WinTech as the developer of ProVal. We have a basic understanding of ProVal and have used ProVal in accordance with its original intended purpose. We have not identified any material inconsistencies in assumptions or output of ProVal that would affect this valuation.

Deterministic projections in this presentation were developed using P-scan, a proprietary tool used to illustrate the impact of changes in assumptions, methods, plan provisions, or actual experience (particularly investment experience) on the future financial status of the System. P-scan uses standard roll-forward techniques that implicitly assume a stable active population.

Future results may differ significantly from the current results presented herein due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in Plan provisions or applicable law. The future outcomes become increasingly uncertain over time, and therefore the general trends and not the absolute values should be considered in the review of these projections.

This presentation has been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable law and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this presentation. This presentation does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This presentation was prepared exclusively for the Retirement Board and MTS Board for the purposes described herein. Other users of this presentation are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

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Principal Consulting Actuary

Alice I. Alsberghe, ASA, MAAA, EA
Consulting Actuary

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Agenda Item No. 6

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

February 4, 2021

SUBJECT:

ZERO EMISSION BUS (ZEB) PILOT PERFORMANCE AND TRANSITION PLAN UPDATE (MIKE WYGANT & KYLE WHATLEY)

INFORMATIONAL ITEM

Budget Impact

None.

DISCUSSION:

In October 2017, the Board of Directors authorized the Chief Executive Officer to develop a Pilot Project to test the use of ZEB's in our service area to further understand the potential impacts of the proposed California Air Resources Board (CARB) Innovative Clean Transit (ICT) regulation. In 2018, CARB passed the ICT regulation, which mandated transit operators with fleets larger than 100 buses to fulfill specific ZEB purchase requirements starting in 2023.

To support the ZEB Pilot Project, and with the Board of Directors approval in May 2018, MTS procured six 40-foot low-floor electric battery-powered buses and nine depot chargers. An additional three chargers were approved and procured in June 2019 to complete the charger infrastructure for the pilot program. In September 2020, the Board of Directors approved the ZEB Rollout Plan for submittal to CARB and the MTS ZEB Transition Plan.

MTS staff will provide the Executive Committee with an update on the MTS ZEB Pilot performance and Transition Plan.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Zero Emission Bus (ZEB) Pilot Program Update

Policy History

- Urban Fleet Transit Rule
  - Rule passed February 2000 by California Air Resources Board (CARB)
  - Alternative fuel path made way for CNG fleet
- Innovative Clean Transit Rule (ICT)
  - Rule passed December 2018 by CARB
  - Rollout plan due to CARB by December 2020 (submitted and approved)
  - Convert fleet to Zero Emission Vehicles by 2040 (Governor's goal)
  - 60 foot, 45 foot & Minibuses exempt until 2026

Innovative Clean Transit Rule (2018):

ZEB Purchase Mandate: The regulation requires transit agencies to acquire a minimum number of ZEBs at the time of new bus purchases, based on the following schedules:

Large Transit Agencies

2023 – 25 percent
2026 – 50 percent
2029 and after – 100 percent

MTS Timeline

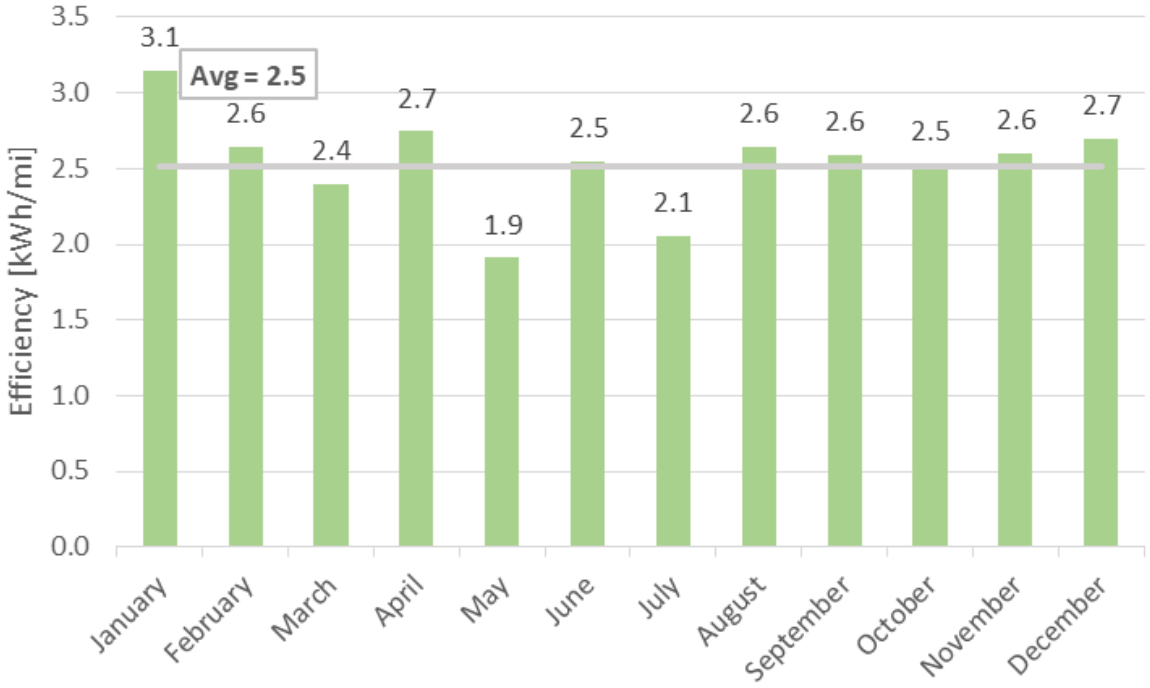
- Board approved pilot program in October 2017
- Pilot Charging Infrastructure installed (plug-in stand-alone chargers):
  - Imperial Ave Division – July 2019
  - Kearny Mesa, East County & South Bay Divisions – April 2020
- Battery electric buses begin in-service December 2019
- Iris Rapid: Articulated sixty-foot electric bus pilot scheduled to begin late 2022
- Transition Study & CARB's Rollout Plan approved Sept 2020
  - CARB approves MTS Rollout Plan December 2020
- Pilot program ends December 2021

ZEB Pilot Program Performance Report

January 2020 – December 2020

quietcleanelectric

Monthly Fleet Efficiency (Total Miles)



Notes:

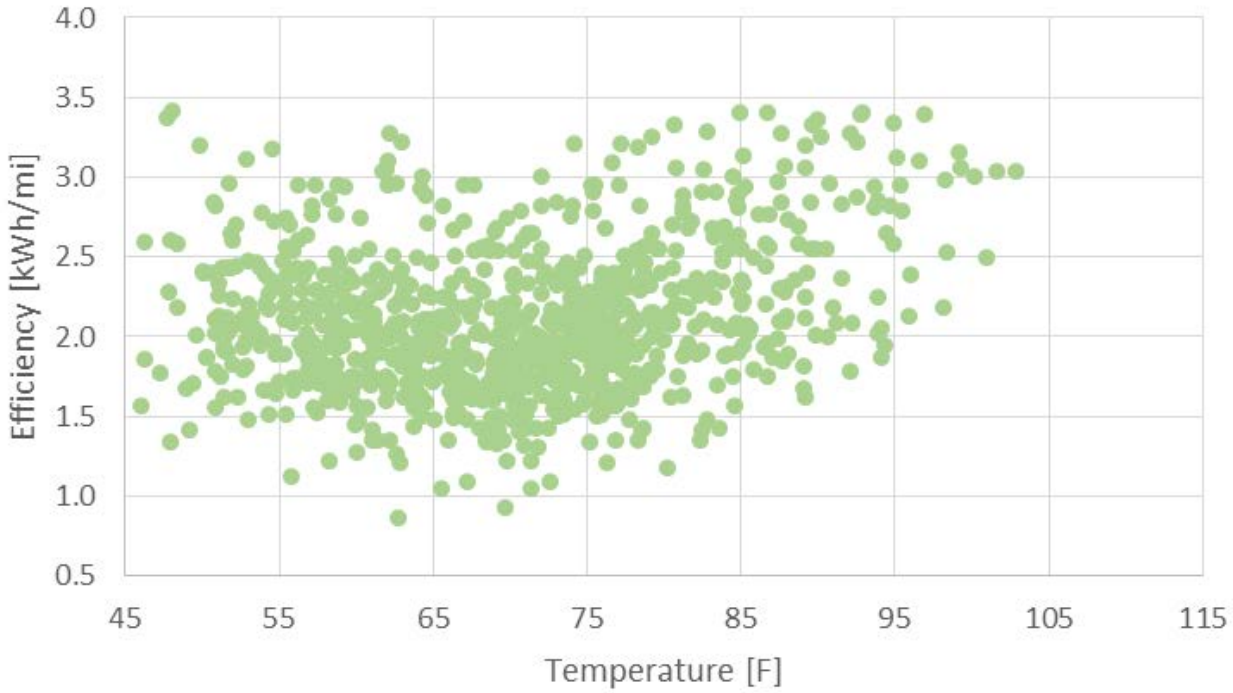
- Efficiency shown is at the meter
- Data from Fleetwatch and SDG&E bills
- Not in line with power bill dates; 1st to end of the month

Avg. Efficiency by Route (Revenue Miles)

Notes:

- Data from 360 Reports for Jan-Dec 2020
- Efficiency calculated at bus, not meter

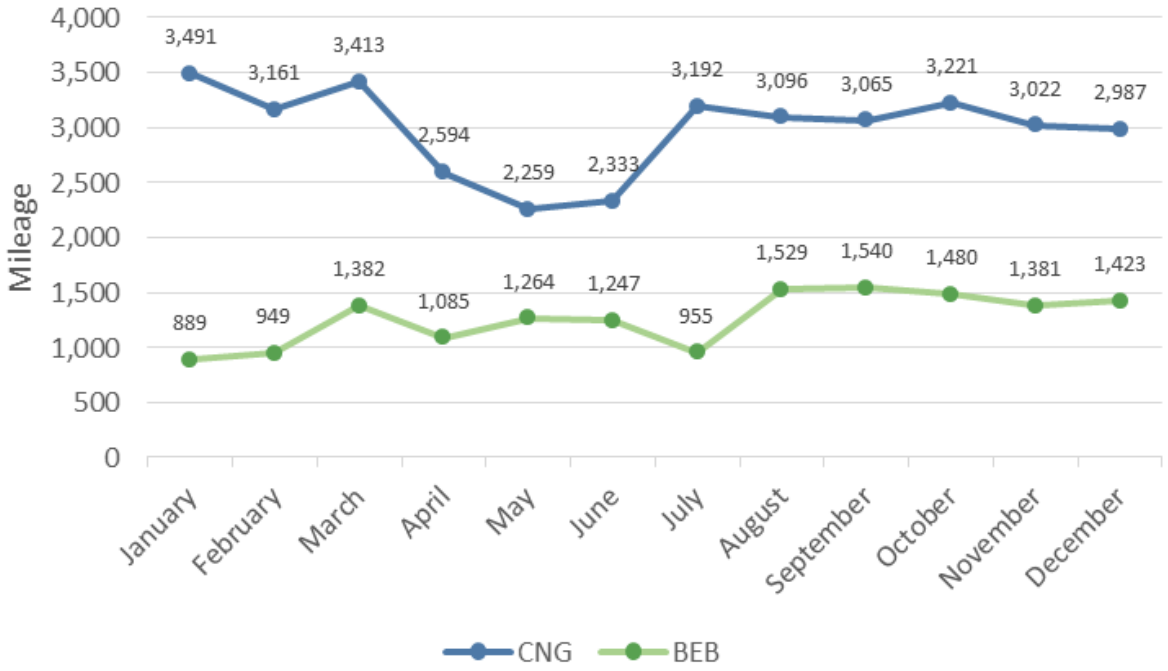
Efficiencies vs. Temperatures (Revenue Miles)



Notes:

- Individually observed efficiencies
- Data from 360 Reports
- Jan-Dec 2020
- Clear V-shape with low at about 67F

CNG vs. BEB Monthly Mileage



Average Series Mileage	
CNG	3,002
BEB	1,293

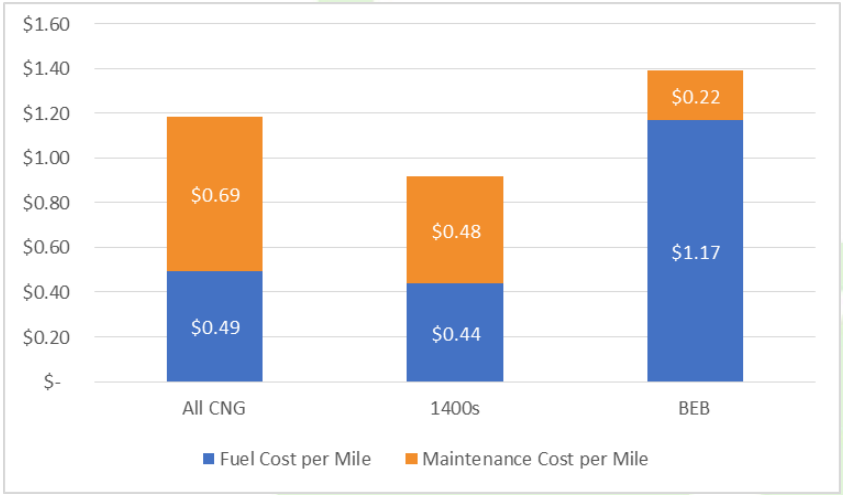
Notes:

- Data from MTS
- Not in line with power bill date; 1st to end of the month

CNG vs. BEB Fuel & Maintenance

Fleet	Fuel Cost per Mile	Maintenance Cost per Mile	Combined
All CNG	$ 0.49	$ 0.69	**$ 1.18**
New CNG	$ 0.44	$ 0.48	**$ 0.92**
BEBs	$ 1.17	$ 0.22	**$ 1.39**

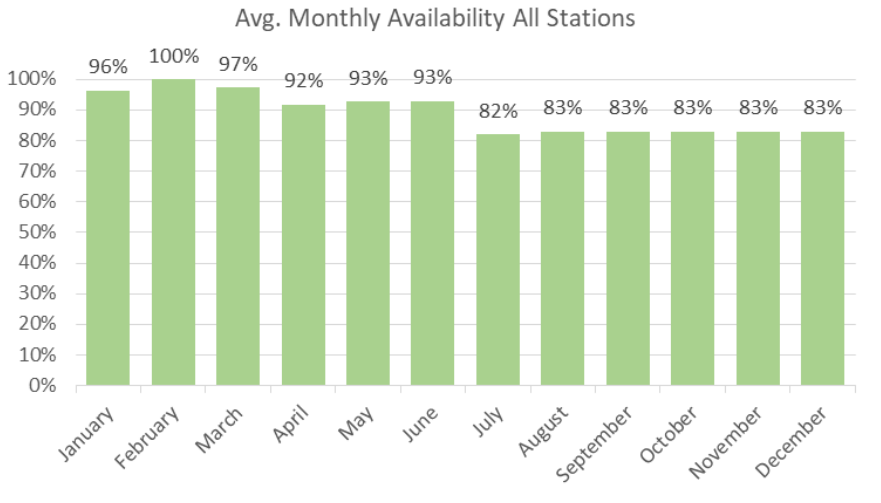
Fleet	Total Fuel Cost	Total Maintenance Cost	Combined
All CNG	$ 5,116,397	$ 7,102,995	$ 12,219,391
New CNG	$151,637	$164,103	$315,740
BEBs	$108,759	$18,928	$127,687



Notes:

- Data from MTS mtc/fuel data pull (Dec 2020)
- CNG maintenance cost/mile includes work order costs only
- Data from Jan to Dec 2020
- New CNG = (1400 Series = 10 buses)

Availability

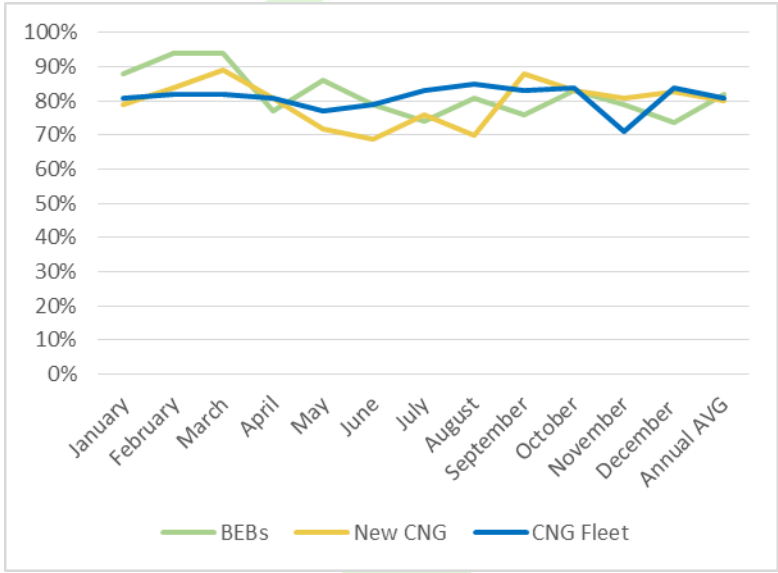


Charger Availability-

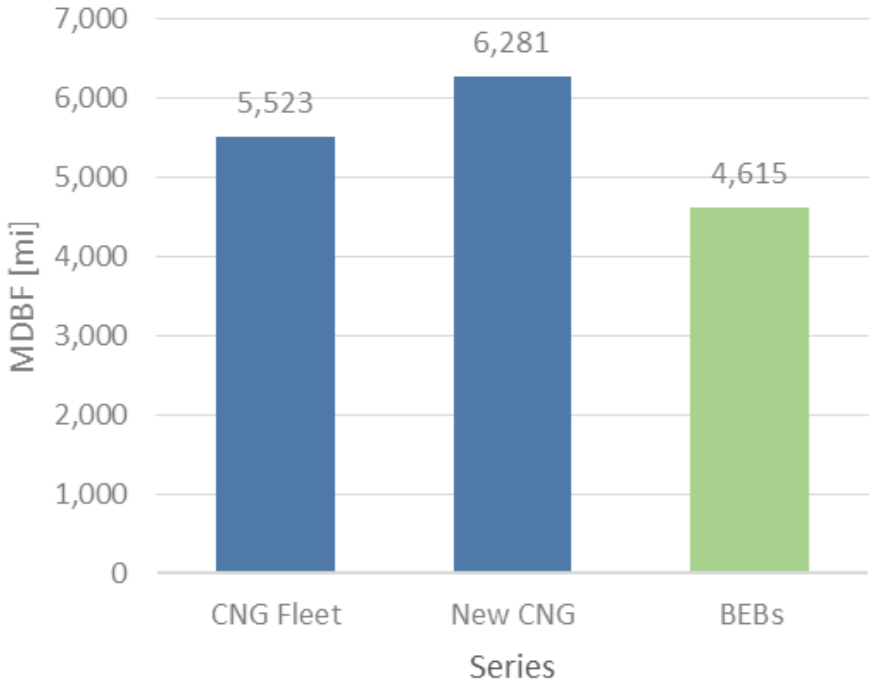
- Stations 1-6 came online in January; Stations 7-12 came online in May
- Data from MTS for Jan through Dec 2020
- South Bay chargers have been offline due to a circuit breaker issue since May 2020
- Annual Avg = 87%

Bus Availability-

- Data from MTS for Jan through Oct
- Annual Avg for BEBs = 82%



Mean Distance Between Failures



Note:

- Data from MTS for Jan through Dec 2020

ZEB Deployment

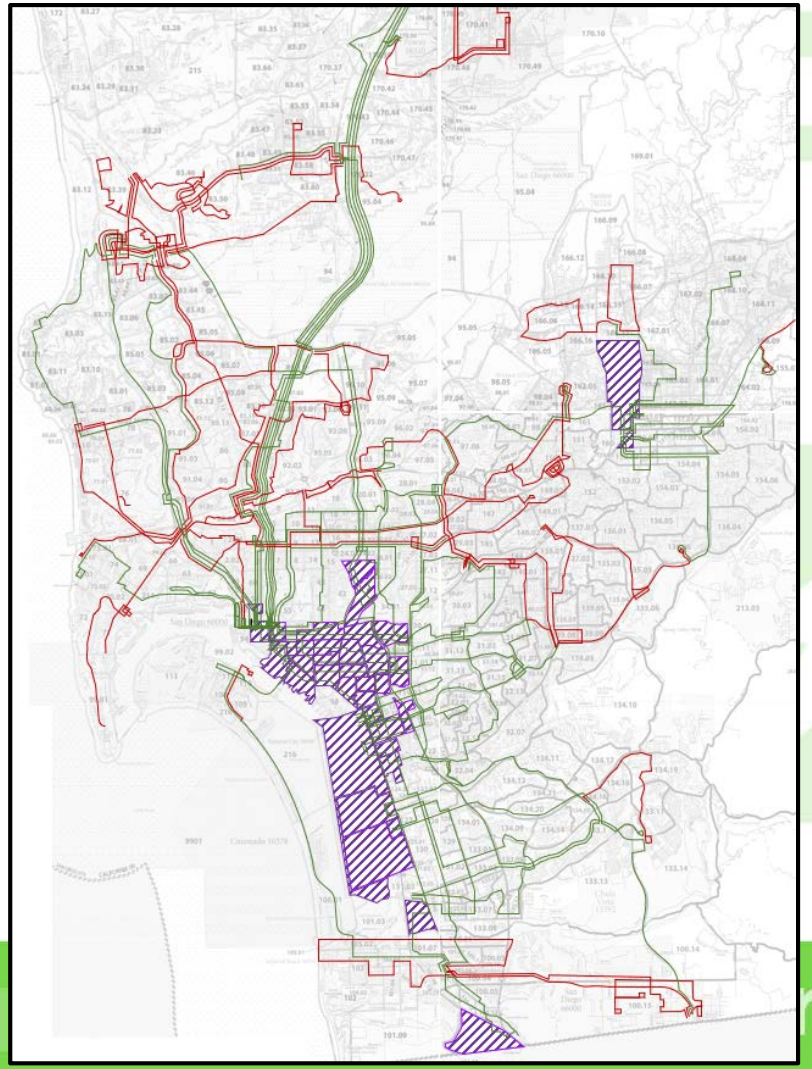
MTS Bus Network Map
<u>All Routes, all bus types</u>

- Green Lines = DAC Routes

  (at least one stop in an SB 535 DAC)

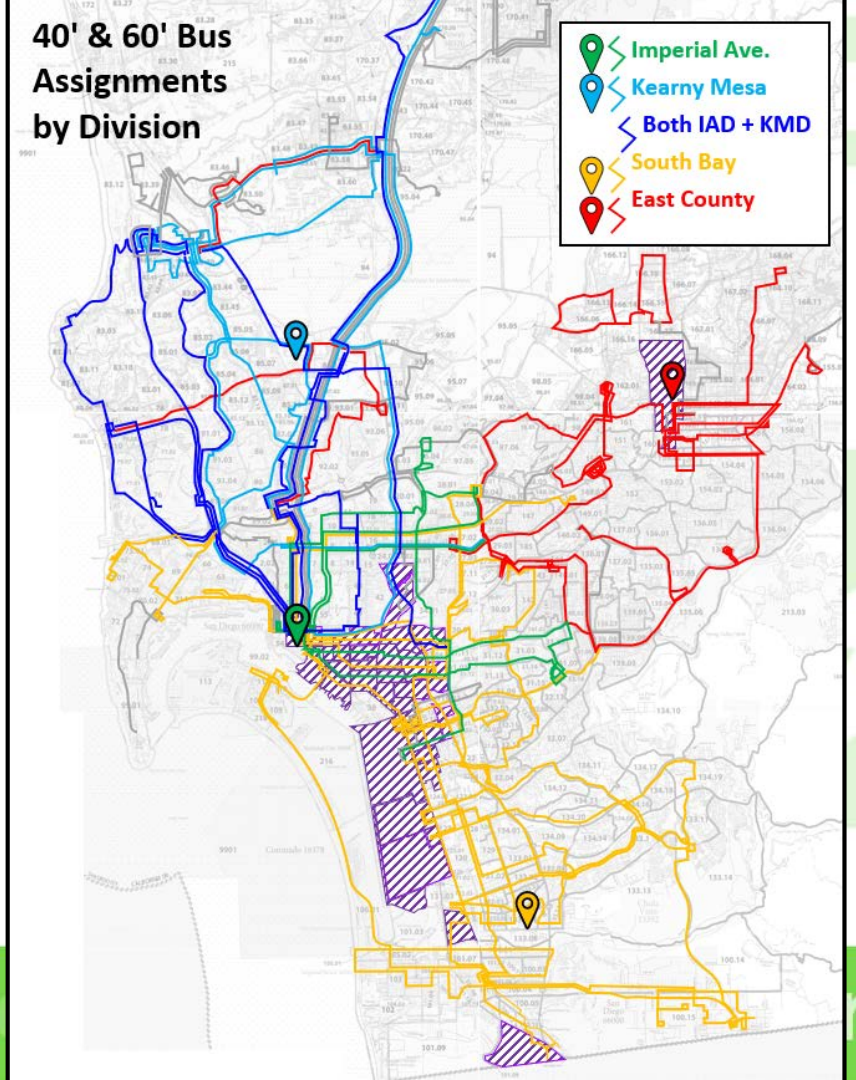
- Red Lines = Non-DAC Routes

  (no stops in an SB 535 DAC)

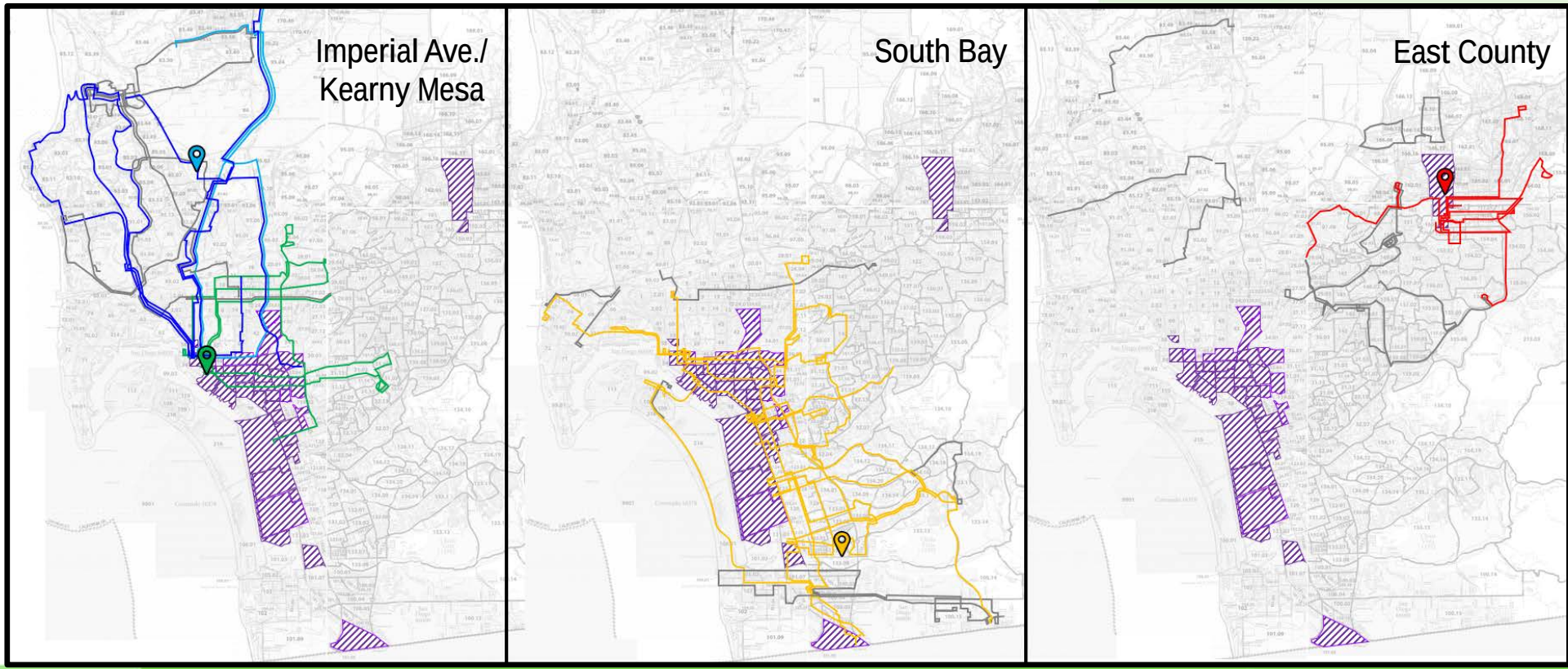


ZEB Deployment

- Four divisions for 40’/60’ buses
  - Imperial Ave. (Downtown)
  - Kearny Mesa
  - South Bay (Chula Vista)
  - East County (El Cajon)
- Divisions require charging infrastructure
  - Prioritize charging infrastructure
  - How many DAC-serving routes operate from each division?



DAC Routes by Division



ZEB Deployment

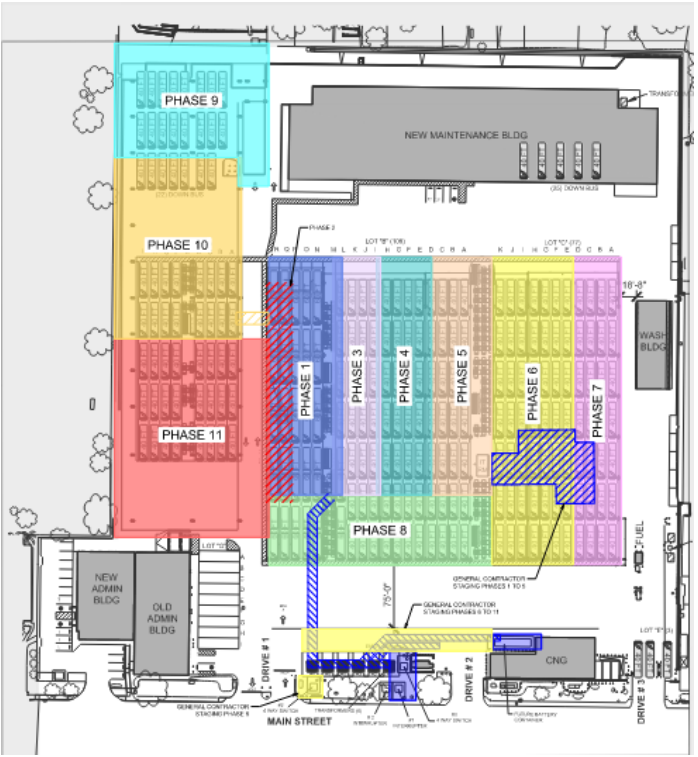
- Proposed Charging Infrastructure Priority
  1. South Bay
  2. Imperial Ave.
  3. Kearny Mesa
  4. East County
- Proposed Route Assignment Priority
  - Buses assigned on a daily basis: “Ready lanes” for CNG buses and BEBs
  - BEBs prioritized to DAC routes
    - DAC route listing kept updated for Operations Divisions (route changes, ridership, CalEnviroscreen updates)
  - Bus assignment tracking for accountability
  - Constraints
    - BEB range limitations vs. route block lengths
    - Bus types & availability (40’ vs. 60’)
    - 60’ BEB buses purchased specifically for Iris Rapid (non-DAC route) per grant requirements
    - Other considerations: interlines mix DAC and non-DAC routes; standbys and unplanned events require flexibility

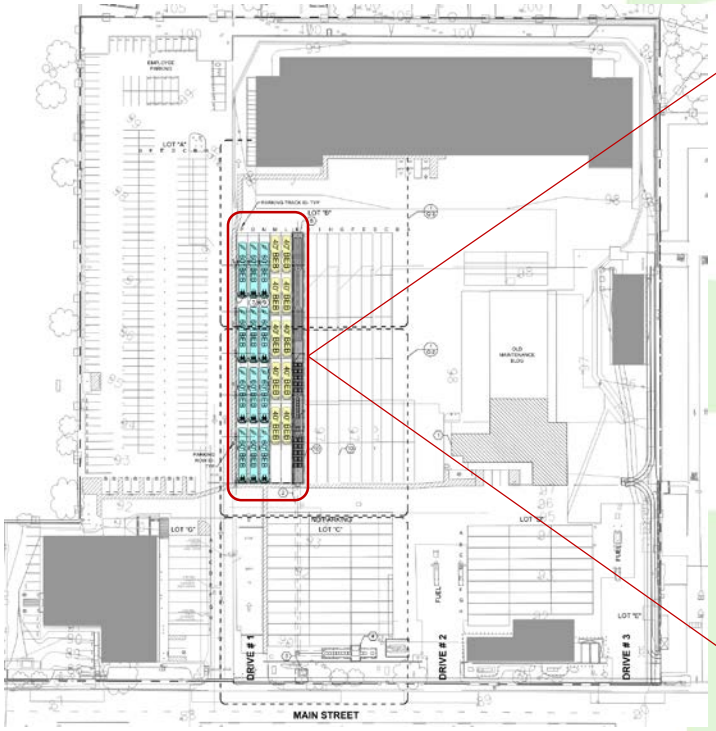
Charging Infrastructure

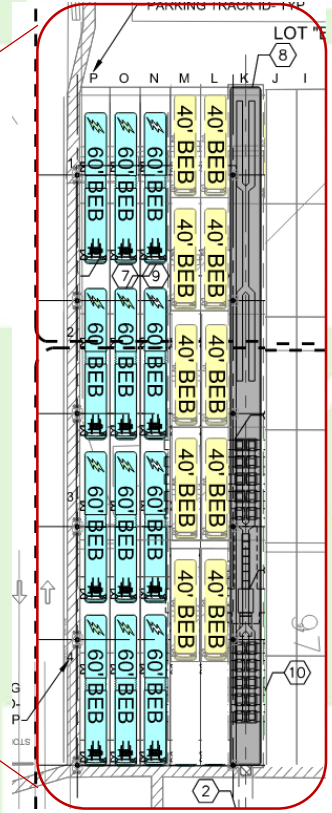
- Iris Rapid:
  - Articulated sixty-foot electric bus pilot scheduled to begin late 2022
  - Buses will operate from South Bay Bus Maintenance Facility
  - First scalable overhead charging infrastructure

- South Bay Overhead Charging Infrastructure Master Plan conducted 2020
  - Developed Phased approach to construct overhead charging infrastructure while maintaining current division operations
  - Total of 11 phases to support potential 240 BEBs at SBMF
  - Phase 1 of Master Plan provides overhead structure to support charging
    - 12 60’ BEB buses, online late 2022 for the IRIS Rapid Project
    - 10 additional 40’ BEB busses, in 2023

Charging Infrastructure

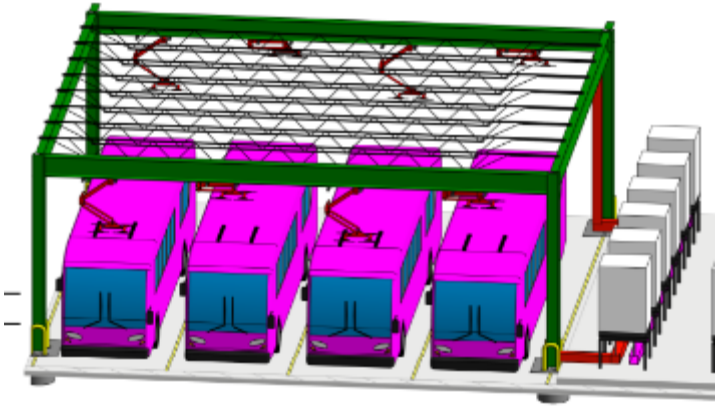


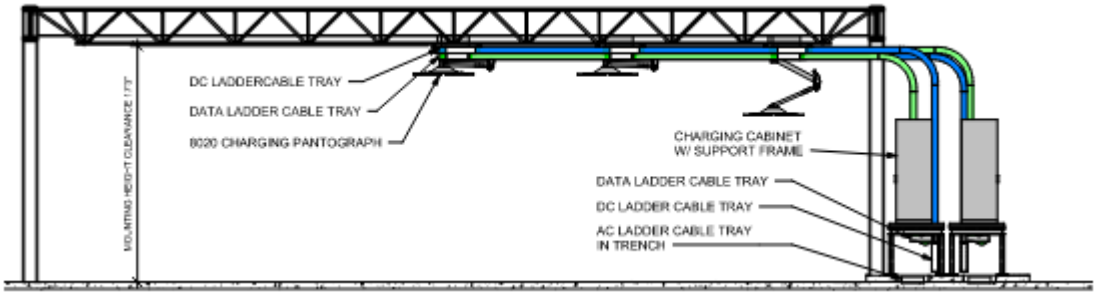


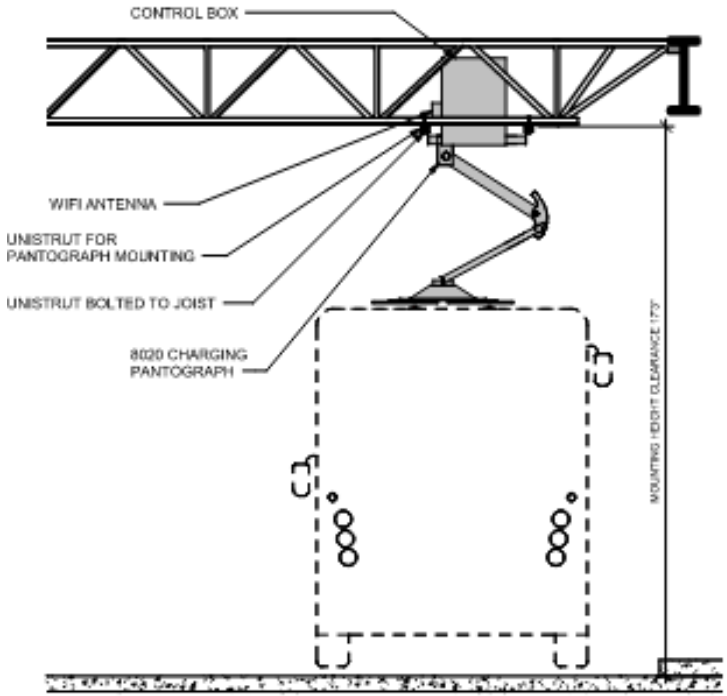


quiet clean electric

Charging Infrastructure

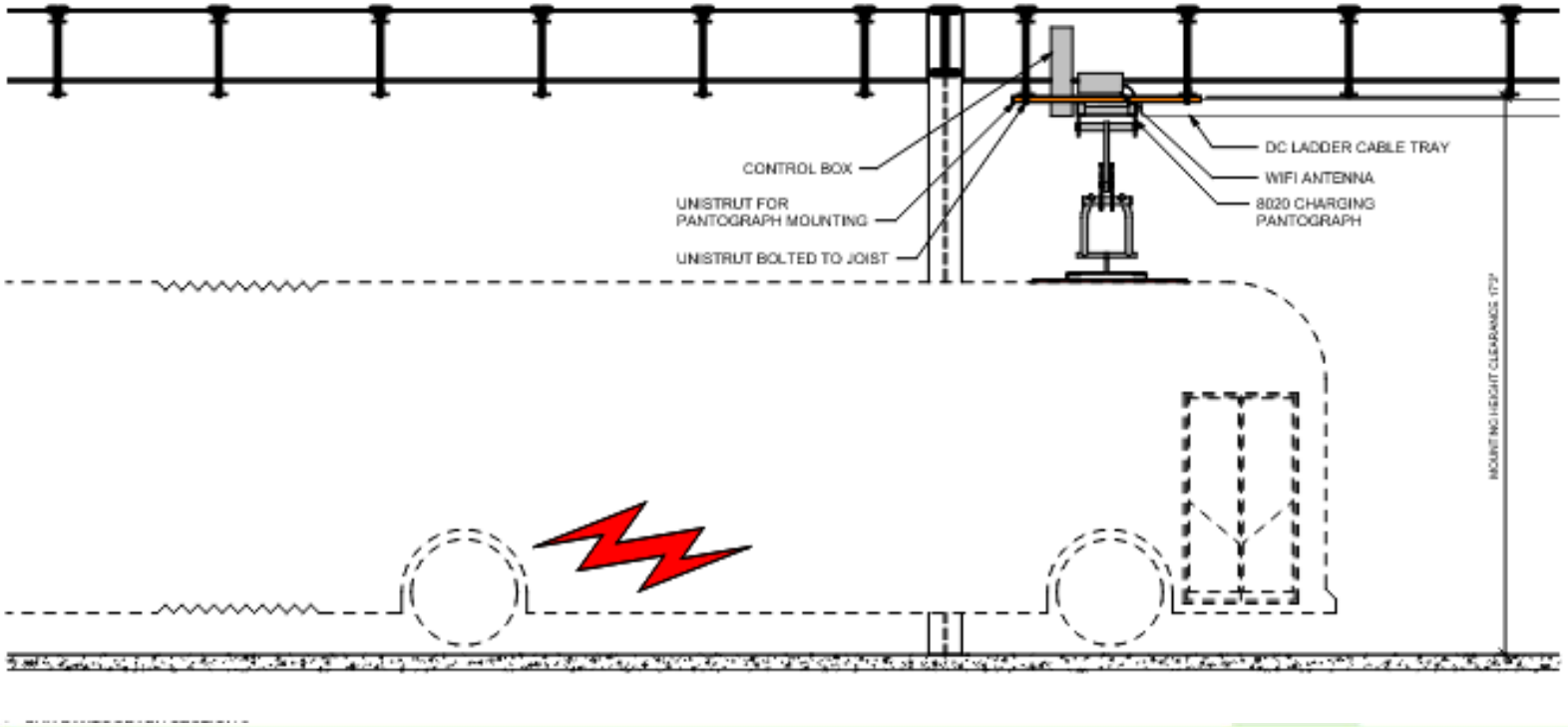






quiet clean electric

Charging Infrastructure



Charging Infrastructure

- Installation Timeline:
  - 60% Design - Complete
  - 100% Design – Summer 2021
  - Begin Charger Procurement – 3/2021
  - Begin Construction Procurement – 7/2021
  - Phase 1 Construction – 1/2022 thru 4/2023*

* First 12 positions complete Fall 2022 to support Iris Rapid

Funding

- What we received:
  - Low Carbon Transit Operations Program (LCTOP) = $9 Million
  - Hybrid and Zero Emission Truck and Bus Voucher Incentive Program (HVIP) = $1.1 Million (only received for the six (6) buses and six (6) chargers)
    - HVIP budget was depleted in October 2019. Application were put on hold.
    - FY20/21 budgeted $25 million from AQIP. CARB assumes as much as $400 million in requests
    - Allocation modifications were made to limit how funding is dispersed per applicant.
  - Transit Intercity Rail Capital Program (TIRCP) = $22 Million

Funding

- Opportunities:
  - California Energy Commission Grants
  - VW Mitigation Fund = Requested $2.1 million
  - SB 350 (Power Your Drive Fleets – SDG&E)
    - Iris Rapid Phase I is part of this program
  - Low/No (ZEB Program – Federal)
    - Applied twice and denied. Majority of awards have been outside California
  - Governors new budget may provided additional money for ZEB and HVIP

Transition Costs

	Baseline S6	26: 25% Accelerated
Fleet	$ 808,294,000	$ 1,190,130,000
Fuel	$ 252,569,000	$ 328,618,000
Infrastructure	$ -	$ 165,483,000
Maintenance	$ 762,263,000	$ 806,232,000
Total	**$ 1,823,126,000**	**$ 2,490,464,000**
Incremental over Baseline		$ 667,338,000
ZEB % in 2040	**2%**	**94%**

Note: All scenarios except S5: 2030 Transition assume that the fleet cannot be expanded and require 1:1 replacement of Vehicles; S5: 2030 Transition assumes the fleet can be expanded to complete 100% ZEB transition by 2030

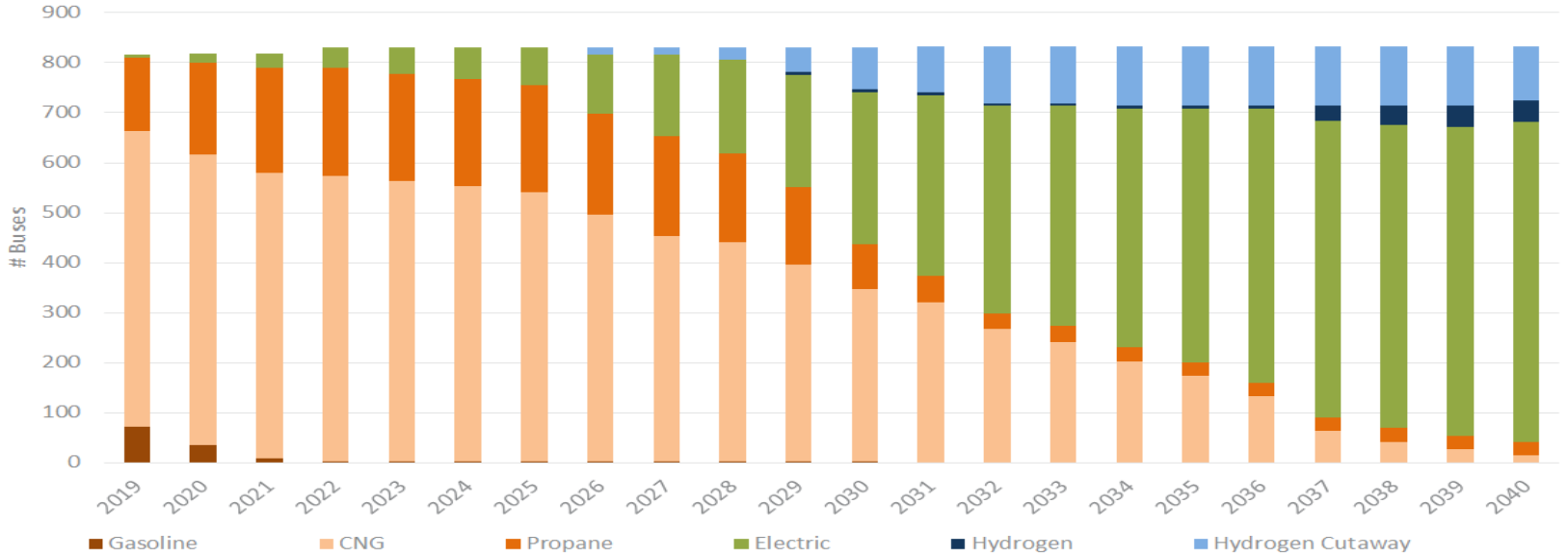
Upcoming Milestones

- Gillig Battery Electric Buses (2 buses) to be begin service February 2021
  - Part of pilot program
  - Will utilize pilot charging infrastructure (plug-in)
- Purchased five (5) Gillig Battery Electric Buses
  - Will utilize pilot charging infrastructure (plug-in)
  - Used for part of the pilot program
- Purchasing twelve (12) sixty-foot battery electric buses
  - Will be the first scalable overhead charging infrastructure
- CARB ICT annual reporting to be submitted March 2021
- Annual Board Update (may include earlier updates *if*):
  - Program modification opportunities arise
  - Structural changes are required

MTS ZEB Procurement Timeline

- 2019: Six (6) battery electric buses (New Flyer)
  - 2019: Six (6) electric chargers (Chargepoint)
  - 2020: Six (6) electric chargers at KMD, East County and South Bay divisions (Chargepoint)
- 2020: Two (2) battery electric buses (Gillig)
- 2021: Five (5) battery electric buses (Gillig)
- 2022: Overhead gantry and inverted pantographs charging infrastructure (South Bay division)
- 2022: Twelve (12) artic battery electric buses (New Flyer)
- 2023 – 2025: 25% ZEB of bus procurement (expected avg. = 10 ZEBs annually)
- 2026 – 2028: 50% ZEB of bus procurement (expected avg. = 25 ZEBs annually)
- 2029 and on: 100% ZEB procurement (approximately 50 ZEBs annually)

25% Early Adoption Pathway



Assumes purchase of 25% ZEBs 2020-2022 prior to CARB ICT mandate; only applicable to 40' bus purchases

Questions

Metropolitan Transit System

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Agenda Item No. 7

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
EXECUTIVE COMMITTEE

February 4, 2021

SUBJECT:

EAT, SHOP, PLAY BUSINESS/RIDERSHIP MARKETING CAMPAIGN (ROB SCHUPP)

INFORMATIONAL ONLY

Budget Impact

None.

DISCUSSION:

In March 2021, MTS will be launching a marketing campaign in partnership with businesses in eight different neighborhoods within the MTS service territory: Barrio Logan, Chula Vista, East Village, Imperial Beach, La Mesa, Lemon Grove, National City and North Park. The program, if successful, can grow into other communities in the future.

The campaign is designed primarily to encourage MTS riders to reconnect, explore and support local businesses. It also continues an MTS marketing strategy to further strengthen its ties within the communities it serves and to connect with the people who live and do business in those communities. It is part of a year-long strategy that will include the launch of PRONTO in the summer and a fall Ridership campaign.

The Eat, Shop, Play campaign elements are being implemented by Civilian, an MTS marketing contractor. These elements include business recruitment, website development, advertising strategies and more. Businesses will be encouraged to provide incentives for riders to make purchases within the stores. In return, MTS will feature these businesses in its outreach campaign that will include advertising, social media, earned media, website presence and more.

Business recruitment begins this month in areas with high concentrations of business. The program goes live on March 1, 2021. Staff will provide an informational report on the campaign details.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Small Business Support Program Overview

Context

A primary ongoing goal of MTS marketing is to build a stronger link with the people and communities we serve.

Recent advertising before COVID-19 focused on connecting with our riders' lifestyles/values, and showcasing how public transit fits in with them

Summary

In the current economic climate, supporting small businesses is more important than ever.

So, we designed a co-operative marketing pilot program – called Eat-Shop-Play – that rewards residents for shopping at local businesses.

Neighborhood-Based

Barrio Logan

Chula Vista


La Mesa

Lemon Grove


East Village

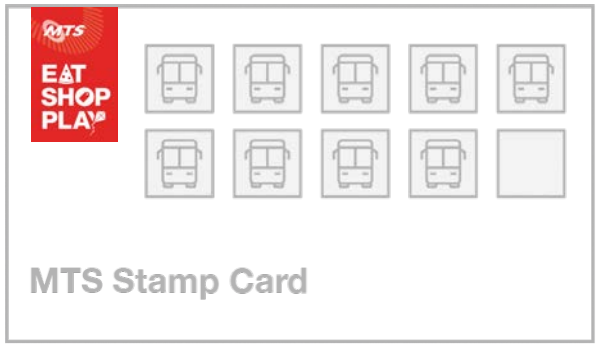
Imperial Beach


National City

North Park

This pilot program, by nature, focuses on the vibrant and diverse neighborhoods of our region. Each of the eight (8) areas chosen for the initial pilot offer transit-adjacent, walkable business districts which capture the spirit of the program.

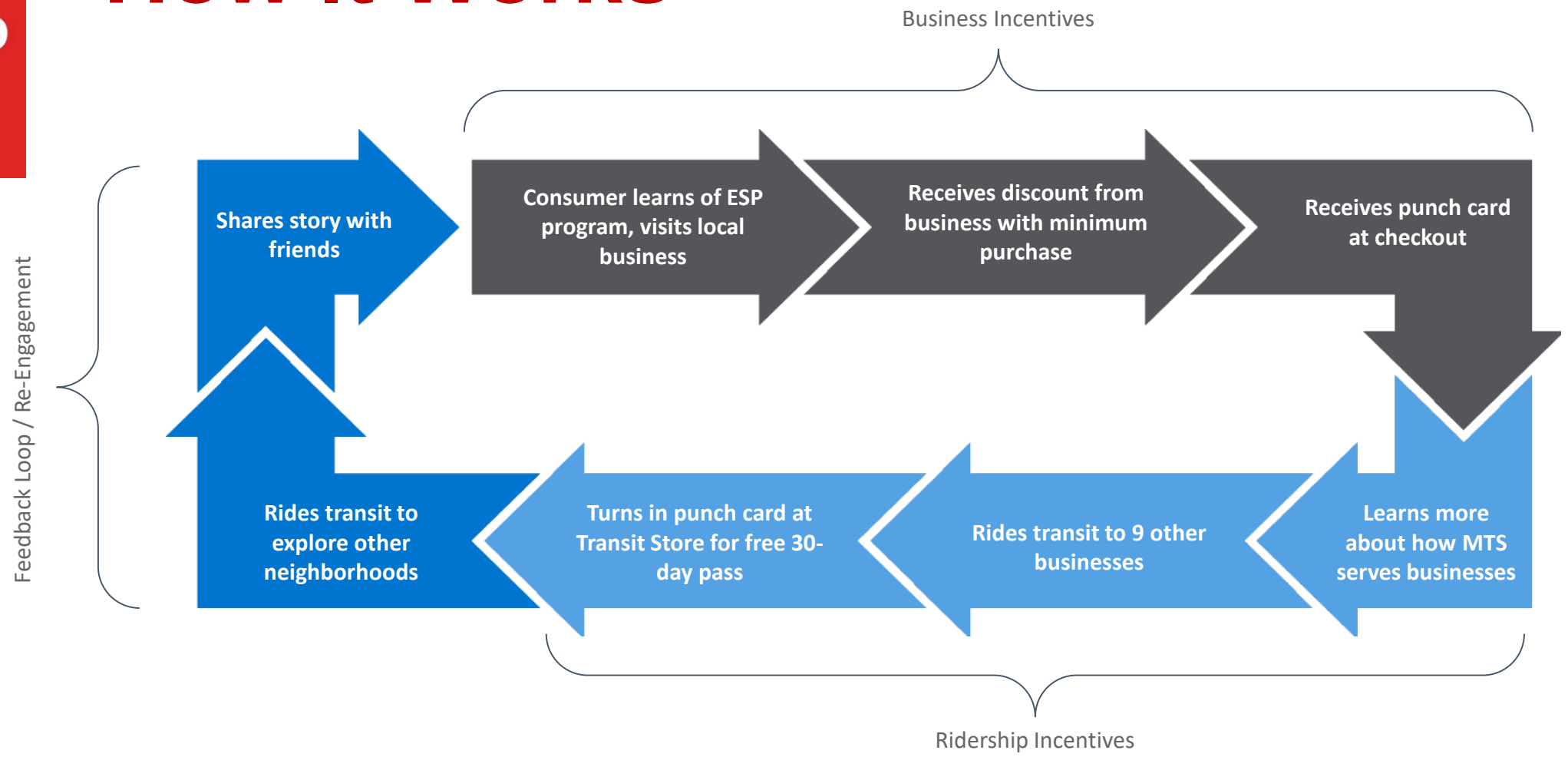
What It Is



MTS will offer locally-owned businesses the opportunity to be featured in an advertising campaign ($270k in ad value), on a dedicated microsite, and across MTS social channels (approximately 40k followers).

Each participating customer gets a branded ‘stamp card’ to track purchases at participating businesses – once they fill out the card, they earn a *free* monthly transit pass.

How It Works


Business Incentives
Shares story with friends
Consumer learns of ESP program, visits local business
Receives discount from business with minimum purchase
Receives punch card at checkout
Learns more about how MTS serves businesses
Rides transit to 9 other businesses
Turns in punch card at Transit Store for free 30-day pass
Rides transit to explore other neighborhoods
Feedback Loop / Re-Engagement
Ridership Incentives

How We'll Recruit Businesses

COMMUNITY LEADERS	• Outreach and toolkits to business-focused orgs (BIDs, Chambers of Commerce) • Presentations at monthly meetings
ELECTED LEADERS	• Toolkits and talking points to Board of Directors + city staff • Coordination of 'Neighborhood of the Week' feature
OWNED CHANNELS	• Social media content + Rider Insider eblasts • Station signage + on-fleet advertising
SOCIAL PARTNERSHIPS	• Outreach to category-specific industry groups on social media • Interviews: webinars, podcasts, etc
DOOR KNOCKING	• Door-to-door soliciting in priority neighborhoods armed with fact sheet/flyer

How We'll Promote It

Advertising

- Billboards
- Paid Social Media
- Digital Banners
- Blogger/Influencer Partnerships

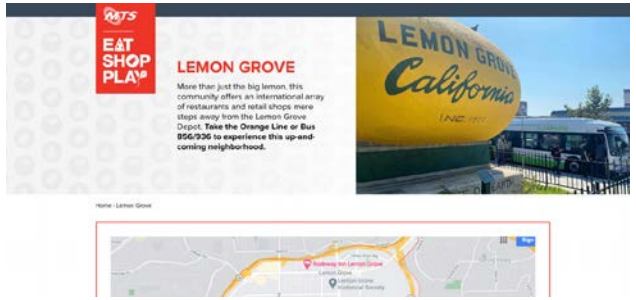
Owned Inventory

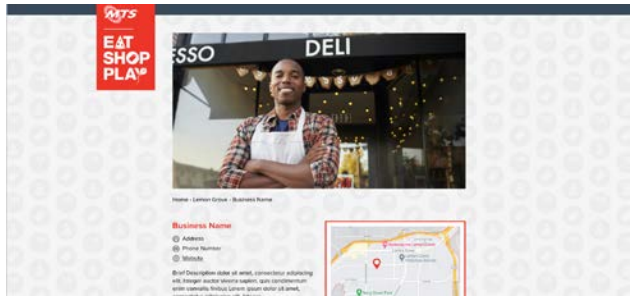
- Transit Shelters
- On-Fleet Signage
- Organic Social Media
- *Rider Insider* eBlasts

Community Engagement

- Partner Outreach
- Employee Survey
- 'Best of MTS' Stories
- Earned Media

Microsite





What Success Looks Like

How MTS Serves Communities in 2021

Supporting local businesses with its innovative Eat, Shop, Play recovery support program.

Expanding convenience and service with the launch of the UC San Diego Blue Line Extension and bus feeder routes.

Championing rider savings with a next-generation fare system called PRONTO, which is easy-to-use and protects riders from overpaying based on how often they ride.

Maintaining reliable operations by continuing to be a financial leader among its peers, keeping rider costs well below the national average and the system accessible to all riders.

Reducing greenhouse gas emissions by 97,000 metric tons, or the equivalent of 403 million fewer car miles driven by the average passenger vehicle, and pushing forward with the procurement of zero-emission buses.

Ensuring a safe, clean ride with continued investment in COVID-safe disinfecting measures and distancing protocols.

Reinforcing the commitment to equity and environmental justice with an evolution of safety and security policies as well as a better understanding of the impact transit has on the communities it serves.

Timing

- **Business recruitment: through 2/19**
- **Training: 2/15 – 2/26**
- **Pilot program launch: 3/1**
- **Pilot to run: 3/1 – 5/31**

QUESTIONS

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DRAFT

Agenda

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

9:00 a.m.

Meeting will be held via webinar

To request an agenda in an alternative format or to request accommodations to facilitate meeting participation, please call the Clerk of the Board at least two working days prior to the meeting. Meeting webinar/teleconference instructions can be accessed at the following link: https://www.sdmts.com/about-mts-meetings-and-agendas/board-meetings

		ACTION RECOMMENDED
1.	Roll Call	
2.	Approval of Minutes - January 21, 2021	Approve
3.	Public Comments - Limited to five speakers with three minutes per speaker. Others will be heard after Board Discussion items. If you have a report to present, please give your copies to the Clerk of the Board.	

Please SILENCE electronics
during the meeting

CONSENT ITEMS

6. Mid-Coast Corridor Transit Project – Projected Staffing — Approve
Action would approve an additional 15 Security and Information Technology (IT) positions to support the Mid-Coast Corridor Trolley (Mid-Coast) extension.

7. Excess Liability and Workers' Compensation Insurance Renewals — Approve

8. Zero-Emission Bus (ZEB) Procurement Project: 60-Foot Low-Floor Electric Buses – Issuance of Purchase Order to New Flyer of America, Inc. (New Flyer) — Approve
Action would authorize the Chief Executive Officer (CEO) to issue a Purchase Order to New Flyer for the purchase of twelve (12) 60-foot low-floor electric battery-powered buses in the amount of $18,558,245.40.

9. On-Call Construction Management and Engineering/Inspection Services – Assignment Increase — Approve
Action would authorize the Chief Executive Officer (CEO) to execute Amendment No. 2 to MTS Doc. No. G2023.0-17 with the San Diego Association of Governments (SANDAG) in the amount of $1,000,000. The new total value of the contract shall not exceed $5,000,000.

10. Printed Circuit Boards (PCBs) and Electronic Components – Contract Amendments — Approve
Action would: 1) Ratify Amendment No. 1 to MTS Doc. No. L1476.0-19 with Siemens Mobility Inc., in the amount of $90,000; and 2) Authorize the Chief Executive Officer (CEO) to approve Amendment No. 2 to MTS Doc. No. L1476.0-19 with Siemens Mobility Inc., for PCBs and Electronic Components, for a total of $350,000.

11. Provision of Hewlett Packard Enterprise (HPE) Nimble HF20 Array Equipment and Support to Replace Regional Transit Management System (RTMS) 3PAR Storage Array (3PAR) – Purchase Order — Approve
Action would authorize the Chief Executive Officer (CEO) to execute a Purchase Order to Nth Generation Computing Inc. for the provision of HPE Nimble HF20 Array equipment and support to replace the RTMS 3PAR in the amount of $106,834.56.

12. On-Call Electrical Repair Services – Contract Amendment — Approve
Action would: 1) Ratify MTS Doc No. PWG253.0-18 (Attachment A) with ACM Lighting Services (ACM), a Disadvantaged Business Enterprise (DBE), for on-call electrical repair services for a period of one base year and two optional one-year extensions in the amount of $22,130.00 for the base year only; 2) Ratify Amendment No. 1-3 to MTS Doc No. PWG253.0-18 (Attachment B-D) with ACM to add additional funds for on-call electrical repair services in the amount of $75,743.20; and 3)Authorize the Chief Executive Officer (CEO) to execute Amendment No. 4 to MTS Doc No. PWG253.0-18 (in substantially the same format as Attachment E), with ACM to add locations and funds for on-call electrical repair services in the amount of $25,568.00, for a new contract total of $123,441.20.

13. Design Services for the Fashion Valley Elevator Project – Work Order Amendment — Approve
Action would: 1) Ratify Work Order Amendment Nos. 1-4 under MTS Doc No. G1949.0-17 with Jacobs Engineering Group, Inc. (Jacobs) totaling $99,945.60, for additional design services; and 2) Authorize the Chief Executive Officer (CEO) to execute Work Order Amendment No. 5 WOA1949-AE-15.05 under MTS Doc. No. G1949.0-17 with Jacobs in the amount of $20,068.12 for additional Design Support During Construction (DSDC) services for the Project.

14. America Plaza Pedestrian Enhancements Project – Award Work Order Contract — Approve
Action would authorize the Chief Executive Officer (CEO) to execute Work Order WOA1951-AE-63 to MTS Doc. No. G1951.0-17 with Mott MacDonald in the amount of $749,706.49 for design services for the America Plaza Pedestrian Enhancements Project

15. Investment Report – Quarter Ending December 31, 2020 — Informational

CLOSED SESSION

24.

NOTICED PUBLIC HEARINGS

25. Temporary COVID-19 Service Adjustments (Denis Desmond) — Approve

DISCUSSION ITEMS

30. San Diego Transit Corporation (SDTC) Pension Investment Status (Jeremy Miller, Representative from RVK and Larry Marinesi) — Informational

31. San Diego Transit Corporation (SDTC) Employee Retirement Plan's Actuarial Valuation as of July 1, 2020 (Anne Harper and Alice Alsberghe of Cheiron, Inc. and Larry Marinesi) — Adopt
Action would receive the SDTC Employee Retirement Plan's (Plan) actuarial valuation as of July 1, 2020, and adopt the pension contribution amount of $17,585,592 for fiscal year 2022.

REPORT ITEMS

45. APTA Security Peer Review Report — Informational

46. Free Transfers Discussion — Informational

47. Operations Budget Status Report for December 2020 (Gordon Meyer) — Informational

OTHER ITEMS

60. Chair Report — Informational

61. Chief Executive Officer's Report — Informational

62. Board Member Communications — Informational

63. Additional Public Comments Not on the Agenda
If the limit of 5 speakers is exceeded under No. 3 (Public Comments) on this agenda, additional speakers will be taken at this time. If you have a report to present, please furnish a copy to the Clerk of the Board. Subjects of previous hearings or agenda items may not again be addressed under Public Comments.

64. Next Meeting Date: March 11, 2021.

65. Adjournment

Metropolitan Transit System

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Agenda Item No. 6

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

MID-COAST CORRIDOR TRANSIT PROJECT – PROJECTED STAFFING

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors approve an additional 15 Security and Information Technology (IT) positions to support the Mid-Coast Corridor Trolley (Mid-Coast) extension.

Budget Impact

The Mid-Coast Trolley Project and subsequent operational costs are fully funded by TransNet/SANDAG through March 31, 2048, provided operating funds remain available in TransNet Extension Ordinance operating accounts and there will be no impact to the MTS Operating Budget.

DISCUSSION:

The Mid-Coast Trolley Project is an 11-mile extension of the UC San Diego Blue Line, starting from the Old Town Transit Center and running north to the UTC area, with nine new stations in between. Heavy civil construction for the Mid-Coast Trolley Project started in the fall of 2016 and the extension is scheduled to open to the public in November 2021.

The Mid-Coast Trolley Project will greatly expand San Diego Trolley, Inc. (SDTI) operations and will require the hiring of additional staff. In December 2018, the Board approved the hiring of approximately 85 additional Trolley positions. In January 2021, the Board approved 28 contracted Security positions as part of the Security contract extension. The pending additional position approvals include 13 internal Security positions and two Informational Technology positions. Details of the additional positions and forecasted start dates are included as Attachment A.

Once approved, MTS staff will start recruiting and staffing the remaining positions for the opening of the Mid-Coast extension.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachment: A. Mid-Coast Positions Table

Trolley (1)			Security			Information Technology	
		Start Date			Start Date		
Transportation			Internal Positions			Internal Positions	
Controllers	4.0	First Day of Service	Code Compliance Inspectors	9.0	Early 2021	Network Administrator	1.0
Line Supervisors	3.0	First Day of Service	CCI Supervisors (Field Sergeant)	3.0	Early 2021	System Administrator / Help Desk	1.0
Training Supervisor	1.0	1/4/2021	Training Manager	1.0		**Total IT**	**2.0**
Train Operators	28.0	4/12/2021	**Total Internal Security**	**13.0**			
Total Transportation	**36.0**						
LRV Maintenance			Contracted Positions (2)				
Training Supervisor	1.0	Hired	Armed Security	14.0	July 2021		
LRV Supervisors	3.0	Hired	Unarmed Security	12.0	July 2021		
LRV Mechanics	16.0	Hired	Armed Supervisors (Sergeants)	2.0	July 2021		
Total LRV	**20.0**		**Total Contracted Security**	**28.0**			
MOW							
Wayside Supervisor	1.0	Hired					
Assistant Training Supervisor	1.0	Hired					
Wayside Maintainers	6.0	Hired					
Track Supervisor	1.0	12/1/2020					
Track Maintainers	3.0	12/1/2020					
Total MOW	**12.0**						
Facilities							
FT Supervisor	1.0	8/1/2021					
Service Person	12.0	8/1/2021					
Total Transportation	**13.0**						
Revenue							
Revenue Maintainers	4.0	6/1/2020					
Total Revenue	**4.0**						
Total	***85.0***		***Total***	***41.0***		***Total***	***2.0***

(1) Trolley staff was approved by the Board in December 2018 (Agenda Item 10)

(2) Contracted security positions were included in the contract extension with Allied Universal in January 2021 (Agenda Item 16)

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Agenda Item No. 7

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

EXCESS LIABILITY AND WORKERS' COMPENSATION INSURANCE RENEWALS

AGENDA ITEM & ATTACHMENT WILL BE PROVIDED WITH BOARD MATERIALS

Metropolitan Transit System

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Agenda Item No. 8

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

ZERO-EMISSION BUS (ZEB) PROCUREMENT PROJECT: 60-FOOT LOW-FLOOR ELECTRIC BUSES – ISSUANCE OF PURCHASE ORDER TO NEW FLYER OF AMERICA, INC. (NEW FLYER)

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to issue a Purchase Order to New Flyer for the purchase of twelve (12) 60-foot low-floor electric battery-powered buses in the amount of $18,558,245.40.

Budget Impact

The total budget for this project shall not exceed $18,558,245.40 (including tools, training and sales tax). This project is funded by Capital Improvement Project (CIP) 1009113201 – Iris Rapid ZEB Bus Procurement and 1001105501 – ZEB Pilot Program. Costs will be paid by Transit and Intercity Rail Capital Program (TIRCP), Low Carbon Transit Operations Program (LCTOP) and Transportation Development Act (TDA) funding.

New Flyer Electric Buses	Unit Price (per bus)	CA Sales Tax adjusted from 7.75% to 3.8125% (ZEB Partial Sales Tax Exemption)	Total
	$1,365,467.00	$52,058.00	$1,417,525.00
		ADA (non-taxable)	$ 41,532.00
		Delivery (non-taxable)	$ 21,250.00
		Subtotal (Base Bus Price)	**$1,480,307.00**
		Training (non-taxable)	$ 66,213.45
		Total (per bus)	**$1,546,520.45**
		Total (Not-to-exceed for 12 buses)	**$18,558,245.40**

DISCUSSION:

In continued efforts to reduce carbon emissions in San Diego, and the award of a TIRCP grant, MTS will purchase twelve (12) 60-foot articulated battery electric buses to service a Rapid route connecting passengers from the Otay border to Trolley service in Imperial Beach (Iris Transit Center). This electric bus purchase will be supported by the first scalable/modular overhead charging infrastructure built at MTS's South Bay Division.

The ZEBs will be utilized on a designated Rapid route from the Otay border to the Iris Transit Center. This project is considered the beginning of MTS's ZEB fleet transition that will be the first step in understanding the infrastructure technology and build-out. Staff will also analyze characteristics such as route profiles, passenger loads, operator performance, and battery capacity with this bus type. In order to run the buses, overhead depot chargers will be installed to primarily charge buses overnight. The Phase I design is currently underway for the infrastructure.

Today's proposed action would purchase twelve (12) 60-foot articulated ZEB buses from New Flyer from the California State Bus Contract. The buses would supplement a new bus service, thus increasing South Bay's total bus count. The vehicles are expected to be delivered in mid-2022.

MTS proposes to use a government purchasing schedule established by the State of California Department of General Services (California DGS) to purchase the New Flyer ZEB buses. FTA Circular 4220.1F, Chapter V, Section 4, encourages federal grant recipients to use state and local government purchasing schedules or contracts for procurements of property and services. The California DGS schedule includes electric battery-powered buses that meet MTS specifications.

The State of California DGS statewide contract was awarded through a formal competitive Request for Proposal (RFP) process (ref: RFP #0000014840). It was developed for the use of public/governmental agencies to reap the best pricing benefits, based on the types and number of vehicles and complies with all federal requirements and regulations.

The proposed New Flyer buses will have the newest onboard video surveillance systems preinstalled, enhanced wheelchair restraint systems with forward-facing safety barriers for improved safety, electric air conditioning, engine coolant systems, and overhead charging rail package. The vehicles are expected to have a maximum range of up to 150 miles per charge. Range varies considerably based on operating profiles including: grades, climate conditions, passenger loads, route structure and operators performance.

The buses are equipped with 611 KW of stored energy and will be charged through overhead depot chargers at South Bay operating facilities. Buses will also be equipped with plug in charging options to allow for remote charging at other MTS facilities, if necessary.

Therefore, staff is requesting that the MTS Board of Directors authorize the CEO to issue a Purchase Order to New Flyer for the purchase of twelve (12) 60-foot low-floor electric battery-powered buses in the amount of $18,558,245.40.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

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Agenda Item No. 9

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

ON-CALL CONSTRUCTION MANAGEMENT AND ENGINEERING/INSPECTION SERVICES – ASSIGNMENT INCREASE

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute Amendment No. 2 to MTS Doc. No. G2023.0-17 (in substantially the same format as Attachment A) with the San Diego Association of Governments (SANDAG) in the amount of $1,000,000. The new total value of the contract shall not exceed $5,000,000.

Budget Impact

The total budget for this project shall not exceed $5,000,000. Funding and budget allocations will be controlled and monitored per work order issued under each Master Agreement.

DISCUSSION:

To support on-going construction of MTS capital infrastructure projects, MTS staff requires Construction Management (CM) services to provide onsite owner representation in construction management and inspection. MTS and SANDAG will occasionally coordinate procurements for services that may be of need to each agency, which is the case for on-call CM services.

In early 2016, SANDAG completed a procurement process and entered into agreements with seven (7) CM firms to provide on-call CM services. The solicitation and award process used by SANDAG for these services is compliant with MTS Policy No. 52, “Procurement of Goods and Services”, and includes language permitting assignment of a portion of the contracts to MTS.

On June 7, 2017, SANDAG assigned $3,000,000 in collective capacity for its On-Call CM services contracts to MTS. The list of qualified firms is as follows:

- AECOM Technical
- TRC Corporation
- CH2M Hill, Inc.
- DHS Consulting, Inc.
- EPC Consultants, Inc.
- PGH Wong Engineering
- Simon Wong Engineering

Following the assignment of On-Call CM capacity, the CEO executed Master Agreements directly with each prime consultant firm, which will allow MTS to issue work orders on a project or task basis to each firm. Individual work orders will include such items as a statement of work, period of performance, pricing, deliverable(s), schedule, DBE considerations, and any other essential commitments and provisions that support MTS operations and future CM needs.

On November 14, 2019, the Board approved Amendment No. 1 in the amount of $1,000,000 for additional CM capacity for various projects requiring CM assistance that year. Today's action increases the assignment of capacity from SANDAG by an additional $1,000,000 to a new assignment total of $5,000,000. Each year, during the budgeting process, MTS assesses how much funding will be needed for CM services. The individual projects/work orders will be processed according to the signature authority set forth in Board Policy No. 41, "Signature Authority" (e.g. work orders under $100,000 will be approved by the CEO; work orders over $100,000 will require Board approval).

Therefore, staff recommends the Board of Directors authorize the CEO to execute Amendment No. 2 to MTS Doc. No. G2023.0-17 with SANDAG in the amount of $1,000,000. The new total value of the contract shall not exceed $5,000,000.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachment: A. Amendment No. 2 to MTS Doc. No. G2023.0-17

AMENDMENT NO. 2 (S656176) TO THE PARTIAL ASSIGNMENT OF THE SAN DIEGO ASSOCIATION OF GOVERNMENTS' SOLICITATION CAPACITY FOR ON-CALL PROFESSIONAL AND TECHNICAL CONSTRUCTION MANAGEMENT AND ENGINEERING SERVICES TO THE METROPOLITAN TRANSIT SYSTEM (MTS)

RFQ NO. 5004361

THIS AMENDMENT NO. 2 to the Partial Assignment by and between the San Diego Association of Governments, hereinafter ("Assignor"), and the Metropolitan Transit System (MTS), hereinafter ("Assignee") is entered into for the following reasons:

A. Under the original Partial Assignment dated June 7, 2017, SANDAG partially assigned its solicitation capacity for On-Call Professional and Technical Construction Management and Engineering Services (the "Project") to MTS.

B. Under Amendment 1 to the original Partial Assignment dated December 23, 2019, SANDAG partially assigned additional solicitation capacity for the Project to MTS.

C. Since that time, it has been determined that Assignor needs less capacity and Assignee needs more capacity to carry out the Project.

D. This Amendment No. 2 is to increase the portion of Assignor's capacity allotted to Assignee in its solicitation for the Project by $1,000,000.

NOW, THEREFORE, it is agreed as follows:

1. Section 1 of the Partial Assignment shall be amended to instead read as follows: Assignor hereby assigns, transfers, and sets over unto Assignee $5,000,000 as a portion of Assignor's capacity in its solicitation for the Project.

2. All other provisions of said Partial Assignment not amended herein, shall remain in full force and effect. Nothing in this Amendment No. 2 is intended to relieve the parties of their obligations to perform as required by the partial assignment unless expressly stated herein.

3. This Amendment No. 2 may be executed and delivered by facsimile signature and a facsimile signature shall be treated as an original. This Amendment No. 2 may be executed in counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same Amendment.

The persons below assert that they are authorized to execute this Amendment which shall be effective as of the last date a party to the Amendment provides an electronic signature below.

Assignor:	Assignee:
San Diego Association of Governments	MTS
John Haggerty **Director of Engineering and Construction**	**Sharon Cooney** **Chief Executive Officer**
Approved as to form:	Approved as to form:
Office of the General Counsel	**Office of the General Counsel**

Metropolitan Transit System

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Agenda Item No. 10

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

PRINTED CIRCUIT BOARDS (PCBs) AND ELECTRONIC COMPONENTS – CONTRACT AMENDMENTS

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors:

1) Ratify Amendment No. 1 to MTS Doc. No. L1476.0-19 (Attachment A) with Siemens Mobility Inc., in the amount of $90,000; and

2) Authorize the Chief Executive Officer (CEO) to approve Amendment No. 2 to MTS Doc. No. L1476.0-19 (in substantially the same format as Attachment B) with Siemens Mobility Inc., for PCBs and Electronic Components, for a total of $350,000.

Budget Impact

The total budget for this project shall not exceed $1,597,285.97. This project is funded by the Light Rail Vehicle (LRV) Maintenance budget 350016-545100.

DISCUSSION:

On June 13, 2019, the MTS Board approved MTS Doc. No. L1476.0-19 with Siemens Mobility Inc., for $1,157,285.97 for the purchase and repair of PCBs, propulsion and auxiliary power related electronics for Siemens' LRV models: SD100, S70 and S70us. The provision options were either new depending on availability, core exchange or repair/return. Services were for a 2-year period from July 1, 2019 to June 30, 2021.

These critical components determine the acceleration/de-acceleration rates and speed of the vehicle, and as such are considered safety critical. This was issued as a Sole Source to Siemens as the commissioning and subsequent safety certification of the vehicles was performed with these components on board, and any deviation from the

original design would require extensive and expensive re-testing and safety certification of the system and approval by California Public Utilities Commission. Substitutions increase risk of damage to equipment, injury to employees or passengers and potential loss of life. In addition, MTS has neither the qualified personnel nor the facilities to make repairs to these highly technical and complicated electronic components.

The original contract parts list adopted a consumption forecast that at the time, reflected historical usage across the parts. With the ageing of some vehicles and an increase in failure across specific boards, this resulted in an increased volume of product that require repair. On December 18, 2020, MTS issued Amendment No. 1 to add $90,000 to L1476.0-19 to cover pending repairs to ensure there would be no delay to these critical components.

MTS has conducted a further forecast for upcoming usage and staff would now like to add $350,000 under Amendment No. 2 to cover services until the end of the current contract on June 30, 2021 (Attachment B). This brings the new not-to-exceed amount from $1,247,285.97 to $1,597,285.97.

Therefore, staff recommends that the MTS Board of Directors:

1) Ratify Amendment No. 1 to MTS Doc. No. L1476.0-19 (Attachment A) with Siemens Mobility Inc., in the amount of $90,000; and

2) Authorize the Chief Executive Officer (CEO) to approve Amendment No. 2 to MTS Doc. No. L1476.0-19 (in substantially the same format as Attachment B) with Siemens Mobility Inc., for PCBs and Electronic Components, for a total of $350,000.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachments: A. Amendment No. 1 to MTS Doc No. L1476.0-19
B. Draft Amendment No. 2 to MTS Doc No. L1476.0-19
C. Projected Services

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Tel 619.231.1466 Fax 619.234.3407

ATTACHMENT A.1

Amendment 1

December 18, 2020 MTS Doc No. L1476.1-19

LRV PRINTED CIRCUIT BOARDS (PCBs) PURCHASE, REPAIR AND EXCHANGE (UTEX)

Reiner Martin
Siemens Mobility Inc.
7464 French Road
Sacramento, CA 95828-4600

This shall serve as Amendment No. 1 to the original agreement L1476.0-19 as further described below.

SCOPE

Contractor supplies and repairs Propulsion and Auxiliary Power Related Electronics and PCBs for Siemens' LRV models: SD-100, S70 and S70us.

The provision options are either new (depending on availability), UTEX core exchange with 48 hour delivery to MTS, or repair/return.

If a returned component is found to be unrepairable, a new or refurbished replacement is made available for purchase.

There are no changes to the scope of work under this amendment.

SCHEDULE

There are no changes to the schedule provision. The termination date remains 6/30/2021.

PAYMENT

Due to a higher than anticipated repairs and replacements, MTS is increasing the contract by $90,000 to cover estimated immediate pending work.

The not-to-exceed amount is now $1,247,285.97 ($1,157,285.97 + $90,000). This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy marked *original* to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney
Chief Executive Officer

Agreed:

Reiner Martin,Director Rail Svc.
Siemens Mobility Inc.

Date: 12/18/2020

Cathie Steele, Director Finance
Siemens Mobility Inc.

Date: 12/18/2020

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Tel 619.231.1466 Fax 619.234.3407

ATTACHMENT A.2

Amendment 2

February 11, 2021 MTS Doc No. L1476.2-19

LRV PRINTED CIRCUIT BOARDS (PCBs) PURCHASE, REPAIR AND EXCHANGE (UTEX)

Reiner Martin
Siemens Mobility Inc.
7464 French Road
Sacramento, CA 95828-4600

This shall serve as Amendment No. 2 to the original agreement L1476.0-19 as further described below.

SCOPE

Contractor supplies and repairs Propulsion and Auxiliary Power Related Electronics and PCBs for Siemens' LRV models: SD-100, S70 and S70us.

The provision options are either new (depending on availability), UTEX core exchange with 48 hour delivery to MTS, or repair/return.

If a returned component is found to be unrepairable, a new or refurbished replacement is made available for purchase.

There are no changes to the scope of work under this amendment.

SCHEDULE

There are no changes to the schedule provision. The termination date remains 6/30/2021.

PAYMENT

Due to a higher than anticipated repairs and replacements, MTS is increasing the contract by $350,000 to cover estimated immediate pending work.

The not-to-exceed amount is now $1,597,285.97 ($1,247,285.97 + $350,000). This amount shall not be exceeded without prior written approval from MTS.

Please sign and return the copy marked *original* to the Contract Specialist at MTS. All other terms and conditions shall remain the same and in effect. Retain the other copies for your records.

Sincerely,

Sharon Cooney
Chief Executive Officer

Agreed:

_____

Siemens Mobility Inc.

Date: _____

_____

Siemens Mobility Inc.

Date: _____

ATTACHMENT C
FORECASTED REPAIR, EXCHANGE THROUGH 6/30/21

Open PO	Open PO Amount	12 Month Consumption	Estimate Exchange/ Repair QTY (Feb~Jun/2021)	Additional Repair PO may be issued:	Repair PO Highest Net $ (**2018~2020**)	Repair **Open** PO Highest Net$	Possible additional PO Amount$	Material
4	$42,720.49	15	7	3	$39,800.00	$13,676.00	$119,400.00	APS AUX PWR Supply - SD8 (UTEX)
5	$158,027.04	13	6	1	$26,600.00	$5,882.04	$26,600.00	Compact Invert Unit Kernel SD8/9 (UTEX)
0	$0.00	5	3	0	$76,976.00	$0.00	$0.00	Compact Inverter Unit KERNEL SD7 (UTEX)
1	$3,800.00	5	3	2	$3,800.00	$3,800.00	$7,600.00	PCB C055 Output Contactor Drv SD7 (UTEX)
5	$27,935.00	1	1	0	$5,700.00	$2,603.00	$0.00	PCB C055 Multifunction I/O SD8/9 (UTEX)
0	$0.00	1	1	0	$5,423.00	$0.00	$0.00	PCB C035 C043 Chopper Ctrl SD100 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	PCB C067 In/Output Digtal - SD100 (UTEX)
0	$0.00	1	1	0	$4,107.00	$0.00	$0.00	C075 Analog Interface - SD100 (UTEX)
6	$32,232.54	1	1	0	$5,372.09	$5,372.09	$0.00	PCB C097 C115 Pwr Convtr - SD100 (UTEX)
0	$0.00	1	1	0	$0.00	$0.00	$0.00	PCB C133 Pwr Sup Convtr - SD100 (UTEX)
0	$0.00	0	0	0	$14,143.00	$0.00	$0.00	PCB C157 Pwr Start-Up - SD100 (UTEX)
1	$3,831.00	6	3	2	$3,831.00	$3,831.00	$7,662.00	PCB G003 Outp Pulse AMP GTO SD100 (UTEX)
0	$0.00	2	1	1	$3,831.00	$0.00	$3,831.00	PCB G011 Output Pulse AMP SD100 (UTEX)
2	$8,222.00	2	1	0	$0.00	$4,111.00	$0.00	PCB G019 Output Cont Dr SD100 (UTEX)
2	$8,222.00	4	2	0	$4,111.00	$4,111.00	$0.00	G031 Output Contact Drive SD100 (UTEX)
0	$0.00	0	0	0	$5,423.00	$0.00	$0.00	PCB G055 Inp Conv Dig Sgnl SD100 (UTEX)
0	$0.00	0	0	0	$5,423.00	$0.00	$0.00	PCB G063 ICD Signal GNLS SD100 (UTEX)
0	$0.00	4	2	2	$5,423.00	$0.00	$10,846.00	PCB G071 IC Digital Signal SD100 (UTEX)
0	$0.00	1	1	0	$3,758.00	$0.00	$0.00	PCB G087 In/Output Analog SD100 (UTEX)
0	$0.00	0	0	0	$4,852.00	$0.00	$0.00	PCB G103 Input Temp Convert SD100 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	PCB G111 Output Measure AMP SD100 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	PCB G131 Ref Value Convertr SD100 (UTEX)
0	$0.00	0	0	0	$6,794.00	$0.00	$0.00	PCB C019 CPU Module (486) SD7 (UTEX)
4	$17,794.21	1	1	0	$4,702.21	$4,702.21	$0.00	PCB C031 MVB32 VCU SD7 (UTEX)
2	$11,400.00	0	0	0	$5,700.00	$5,700.00	$0.00	PCB C039 Multi In/Output VCU SD7 (UTEX)
0	$0.00	3	2	2	$0.00	$0.00	$0.00	PCB C047/SD7,G031/SD8 Bin In Conv (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	PCB G031 RS485 SD7 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	PCB G039 Converter SD7/SD8 (UTEX)
0	$0.00	1	1	0	$0.00	$0.00	$0.00	PCB G047 5V±15V VCU SD7 (UTEX)
2	$16,698.62	0	0	0	$0.00	$0.00	$0.00	Reference Value Converter SD7/8/9 (UTEX)
7	$35,656.00	3	2	0	$5,467.00	$5,467.00	$0.00	ICU (A90)(A91) Invt Cntl Unit SD7 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	PCB G063 Adapter Converter - SD8 (UTEX)
1	$3,591.00	3	2	1	$10,276.11	$3,591.00	$10,276.11	PCB C019 Central Processor - SD8 (UTEX)
4	$16,816.00	2	1	0	$3,983.00	$3,983.00	$0.00	PCB G039 Binary Opt 24-36V/2A SD8/9 UTEX

Open PO	Open PO Amount	12 Month Consumption	Estimate Exchange/ Repair QTY (Feb~Jun/2021)	Additional Repair PO may be issued:	Repair PO Highest Net $ (**2018~2020**)	Repair **Open** PO Highest Net$	Possible additional PO Amount$	Material
7	$30,198.00	15	7	0	$9,360.00	$4,596.00	$0.00	Control Unit Inverter ICU - SD8 (UTEX)
3	$18,312.00	1	1	0	$6,104.00	$6,104.00	$0.00	SIBCOS M2000-30-9 APS - SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	SIBCOS M2500-2-9 SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Over Voltage Protection SD8 (UTEX)
1	$73,181.00	0	0	0	$0.00	$0.00	$0.00	Battery Charge Module APS - SD8/9 (UTEX)
6	$20,202.00	7	3	0	$0.00	$3,367.00	$0.00	PCB C003 Clock SD100 (UTEX)
2	$7,254.00	1	1	0	$3,627.00	$3,627.00	$0.00	PCB C019 CPU SD100 (UTEX)
2	$5,970.00	5	3	1	$2,985.00	$2,985.00	$2,985.00	PCB C027,MC Memory SD100 (UTEX)
0	$0.00	0	0	0	$3,011.00	$0.00	$0.00	PCB C051 C059 Digital Iface SD100 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Voltage Transducer SD7 (UTEX)
3	$9,825.00	0	0	0	$3,275.00	$3,275.00	$0.00	G047 PCS 24V-110V/5V/±15V 50W SD8 (UTEX)
0	$0.00	2	1	1	$0.00	$0.00	$0.00	C039 EM1 Carrier W ACAN SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Voltage Transducer QPSW SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	DC/DC Inverter 120KVA SD8 (UTEX)
1	$59,217.00	0	0	0	$0.00	$0.00	$0.00	Pulse Wid Mod Invert 120KVA SD8/9 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Line Reactor 3.3 MH/370A Prop SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Line Reactor 3.3 MH/370A Prop SD7 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	QPSW4200-03 4200V;50MA APS SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	QPSW-Transducer 1000/600/400V SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	6K5-DRV-SEK SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Control Unit M9000 APS SD8 (UTEX)
0	$0.00	5	3	3	$3,609.00	$0.00	$10,827.00	Radial Fan APS SD8 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Dead Battery Start SD8 (UTEX)
1	$5,558.00	1	1	0	$5,558.00	$5,558.00	$0.00	PCB G079 Input Train Cntr SD100 (UTEX)
3	$4,944.00	5	3	0	$2,944.00	$2,944.00	$0.00	PCB C083 Cntr Sys Monitor SD100 (UTEX)
1	$1,000.00	14	6	5	$22,929.00	$1,000.00	$114,645.00	PCB Board GTO Firing SD100 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	CETAC Power Supply GTO SD100 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	Combination Choke L1/L2 SD100 (UTEX)
0	$0.00	0	0	0	$0.00	$0.00	$0.00	DC Link Capacitor C1-C6 SD100 (UTEX)
0	$0.00	3	2	2	$2,251.00	$0.00	$4,502.00	Radial Blower Propulsion SD7 SD8 (UTEX)
4	$23,936.00	7	3	0	$9,278.00	$5,984.00	$0.00	PCB C003 TCN Gateway VCU SD7 (UTEX)

TOTAL $319,174.11

OVERALL BOARD APPROVAL INCLUDING DELIVERY COSTS $350,000.00

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

Agenda Item No. 11

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

PROVISION OF HEWLETT PACKARD ENTERPRISE (HPE) NIMBLE HF20 ARRAY EQUIPMENT AND SUPPORT TO REPLACE REGIONAL TRANSIT MANAGEMENT SYSTEM (RTMS) 3PAR STORAGE ARRAY (3PAR) – PURCHASE ORDER

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute a Purchase Order to Nth Generation Computing Inc. for the provision of HPE Nimble HF20 Array equipment and support to replace the RTMS 3PAR in the amount of $106,834.56.

Budget Impact

The total budget for this project shall not exceed $106,834.56 (inclusive of CA 7.75% Sales Tax). The project will be funded by the Information Technology (IT) Operating Budget account 661010-571250 for ongoing maintenance support and Capital Improvement Program (CIP) 1007108601 for the one-time purchase of the hardware, initial install and support of initial set-up.

Description	Subtotal
Hardware, Initial Install and Set-up, Shipping & Sales Tax	$85,943.56
Maintenance Support	$20,891.00
Grand Total:	**$106,834.56**

DISCUSSION:

MTS utilizes HPE 3PAR 7400 enterprise as its main production storage platform. It provides the underlying storage for the entire virtual environment, multiple database servers and file servers at different locations. The RTMS 3PAR is reaching the end of its

service life and needs to be replaced with another storage array. Similar Nimble arrays have replaced the 3PAR at the Imperial Avenue Division (IAD) and Operating Control Center (OCC) and will also replace the RTMS array for easier management of data.

On December 18, 2020, MTS issued an Invitation for Bid (IFB) to procure HPE Nimble HF20 Array to replace the existing RTMS 3PAR storage array. A single bid was received on the due date of January 15, 2021 from Nth Generation Computing Inc.

After reviewing the single bid submission, Nth Generation was found to be a responsive and responsible bidder. The submitted pricing was determined to be a fair and reasonable price in comparison to the Independent Cost Estimate (ICE), Manufacturer Bill of Material (BOM) price estimate and other authorized HPE providers online pricing.

Therefore, staff recommends that the MTS Board authorize the CEO to execute a Purchase Order to Nth Generation Computing Inc. for provision of HPE Nimble HF20 Array equipment and support to replace RTMS 3PAR storage array in the amount of $106,834.56.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachment: A. Nth Generation Computing Inc. Bid Price Form

ATTACHMENT 1
MTS BID PRICING FORM
REGIONAL TRANSIT MANAGEMENT SYSTEM (RTMS) 3PAR STORAGE ARRAY REPLACEMENT (MTS DOC. NO. G2440.0-21)

BID DUE DATE: 1/15/2021 **TIME:** 2:00 P.M., Prevailing Local Time

DEL. LEAD TIME (ARO): 17-20 days _____(within 30 days

Item#	Product Part Number	Product Description	QTY	Taxable Yes (Y) or No (N)	Unit Price (USD)	Extended List Price (USD)
1	Q8H72A	HPE Nimble Storage HF20 Adaptive Dual Controller 10GBASE-T 2-port CTO Base Array	1	Y	$ 15,688.00	$ 15,688.00
2	Q8B69B	HPE Nimble Storage HF20/20C Adaptive Array 42TB (21x2TB) FIO HDD Bundle	1	Y	$ 14,079.00	$ 14,079.00
3	Q8B90B	HPE Nimble Storage 2x16Gb Fibre Channel 2-port FIO Adapter Kit	1	Y	$ 5,632.00	$ 5,632.00
4	Q8G27B	HPE Nimble Storage NOS Default FIO Software	1	Y	$ 1.00	$ 1.00
5	Q8J27A	HPE Nimble Storage C13 to C14 250V 10Amp 1.8m Universal FIO Power Cord	2	Y	$ 1.00	$ 2.00
6	Q8J30A	HPE Nimble Storage HF20 Adaptive Array R2 5.76TB (6x960GB) FIO Cache Bundle	1	Y	$ 14,471.00	$ 14,471.00
7	R3P91A	HPE Nimble Storage AF/HF Array Standard Tracking	1	Y	$ 1.00	$ 1.00
8	HT6Z0A5	HPE NS 5Y 4H Parts Exchange Support (must be included as part of the Bill of Materials at no cost)	1	N	$ -	$ -
9	HT6Z0A5 ZEE	HPE NS HF20/20C Hybr 42TB HDD Bndl Supp	1	N	$ 4,650.00	$ 4,650.00
10	HT6Z0A5 ZE7	HPE NS HF20 5.76TB Cache Supp	1	N	$ 4,243.00	$ 4,243.00
11	HT6Z0A5 ZEB	HPE NS HF20 Hybrid Base Array Supp	1	N	$ 8,013.00	$ 8,013.00
12	HT6Z0A5 ZG1	HPE NS 2x16Gb FC 2p Adptr Supp	1	N	$ 3,985.00	$ 3,985.00
13	HA114A1	HPE Installation and Startup Service (must be included as part of the Bill of Materials at no cost)	1	N	$ -	$ -
14	HA114A1 5MR	HPE Nimble Array Startup SVC	1	N	$ 3,500.00	$ 3,500.00
15	H5UP3A1	HPE Network Integr and Depl Pack SVC Credits (must be included as part of the Bill of Materials at no cost)	1	N	$ -	$ -
16	H5UP3A1 003	HPE Network 50 Pack Integr and Depl SVC	2	N	$ 14,250.00	$ 28,500.00
					Subtotal:	$ 102,765.00

San Diego, California Sales Tax (7.75%) for Taxable line items only:	3865.24
Freight Charges/ Shipping FOB specified destination (No Charge):	204.32
GRAND TOTAL (Basis of Award):	106,834.56

*Please include your Product Technical/Data Sheet with your Bid Form Submission

Read attached Request for Quote (RFQ) carefully. They are a part of your proposal. Unit prices will prevail regardless of extensions submitted by the Proposer. Proposal must be firm and valid for a minimum of 120

DATE: 1/15/2021

FIRM: Nth Generation Computing, Inc.

SIGNATURE: Joyce A Russell

TYPE OR PRINT NAME: Joyce Russell

TITLE: EVP/CFO

ADDRESS: 17055 Camino San Bernardo

CITY, STATE & ZIP: San Diego, CA 92127

PHONE NUMBER: 858-451-2383 **FAX NUMBER:** 858-673-8431

E-MAIL ADDRESS: bids@nth.com

RETURN THIS FORM WITH YOUR BID, RETAIN OTHER PAGES FOR YOUR RECORDS

RETURN THIS FORM WITH YOUR BID

BID FORM

Refer to Attachment: ATT 1 Bid Form

Bidder shall submit pricing for all the work described in the Scope of Work section. In preparing a cost bid, Bidders are requested to provide a total all-inclusive cost for each year of service. Estimated quantities are for bid purposes only. The quantities do not reflect guaranteed usage by MTS and may be more or less than indicated.

Read attached General Provisions carefully. **They are a part of your bid.** Unit prices will prevail regardless of extensions submitted by the Bidder.

All bidders must complete bid forms as provided, failure to do so will deem the bid non-responsive.

Bidder accepts responsibility for accuracy and presentation of the numbers included in the cost/price form under Section 3.

Submit the bid following instructions as specified in Submission Requirements section.

F.O.B. POINT: **SDMTS-IADP.**
100 16th Street,
San Diego, California 92101,

Bidder to check one:

All parts shall be delivered within thirty (30) calendar days after Purchase Order issuance.

X *Yes, I can meet the 30 calendar day delivery time *dependent upon MFG direct fulfillment availability.

____No, I cannot meet the 30 calendar day delivery time

DATE:	01/15/2021
FIRM:	Nth Generation Computing, Inc.
SIGNATURE:	Joyce F Russell
TYPE OR PRINT NAME:	Joyce Russell
TITLE:	EVP/CFO
ADDRESS:	17055 Camino San Bernardo
CITY, STATE & ZIP:	San Diego, CA 92127
PHONE NUMBER:	858-451-2383
FAX NUMBER:	858-673-8431
E-MAIL ADDRESS:	bids@nth.com

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

Agenda Item No. 12

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

ON-CALL ELECTRICAL REPAIR SERVICES – CONTRACT AMENDMENT

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors:

1) Ratify MTS Doc No. PWG253.0-18 (Attachment A) with ACM Lighting Services (ACM), a Disadvantaged Business Enterprise (DBE), for on-call electrical repair services for a period of one base year and two optional one-year extensions in the amount of $22,130.00 for the base year only;

2) Ratify Amendment No. 1-3 to MTS Doc No. PWG253.0-18 (Attachment B-D) with ACM to add additional funds for on-call electrical repair services in the amount of $75,743.20; and

3) Authorize the Chief Executive Officer (CEO) to execute Amendment No. 4 to MTS Doc No. PWG253.0-18 (in substantially the same format as Attachment E), with ACM to add locations and funds for on-call electrical repair services in the amount of $25,568.00, for a new contract total of $123,441.20.

Budget Impact

The total budget for this project shall not exceed $123,441.20. This project will be funded by the respective fiscal years' maintenance operating budget accounts as follows: Land Management (LM); San Diego Trolley, Inc. (SDTI); San Diego Transit Corp. (SDTC) & Bus Rapid Transit (BRT):

Program	Budget Account	Purpose	Amount	Board Approval Date
LM	791010-571210	Original Contract – Base Year 1	$ 7,505.00	CEO Approval 05/14/2018 per

				Board Policy No. 41
SDTI	380016-575170	Original Contract – Base Year 1	$ 14,625.00	CEO Approval 05/14/2018 per Board Policy No. 41
LM	791010-571210	Amendment No. 1 – Add Funds	$10,000.00	CEO Approval 02/13/2019 per Board Policy No. 41
LM	791010-571210	Amendment No. 2 Exercise Option Years 1 & 2	$18,528.52	CEO Approval 05/16/2019 per Board Policy No. 41
SDTI	380016-575170	Amendment No. 2 Exercise Option Years 1 & 2	$30,214.68	CEO Approval 05/16/2019 per Board Policy No. 41
SDTI	360016-536600	Amendment No. 3 – Add Stadium Trolley Station and Funds	$17,000.00	CEO Approval 08/07/2020 per Board Policy No. 41
SDTC	331014-545500	Amendment No. 4 – Add SDTC and BRT Locations and Funds	$568.00	Today's proposed action
BRT	846012-571140	Amendment No. 4 – Add SDTC and BRT Locations and Funds	$25,000.00	Today's proposed action
Total Amount			$123,441.20	

DISCUSSION:

MTS, LM and SDTI required the service of a contractor to perform all on-call electrical services, including minor through complex electrical repairs and/or services. Routine and emergency electrical services were performed at a variety of SDTI locations including SDTI buildings, SDTI Trolley Stations and other SDTI properties as directed by the SDTI Facilities Manager and MTS buildings managed by the MTS Land Management Project Manager. These services were needed to ensure that electrical repairs at MTS facilities and properties were responded to and repaired in a timely professional manner, so as to mitigate damage to MTS infrastructure and lessen the impact of electrical issues on both MTS employees and tenants.

On March 5, 2018, MTS issued an Invitation for Bids (IFB) for On-Call Electrical Repair Services to interested parties through a formal competitive bid process. At the time, it was believed that the lowest bid for these services would exceed, or come close to $100,000. On April 3, 2018, a total of six (6) bids were received.

Bid Summary:

Company	**Bid Amount**
ACM Lighting (Disadvantaged Business Enterprise (DBE))	$60,873.20
Berelectric	$68,005.20
Baker Electric	$77,137.20
M Brey Electric (Small Business (SB))	$80,481.20
Global Power Group	$84,956.20
Vistam (Minority Owned Business Enterprise (MBE))	$95,118.83

On May 14, 2018, per Board Policy No. 41, “Signature Authority”, the CEO approved the original contract with ACM for the on-call electrical repair services.

Since the execution of the agreement, the need to add locations and funds had amassed. Hence, Amendment Nos. 1-3 had achieved this necessity by either adding additional locations and/or funds.

Today’s proposed action, Amendment No. 4, would add one SDTC location, and all BRT station locations, and the requisite funds to the agreement.

Therefore, staff recommends that the MTS Board:

1) Ratify MTS Doc No. PWG253.0-18 (Attachment A) with ACM Lighting Services (ACM), a Disadvantaged Business Enterprise (DBE), for on-call electrical repair services for a period of one base year and two optional one-year extensions in the amount of $22,130.00 for the base year only;

2) Ratify Amendment No. 1-3 to MTS Doc No. PWG253.0-18 (Attachment B-D) with ACM to add additional funds for on-call electrical repair services in the amount of $75,743.20; and

3) Authorize the Chief Executive Officer (CEO) to execute Amendment No. 4 to MTS Doc No. PWG253.0-18 (in substantially the same format as Attachment E), with ACM to add locations and funds for on-call electrical repair services in the amount of $25,568.00, for a new contract total of $123,441.20.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachments:
A. MTS Doc. No. PWG253.0-18
B. MTS Doc. No. PWG253.1-18
C. MTS Doc. No. PWG253.2-18
D. MTS Doc. No. PWG253.3-18
E. Draft MTS Doc. No. PWG253.4-18

Metropolitan Transit System

STANDARD SERVICES AGREEMENT
FOR
ON-CALL ELECTRICAL REPAIR SERVICES

PWG253.0-18
CONTRACT NUMBER

FILE/PO NUMBER(S)

THIS AGREEMENT is entered into this 17 day of May 2018, in the State of California by and between San Diego Metropolitan Transit System ("MTS"), a California public agency, and the following, hereinafter referred to as "Contractor":

Name: ACM Lighting Services

Address 1411 S. Rimpau Avenue, Suite 202
Corona, CA 92879

Form of Business: Corporation
(Corporation, Partnership, Sole Proprietor, etc.)

Telephone: (951) 272-4881

Email Address: raul@acmlightingservices.com

Authorized person to sign contracts: Raul Morales (Name) — Estimator (Title)

The attached Standard Conditions are part of this Agreement. The Contractor agrees to furnish to MTS services and materials, as follows: On-Call Electrical Repair Services as specified in the Scope of Work (attached as Exhibit A), Bid Form (attached as Exhibit B), and in accordance with the Standard Conditions (attached as Exhibit C) and Federal Requirements (attached as Exhibit D).

The contract term is for one (1) base year, with two (2) optional one-year extensions exercisable at the sole discretion of MTS.

Payment terms shall be net 30 days from invoice date. The total cost of this contract shall not exceed $60,873.20 without the express written consent of MTS.

SAN DIEGO METROPOLITAN TRANSIT SYSTEM	CONTRACTOR AUTHORIZATION
By _____ Chief Executive Officer	Firm ACM Lighting Services
Approved as to form	By _____ Signature
By _____ Office of General Counsel	Title Estimator

AMOUNT ENCUMBERED	BUDGET ITEM	FISCAL YEAR
$60,873.20	Various	2018

By _____ Chief Financial Officer

5/15/18
Date

(91 total pages, each bearing contract number)

LMARQUIS-SA
SA-PWG253.0-18.ACM.SAUGUSTYN
05/09/2018

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466

February 8, 2019

MTS DOC No. PWG253.1-18

Mr. Raul Morales
Estimator
ACM Lighting Services
1411 S. Rimpau Ave., Ste. 202
Corona, CA 92879

Dear Mr. Morales:

Subject: *AMENDMENT 1 TO MTS DOC. NO. PWG253.0-18; ON-CALL ELECTRICAL REPAIR SERVICES*

This letter shall serve as Amendment 1 to our agreement for on-call electrical repair services, as further described below.

SCOPE OF WORK

There shall be no change to the Scope of Work.

SCHEDULE

There shall be no change to the Schedule.

PAYMENT

The total value of the base contract amount shall be increased by $10,000.00. The revised base contract amount is $32,130.00.

Sincerely,

Paul C. Jablonski
Chief Executive Officer

Accepted: Raul Morales

Raul Morales
ACM Lighting Services

Date 2/14/2019

SAUGUSTYN
PWG253.1-18.ACM LIGHTING.020919

MEMORANDUM

To: Purchase Order (PO) File and Attached to PR 10023465

From: Richard Rose (Project Manager)

Date: 1/30/19

Subject: Year 1 Budget Increase for On-Call Electric Services

The existing year 1 (6/1/18 – 5/31/19) budget for the above referenced PR for on-call electric services needs to be increased by $10,000 (from $7,505 to $17,505). This increase is necessary to cover unforeseen necessary electrical and lighting repairs primarily at the Taxi Admin building (1501 National Ave) and the Auto Auction building (5801 Fairmount Ave).

Before this $10,000 increase, PO 4500018931 for the PR will have an available remaining balance of $983.17 after payment of a pending $4,011.38 invoice for electric repairs primarily to bring the Auto Auction building up to code for the electric panel and wiring, etc. Nearly $5,000 is required to pay for the needed cost to replace inadequate and non-working exterior floodlights on the Taxi Admin building roof and the inadequate wall lights on the street side of the building. The P.O. budget increase will also cover the relatively small cost needed to replace the inadequate exterior lighting outside the leased building at 304-306 Front Street in El Cajon, as well as to do possible additional upcoming needed minor electrical repairs at other buildings through the end of May 2019.

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466

May 13, 2019

MTS DOC No. PWG253.2-18

Mr. Raul Morales
Estimator
ACM Lighting Services
1411 S. Rimpau Ave., Ste. 202
Corona, CA 92879

Dear Mr. Morales:

Subject: AMENDMENT 2 TO MTS DOC. NO. PWG253.0-18; ON-CALL ELECTRICAL REPAIR SERVICES

This letter shall serve as Amendment 2 to our agreement for on-call electrical repair services, as further described below.

SCOPE OF WORK

MTS shall exercise all Option Years 1 and 2 pursuant to the contract.

SCHEDULE

The Option Year One coverage period shall be effective June 1, 2019 through May 31, 2020 and Option Year Two coverage period shall be effective June 1, 2020 through May 31, 2021.

PAYMENT

Increase the amount of the agreement by the total for each option year and increase the Land Management (LM) contract allocation by an additional $10,000. The total value of this amendment shall be increased, as reflected below:

Option Year 1	Option Year 2	LM Allocation Increase	Total Value
$19,158.50	$19,584.70	$10,000.00	$48,743.20

Including this amendment, the total value of the contract shall not exceed $80,873.20 without prior written approval from MTS.

Sincerely,

Raul C. Jablonski
Chief Executive Officer

Accepted:

Raul Morales
ACM Lighting Services

Date: 5/20/2019

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Tel 619.231.1466 Fax 619.234.3407

August 5, 2020

MTS DOC No. PWG253.3-18

Mr. Carlos Morales
Estimator
ACM Lighting Services
1411 S. Rimpau Ave., Ste. 202
Corona, CA 92879

Dear Mr. Morales:

Subject: AMENDMENT 3 TO MTS DOC. NO. PWG253.0-18; ON-CALL ELECTRICAL REPAIR SERVICES

This letter shall serve as Amendment 3 to our agreement for on-call electrical repair services, as further described below.

SCOPE OF WORK

This amendment shall add the Stadium Station site, located at 9449 Friars Rd, San Diego, CA 92108 to the Scope of Work.

SCHEDULE

There shall be no change to the schedule as a result of this amendment.

PAYMENT

This amendment shall Increase the total value of the agreement of $80,873.20 by $17,000.00. Including this amendment, the total value of the contract shall not exceed $97,873.20 without prior written approval from MTS.

Sincerely,

Sharon Cooney

Sharon Cooney
Chief Executive Officer

Accepted:

Carlos Morales
ACM Lighting Services

Date:

Vice President

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Tel 619.231.1466 Fax 619.234.3407

February 11, 2021

MTS DOC No. PWG253.4-18

Mr. Carlos Morales
Estimator
ACM Lighting Services
1411 S. Rimpau Ave., Ste. 202
Corona, CA 92879

Dear Mr. Morales:

Subject: AMENDMENT 4 TO MTS DOC. NO. PWG253.0-18; ON-CALL ELECTRICAL REPAIR SERVICES

This letter shall serve as Amendment 4 to our agreement for on-call electrical repair services, as further described below.

SCOPE OF WORK

This amendment shall add shall add the Kearny Mesa Division (KMD) location as Table 3 for the SDTC program, and three (3) Bus Rapid Transit (BRT) station locations as Table 4 to the agreement (Attachment A, MTS Locations & Contact Information, Tables 2 & 3).

SCHEDULE

There shall be no change to the schedule as a result of this amendment.

PAYMENT

This amendment shall Increase the total value of the agreement of $97,873.20 by $25,568.00. Including this amendment, the total value of the contract shall not exceed $123,441.20 without prior written approval from MTS.

Sincerely,

Sharon Cooney
Chief Executive Officer

Accepted:

Carlos Morales
ACM Lighting Services

Date:_____

ATTACHMENT A
(MTS Locations & Contact Information)

Table 3: SDTC

	BUILDING NAME	ADDRESS	CITY	ZIP
1	KMD	4630 Ruffner St.	San Diego	92111

Contact Information
Thomas Pascarella, Facilities Supervisor - Bus
Office: 619-238-0100 Ext. 6475
Email: thomas.pascarella@sdmts.com

Table 4: BRT

#	Stop	Description	Location	BRT Route(s)
1	TC	UTC Transit Center	M-TC-Bus	201/202/204
2	10772	Gilman Dr / Myers Dr	N-W/B	201
3	10374	Gilman Dr / Myers Dr	F-E/B	202
4	99459	Executive Dr / Regents Rd	N-W/B	201
5	99461	Medical Center Dr / Health Sciences Dr	F-N/B	201
6	13092	Voigt Dr / Scripps Memorial Hospital	N-W/B	201
7	99463	Villa La Jolla Dr / Gilman Dr	F-E/B	201
8	13024	Nobel Dr / La Jolla Village Square Drwy	N-E/B	201
9	10034	Nobel Dr / Lebon Dr	N-E/B	201
10	11909	Palmilla Dr / Lebon Dr	F-S/B	201
11	12662	Regents Rd / Arriba St	F-N/B	201
12	10399	Nobel Dr / Regents Rd	F-E/B	201
13	11915	Regents Rd / Nobel Dr	F-S/B	202
14	11154	Arriba St / Regents Rd	F-W/B	202
15	99932	Lebon Dr / Palmilla Dr	F-N/B	202
16	11151	Nobel Dr / Lebon Dr	F-W/B	202
17	13058	Nobel Dr / La Jolla Village Square Drwy	F-W/B	202
18	12326	Gilman Dr / Villa La Jolla Dr	F-N/B	202
19	99200	Voigt Dr / Scripps Memorial Hospital	M-E/B	202
20	99462	Medical Center Dr / Health Sciences Dr	N-S/B	202
21	99460	Executive Dr / Regents Rd	F-E/B	202
22	99075	Executive Dr / Executive Wy	F-E/B	204
23	99586	Judicial Dr / Golden Haven Dr	F-S/B	204
24	99194	Judicial Dr / Research Pl	F-S/B	204
25	13267	Nobel Dr / Towne Centre Dr	F-W/B	204
26	12782	11th Av / Broadway	F-N/B	215
27	99367	11th Av / B St	N-N/B	280/290
28	88916	I-15 Centerline Sta / University Av	F-N/B	235 NB
29	88918	I-15 Centerline Sta / El Cajon Bl	F-N/B	235 NB
30	23001	Miramar College Transit Station	TC-Bus	235 NB
31	23015	Sabre Springs / Penasquitos Station	TC-Bus	235 NB
32	99475	Rancho Bernardo Transit Station	TC-Bus	235 NB
33	99497	Del Lago Transit Station	TC-Bus	235 NB
34	99496	Escondido Transit Center	TC-Bus	235 SB
35	88919	I-15 Centerline Sta / El Cajon Bl	F-S/B	235 SB
36	88917	I-15 Centerline Sta / University Av	F-S/B	235 SB
37	10183	Clairemont Mesa Bl / Ruffin Rd	F-E/B	235 SB
38	99589	Santa Fe Depot Transit Center	N-S/B	215/225/235 EB
39	13314	Broadway / 1st Av	N-E/B	215/225/235 EB
40	10097	Broadway / 5th Av	N-E/B	215/225/235 EB

41	13550	Park Bl / University Av	F-N/B	215 EB
42	13552	Park Bl / Howard Av	F-N/B	215 EB
43	13554	El Cajon Bl / Texas St	F-E/B	215 EB
44	10543	El Cajon Bl / 30th St	F-E/B	215 EB
45	10190	El Cajon Bl / 35th St	F-E/B	215 EB
46	10609	El Cajon Bl / 43rd St	F-E/B	215 EB
47	13555	El Cajon Bl / Winona Av	F-E/B	215 EB
48	10250	El Cajon Bl / 54th St	F-E/B	215 EB
49	10262	College Av / El Cajon Bl	F-N/B	215 EB
50	11412	El Cajon Bl / College Av	F-W/B	215 WB
51	11389	El Cajon Bl / 54th St	F-W/B	215 WB
52	11377	El Cajon Bl / Winona Av	F-W/B	215 WB
53	10986	El Cajon Bl / 43rd St	N-W/B	215 WB
54	11334	El Cajon Bl / 35th St	F-W/B	215 WB
55	11296	El Cajon Bl / 30th St	F-W/B	215 WB
56	99199	El Cajon Bl / Texas St	F-W/B	215 WB
57	13553	Park Bl / Howard Av	F-S/B	215 WB
58	13551	Park Bl / University Av	N-S/B	215 WB
59	91107	Park Bl / Broadway	N-S/B	215 WB
60	10841	Broadway / 4th Av	N-W/B	215/225/235 WB
61	10839	Broadway / Union St	N-W/B	215/225/235 WB
62	99791	India St / C St	F-N/B	215/225/235 WB
63	99342	Broadway / Park Bl	F-W/B	225/235 SB
64	10109	Broadway / Park Bl	N-E/B	225/235 NB
65	TC	Otay Mesa Transit Center	TC-Bus	225(905/ 909/950)
66	88959	Millenia Station	E/B	225 NB
67	88957	Otay Ranch Station	N/B	225 NB
68	88955	Santa Venetia Station	W/B	225 NB
69	88953	Lomas Verdes Station	W/B	225 NB
70	88951	Heritage Station	W/B	225 NB
71	90515	East Palomar Station	W/B	225 NB
72	90514	East Palomar Station	E/B	225 SB
73	88950	Heritage Station	E/B	225 SB
74	88952	Lomas Verdes Station	E/B	225 SB
75	88954	Santa Venetia Station	E/B	225 SB
76	88956	Otay Ranch Station	S/B	225 SB
77	88958	Millenia Station	W/B	225 SB
78	N/A	Palomar Station Parking Lot	N/A	N/A

Contact Information
Diana Hernandez, Passenger Facilities Coordinator, BRT
Office: 619-446-4915
Email: Diana.Hernandez@sdmts.com

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

Agenda Item No. 13

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

DESIGN SERVICES FOR THE FASHION VALLEY ELEVATOR PROJECT – WORK ORDER AMENDMENT

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors:

1) Ratify Work Order Amendment Nos. 1-4 under MTS Doc No. G1949.0-17 (Attachments A-D) with Jacobs Engineering Group, Inc. (Jacobs) totaling $99,945.60, for additional design services; and

2) Authorize the Chief Executive Officer (CEO) to execute Work Order Amendment No. 5 WOA1949-AE-15.05 under MTS Doc. No. G1949.0-17 (insubstantially the same format as Attachment E) with Jacobs in the amount of $20,068.12 for additional Design Support During Construction (DSDC) services for the Project.

Budget Impact

The total budget for this project shall not exceed $391,798.59. Jacobs work order (WOA1949-AE-15) is funded through Capital Improvement Project (CIP) budget account number 2004001902 (Fashion Valley Second Elevator).

Work Order No.	Purpose	Amount	Board Approval Date
WOA1949-AE-15	Original Work Order	$271,784.87	2/15/18, Item 12
WOA1949-AE-15.01	Additional geotechnical engineering	$4,762.02	CEO approval 7/12/18 per Board Policy No. 41
WOA1949-AE-15.02	Additional design for bus movements	$27,349.90	CEO approval 8/9/18 per Board Policy No. 41
WOA1949-AE-15.03	DSDC services and creation of conformed drawings	$35,232.29	CEO approval 3/5/2020 per Board Policy No. 41
WOA1949-AE-15.04	Additional DSDC services	$32,601.39	CEO approval 10/2/2020 per Board Policy No. 41
WOA1949-AE-15.05	Additional DSDC services	$20,068.12	Today's Proposed Action
		$391,798.59	

DISCUSSION:

MTS contracted with Jacobs to provide design services to add a second elevator at the Fashion Valley Transit Center. The Fashion Valley Trolley Station is one of MTS's most highly traveled stations with more than 6,000 passengers per day. In order to continue servicing the increased number of passengers, an additional elevator was needed to supplement peak travel periods, and maintain the existing elevator. Two elevators are currently used at similar stations such as Grantville and Grossmont Center. Furthermore, construction of a second elevator will provide additional functionality of the station under the Americans with Disabilities Act (ADA). Currently, if the elevator is out of service, patrons must travel through the upper deck of a parking garage and over the mall to access another accessible route.

On February 15, 2018, the MTS Board approved Jacobs for design services for the Project. As the Project progressed from the start of design in early 2018 through construction, a number of minor scope changes occurred, resulting in the modification of the design scope.

In July 2018, Amendment No. 1 was issued to provide additional geotechnical engineering services to perform concrete coring and sampling of the existing soil. This information was necessary, as it provided bidders with a geotechnical report that reduced the bidders' risk and corresponding inflated pricing.

Amendment No. 2 was issued later in August 2018 for design revisions to aid in bus movements around the transit center. As design progressed, it became apparent the new elevator location would require changes to the ADA path of travel. To make the ADA path of travel modifications, the bus drive aisle and curbs needed to be modified. The resulting curb modifications shifted the bus drive aisle to the north, allowing passengers and buses the ability to safely travel through the transit center.

The construction contract for the Project was awarded in December 2019. In March 2020, Amendment No. 3 increased the design scope of work to include DSDC services and conformed drawings. MTS staff typically adds DSDC services to work orders when the project moves from the design phase to the procurement of construction services. The designer's work changes to a review and approval role, confirming the construction work matches the intended design. This amendment also included the creation of conformed drawings for the Project. The conformed drawings clarify the scope of the project when construction starts by incorporating all design changes resulting from question and answer (Q&A) period during the bid process. The resulting set of drawings reduces questions from the contractor and construction manager and simplifies the as-built document process.

Amendment No. 4 was issued in October 2020 as the project reached the half way point in construction. As work progressed in the field, design changes were made to the sump pump, to lower on-going maintenance costs, and to modify the exterior wall finish to match the existing elevator at the other end of the station.

Under proposed work order Amendment No. 5, the DSDC budget shall be increased one final time to incorporate two requested design changes by MTS staff: 1) enhancement of passenger safety and security, and 2) improvement of the proposed roof drainage design. The elevator installation is scheduled to be complete in Spring 2021.

On January 12, 2016, San Diego Association of Governments (SANDAG) and MTS issued a joint Request for Statement of Qualifications (RFSQ) for On-Call Architectural and Engineering (A&E) Design Consulting services. The RFSQ resulted in the approval of 8 firms qualified to perform A&E services. Tasks are assigned to the firms through a work order process. MTS selects the most qualified firm based on the scope of work to be performed.

MTS staff reviewed the approved A&E firms and utilizing a rotation process according to the established ranked order of firms, selected Jacobs to perform the requisite services. Jacobs had the architectural experience to fulfill the requirements of the Project.

Therefore, staff recommends that the MTS Board:

1) Ratify Work Order Amendment Nos. 1-4 under MTS Doc No. G1949.0-17 (Attachment A -D) with Jacobs totaling $99,945.60, for additional design services; and

2) Authorize the CEO to execute Work Order Amendment No. 5 WOA1949-AE-15.05 under MTS Doc. No. G1949.0-17 (insubstantially the same format as Attachment E) with Jacobs in the amount of $20,068.12 for additional DSDC services for the Fashion Valley Elevator project.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachments:
A. Work Order WOA1949-AE-15.01, MTS Doc No. G1949.0-17
B. Work Order WOA1949-AE-15.02, MTS Doc No. G1949.0-17
C. Work Order WOA1949-AE-15.03, MTS Doc No. G1949.0-17
D. Work Order WOA1949-AE-15.04, MTS Doc No. G1949.0-17
E. Draft Work Order WOA1949-AE-15.05, MTS Doc No. G1949.0-17

Metropolitan Transit System

July 10, 2018

MTS Doc. No. G1949.1-17
Work Order No. WOA1949-AE-15.01

Jacobs Engineering Group, Inc.
Lewis P. Cornell, Vice President
725 West Town & Country Road, Suite 300
Orange CA, 92868

Dear Mr. Cornell:

Subject: MTS DOC. NO. G1949.1-17, WORK ORDER WOA1949-AE-15, GENERAL ENGINEERING DESIGN SERVICES FOR FASHION VALLEY STATION ELEVATOR REPLACEMENT AND ADDITION PROJECT

This letter shall serve as Amendment 1 to Work Order WOA1949-AE-15 to MTS Doc. No. G1949.1-17, for professional services under the General Engineering Consultant Agreement, as further described below.

SCOPE OF SERVICES

This Amendment adds two cone penetrometer tests to be performed at the proposed locations of the elevators in order to obtain additional information on the subsurface soil conditions. Concrete coring and patching will also be performed in order to advance the cone penetrometer to an approximate depth of 60 feet at the two locations.

SCHEDULE

There shall be no change to the original schedule.

PAYMENT

This Amendment adds an additional $4,762.02 to the Work Order. Payment shall be based on actual costs in the amount not to exceed without prior authorization of $276,762.02.

Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

Paul C. Jablonski
Chief Executive Officer

LMARQUIS-CL
CL-G1949.1-17.WOA1949-AE-15.01.JACOBS.SAUGUSTYN

Attachment: A - Negotiated Fee Proposal

Accepted:

Lewis Cornell
Jacobs Engineering Group, Inc.

Date: *August 7, 2018*

August 7, 2018

MTS Doc. No. G1949.1-17
Work Order No. WOA1949-AE-15.02

Jacobs Engineering Group, Inc.
Lewis P. Cornell, Vice President
725 West Town & Country Road, Suite 300
Orange CA, 92868

Dear Mr. Cornell:

Subject: MTS DOC. NO. G1949.1-17, WORK ORDER WOA1949-AE-15, GENERAL ENGINEERING DESIGN SERVICES FOR FASHION VALLEY STATION ELEVATOR REPLACEMENT AND ADDITION PROJECT

This letter shall serve as Amendment 2 to Work Order WOA1949-AE-15 to MTS Doc. No. G1949.1-17, for professional services under the General Engineering Consultant Agreement, as further described below.

SCOPE OF SERVICES

This Amendment adds services to to mitigate complications with standard bus turning movements in and around the Fashion Valley MTS Bus Station (Attachment A).

SCHEDULE

There shall be no change to the original schedule.

PAYMENT

This Amendment adds an additional $27,349.90 to the Work Order (Attachment B). Payment shall be based on actual costs in the amount not to exceed without prior authorization of $303,896.79.

Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

Paul C. Jablonski
Chief Executive Officer

SAUGUSTYN
G1949.1-17.JACOBS.080718

Accepted:

for Lewis Cornell
Jacobs Engineering Group, Inc.

Date: 08/28/2018

Attachments: Attachment A, Scope of Work
Attachment B, Negotiated Fee Proposal

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466

February 27, 2020

MTS Doc. No. G1949.0-17
Work Order No. WOA1949-AE-15.03

Jacobs Engineering Group, Inc.
Kosal Krishnan, Vice President
725 West Town & Country Road, Suite 300
Orange CA, 92868

Dear Mr. Krishnan:

Subject: AMENDMENT NO. 3 WORK ORDER WOA1949-AE-15, MTS DOC. NO. G1949.0-17, GENERAL ENGINEERING DESIGN SERVICES FOR FASHION VALLEY STATION ELEVATOR REPLACEMENT AND ADDITION PROJECT

This letter shall serve as Amendment 3 to Work Order WOA1949-AE-15 to MTS Doc. No. G1949.0-17, for professional services under the General Engineering Consultant Agreement, as further described below.

SCOPE OF SERVICES

This Amendment adds services to provide revised conformed documents for a single elevator for the Fashion Valley Station Elevator Replacement and Addition Project (Attachment A).

SCHEDULE

The original schedule shall extend through September 30, 2021.

PAYMENT

This Amendment adds an additional $35,232.29 to the Work Order (Attachment B). Payment shall be based on actual costs in the amount not to exceed without prior authorization of $339,129.08.

Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

Paul C. Jablonski
Chief Executive Officer

Accepted:

Kosal Krishnan
Jacobs Engineering Group, Inc.

Date: 3/17/2020

Attachments: Attachment A, Scope of Work
Attachment B, Negotiated Fee Proposal

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Tel 619.231.1466 Fax 619.234.3407

September 30, 2020

MTS Doc. No. G1949.0-17
Work Order No. WOA1949-AE-15.04

Jacobs Engineering Group, Inc.
Julian Hoyle, Vice President
725 West Town & Country Road, Suite 300
Orange CA, 92868

Dear Mr. Hoyle:

Subject: AMENDMENT NO. 4 TO WORK ORDER WOA1949-AE-15, MTS DOC. NO. G1949.0-17 GENERAL ENGINEERING DESIGN SERVICES FOR FASHION VALLEY STATION ELEVATOR REPLACEMENT AND ADDITION PROJECT

This letter shall serve as Amendment No. 4 to Work Order WOA1949-AE-15 to MTS Doc. No. G1949.0-17, for professional services under the General Engineering Consultant Agreement, as further described below.

SCOPE OF SERVICES

There shall be no change to the Scope of Services. This Amendment adds funds to the Work Order for Design Support During Construction services for the Fashion Valley Station Elevator Replacement and Addition Project.

SCHEDULE

There shall be no change to the schedule as a result of this Amendment. The original schedule shall remain in effect through September 30, 2021.

PAYMENT

This Amendment adds an additional $32,601.39 to the Work Order (Attachment A). Payment shall be based on actual costs. The revised Work Order amount shall not to exceed $371,730.47 without prior authorization of MTS.

Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

Sharon Cooney
Chief Executive Officer

Accepted:

Julian Hoyle
Jacobs Engineering Group, Inc.

Date: 10/27/2020

Attachments: Attachment A, Negotiated Fee Proposal

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Tel 619.231.1466 Fax 619.234.3407

DRAFT

February 11, 2021

MTS Doc. No. G1949.0-17
Work Order No. WOA1949-AE-15.05

Jacobs Engineering Group, Inc.
Julian Hoyle, Vice President
725 West Town & Country Road, Suite 300
Orange, CA 92868

Dear Mr. Hoyle:

Subject: AMENDMENT NO. 5 TO WORK ORDER WOA1949-AE-15, MTS DOC. NO. G1949.0-17 GENERAL ENGINEERING DESIGN SERVICES FOR FASHION VALLEY STATION ELEVATOR REPLACEMENT AND ADDITION PROJECT

This letter shall serve as Amendment No. 5 to Work Order WOA1949-AE-15 to MTS Doc. No. G1949.0-17, for professional services under the General Engineering Consultant Agreement, as further described below.

SCOPE OF SERVICES

There shall be no change to the Scope of Services. This Amendment adds funds to the Work Order for Design Support During Construction services for the Fashion Valley Station Elevator Replacement and Addition Project.

SCHEDULE

There shall be no change to the schedule as a result of this Amendment. The original schedule shall remain in effect through September 30, 2021.

PAYMENT

This Amendment adds an additional $20,068.12 to the Work Order (Attachment A). Payment shall be based on actual costs. The revised Work Order amount shall not to exceed $391,798.59 without prior authorization of MTS.

Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

Sharon Cooney
Chief Executive Officer

Accepted:

_____
Julian Hoyle
Jacobs Engineering Group, Inc.

Date: _____

Attachments: Attachment A, Negotiated Fee Proposal

ATTACHMENT A
NEGOTIATED FEE PROPOSAL

Work Order Estimate Summary

MTS Doc. No.	**G1949.0-17**
Work Order No.	**17.04**
Attachment:	**B**

Work Order Title: Fashion Valley Elevator -Amendment 5 -Provide Additional DSDC & Close-out

Project No:	**TBD**

Table 1 - Cost Codes Summary (Costs & Hours)

Item	Cost Codes	Cost Codes Description	Total Costs
1	0100	PROJECT MANAGEMENT	$560.00
2	0255	ENGINEERING	$19,508.12
		Totals =	**$20,068.12**

Table 2 - TASKS/WBS Summary (Costs & Hours)

Item	TASKS/WBS	TASKS/WBS Description	Labor Hrs	Total Costs
1	ADMIN	PM & COORDINATION		$560.00
10	ENGINEERING	DESIGN SUPPORT DURING CONSTRUCTION & CLOSE-OUT	154.00	$19,508.12
		Totals =	**154.00**	**$20,068.12**

Table 3 - Consultant/Subconsultant Summary (Costs & Hours)

(If Applicable, Select One)				Consultant	Labor Hrs	Total Costs
DBE	DVBE	SBE	Other			
			X	JACOBS	154.00	$20,068.12
				Totals =	**154.00**	**$20,068.12**

Work Order Estimate Summary

Total Hours =	154
Total Costs =	$20,068.12

JACOBS ENGINEERING GROUP, INC.

Fashion Valley Elevator -Amendment 5 -Provide Additional DSDC & Close-out

MTS Doc. No.: G1949.0-17

Work Order No.: 17.04

Attachment: B

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	PIRBAZARI, KEYVAN Manager of Projects III $ 255.14	TINARI, JOSEPH Manager of Engineering I $ 219.47	OLSIEWSKI, STANLEY Office Engineer V (Architecture) $ 124.18	LEE, CHRISTOPHER Civil Design VI $ 133.68	SHERVIN SHAFI Structural Engineering IV $147.23	MONTELLANO, VIC Engineering PM II (Electrical) $ 173.85	KORPASH, CURTIS Engineering PM II (Mechanical Design) $ 173.85	Total Hours	Totals
1	**ADMIN**	**PM & COORDINATION**										
1.1	0100	INVOICING/SCHEDULING/ADMIN	$560.00									$560.00
1.2	0100	COORDINATION W/MTS, BUS OPERATORS, MTS PROCUREMENT										
1.4	0100	QA/QC ON DELIVERABLES										
		Subtotals (Hours) =	**N/A**									**$560.00**
		Subtotals (Costs) =	**$560.00**									**$560.00**
10	**ENGINEERING**	**DESIGN SUPPORT DURING CONSTRUCTION & CLOSE-OUT**										
10.1	0255	ATTEND WEEKLY CONSTRUCTION MEETINGS(2hrs/wk for 4 mos)				32					32	$3,973.76
10.2	0255	REVIEW & APPROVE SUBMITTALS				40					40	$4,967.20
10.3	0255	RESPOND TO RFI'S				60					60	$7,450.80
10.4	0255	FIELD OBSERVATIONS										
10.5	0255	PREPARE DCN'S				6					6	$745.08
10.6	0255	PUNCHLIST & CLOSEOUT ACTIVITIES	200			8		8			16	$2,371.28
		Subtotals (Hours) =	**N/A**			**146**		**8**			**154**	**$19,508.12**
		Subtotals (Costs) =	**$200.00**			**$18,130.28**		**$1,177.84**			**154**	**$19,508.12**
		Totals (Summary) =									**154**	**$20,068.12**
		Total (Hours) =	**N/A**			**146**		**8**			**154**	
		Total (Costs) =	**$760.00**			**$18,130.28**		**$1,177.84**				**$20,068.12**
		Percentage of Total (Hours) =	**N/A**			**95%**		**5%**			**100%**	
		Percentage of Total (Costs) =	**4%**			**90%**		**6%**				**100%**

Work Order Estimate Summary

Consultant/ Subconsultant: **JACOBS ENGINEERING GROUP, INC.**

Contract No: **G1949.0-17**

Task Order No. **17.04**

Work Order Title: **Fashion Valley Elevator -Amendment 5 -Provide Additional DSDC & Close-out**

Attachment: **B**

TASKS/WBS (1-5)

ODC Item	Description	Unit	Unit Cost	Task 1		Task 2		Task 3		Task 4		Task 5	
				Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	Mileage	EA	$200.00										
2	Contract Admin	LS	$560.000	1	$560.00								
3													
4													
5													
6													
7													
8													
9													
10													
				Subtotal =	**$560.00**	Subtotal =		Subtotal =		Subtotal =		Subtotal =	

TASKS/WBS (6-10)

ODC Item	Description	Task 6		Task 7		Task 8		Task 9		Task 10		Totals	
		Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	Mileage									1	$200.00	**1**	**$200.00**
2	Contract Admin											**1**	**$560.00**
3													
4													
5													
6													
7													
8													
9													
10													
		Subtotal =		Subtotal =		Subtotal =		Subtotal =		Subtotal =	**$200.00**	**Totals =**	**$760.00**

JACOBS

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

Agenda Item No. 14

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

AMERICA PLAZA PEDESTRIAN ENHANCEMENTS PROJECT – AWARD WORK ORDER CONTRACT

RECOMMENDATION:

That the San Diego Metropolitan Transit System (MTS) Board of Directors authorize the Chief Executive Officer (CEO) to execute Work Order WOA1951-AE-63 to MTS Doc. No. G1951.0-17 (in substantially the same format as Attachment A) with Mott MacDonald in the amount of $749,706.49 for design services for the America Plaza Pedestrian Enhancements Project

Budget Impact

The total budget for this project shall not exceed $749,706.49. This project is funded by MTS Capital Improvement Program (CIP) Project # 2009108001 – America Plaza Pedestrian Enhancements – Design.

DISCUSSION:

As part of its grant application to the State of California for the Transit and Intercity Rail Capital Program (TIRCP), MTS identified a need to improve pedestrian connections between America Plaza and Santa Fe Depot. As a gateway to San Diego for travelers arriving downtown by passenger rail, or by bus from the airport, the America Plaza/Santa Fe Depot station area is a critical transportation center for the region. The existing public walkways and wayfinding do not adequately accommodate pedestrian demand today. Pedestrian travel through this busy connection point, which is expected to grow with the Mid-Coast Trolley extension opening in late 2021, is further increasing the need for the project. The State of California awarded MTS just over $4.2 million for the project in a 2018 TIRCP Grant.

On July 25, 2019, the MTS Board authorized a work order for Mott MacDonald to study the existing conditions, conduct public outreach, and develop conceptual designs to improve the pedestrian connection between Santa Fe Depot and America Plaza. The results of the outreach and design concepts were reviewed by MTS staff, and a preferred concept was selected. The preferred concept was documented in a final report and submitted to the MTS Board in September 2020, and included a new crosswalk, landscaped median, two sawtooth bus bays, and adjusted curb and sidewalks to support multi-modal transportation between America Plaza and Santa Fe Depot.

This work order will authorize Mott MacDonald to generate detailed design drawings, technical specifications and cost estimates. The final documents resulting from this work order will be used to advertise the project to obtain competitive bids and ultimately construct the project.

On January 12, 2016, San Diego Association of Governments (SANDAG) and MTS issued a joint Request for Statement of Qualifications (RFSQ) for On-Call Architectural and Engineering (A&E) Design Consulting services. The RFSQ resulted in the approval of eight firms qualified to perform A&E services. Tasks are assigned to the firms through a work order process.

MTS staff reviewed the approved A&E firms and utilizing a direct award process, selected Mott MacDonald to perform the requisite services. Mott MacDonald had previously completed conceptual design, as noted above.

Mott MacDonald's proposed amount was $858,258.01. After discussions and negotiations, staff was able to reduce this cost to $749,706.49 which is less than MTS's Independent Cost Estimate (ICE) and determined to be fair and reasonable.

Mott MacDonald will be using the following subconsultants for this project: Estrada Land Planning (Disadvantaged Business Enterprise (DBE)), Aguirre & Associates (DBE), Ninyo & Moore (Minority Owned Business Entperise (MBE)), STC Traffic (Small Business (SB)), and Fehr & Peers.

Therefore, staff recommends that the MTS Board authorize the CEO to execute Work Order WOA1951-AE-63 to MTS Doc. No. G1951.0-17 (in substantially the same format as Attachment A) with Mott MacDonald in the amount of $749,706.49 to develop complete design for the America Plaza Pedestrian Enhancements project.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, Julia.Tuer@sdmts.com

Attachment: A. Draft Work Order WOA1951-AE-63 to MTS Doc. No. G1951.0-17

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101
Tel 619.231.1466 Fax 619.234.3407

DRAFT

February 11, 2021

MTS Doc. No. G1951.0-17
Work Order No. WOA1951-AE-63

Mr. Dan Tempelis
Senior Vice President
Mott MacDonald, LLC
401 B Street, Suite 1520
San Diego, CA 92101

Dear Mr. Tempelis:

Subject: MTS DOC. NO. G1951.0-17, WORK ORDER WOA1951-AE-63, GENERAL ENGINEERING SERVICES FOR AMERICA PLAZA/SANTA FE DEPOT PEDESTRIAN ENHANCEMENTS FINAL DESIGN

This letter shall serve as our agreement for Work Order WOA1951-AE-63 to MTS Doc. No. G1951.0-17, for engineering services for America Plaza/Santa Fe Depot Pedestrian Enhancements final design.
.

SCOPE OF SERVICES

Provide design services for America Plaza/Santa Fe Depot Pedestrian Enhancements final design project. Work provided under this Work Order will be performed in accordance with the attached Scope of Services (Attachment A)

SCHEDULE

The Scope of Services, as described above, shall for a period of nine (9) months from the date of the Notice to Proceed.

PAYMENT

Payment shall be based on actual costs in the not to exceed amount of $749,706.49 without prior authorization of MTS.

Please sign below, and return the document to the Contracts Specialist at MTS. All other terms and conditions shall remain the same and in effect.

Sincerely,

Sharon Cooney
Chief Executive Officer

Accepted:

_____
Dan Tempelis, Senior Vice President
Mott MacDonald, LLC

Date: _____

Attachments: Attachment A, Scope of Services
Attachment B, Negotiated Fee Proposal

ATTACHMENT A
SCOPE OF SERVICES

SAN DIEGO METROPOLITAN TRANSIT SYSTEM (MTS)

ATTACHMENT A

MTS Doc. No. G1951.0-17 **Work Order No. WOA1951-AE-63**

Project Title: America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design

I. INTRODUCTION

The San Diego Metropolitan Transit System (MTS) is the transit operator for southern San Diego County, including the City of San Diego.

The America Plaza and Santa Fe Depot transit stations together represent the primary mass transportation portal to downtown San Diego for visitors, residents, and commuters. America Plaza and Santa Fe Depot together are the first points of interaction for passengers entering downtown San Diego via Amtrak Pacific Surfliner passenger rail and North County Transit District (NCTD) Coaster commuter rail. Furthermore, these facilities serve as the primary link into the MTS transit network for passengers arriving from the San Diego International Airport and via San Diego-docking cruise ships via MTS Route 992.

America Plaza currently serves as the terminal for the MTS UC San Diego Blue Line Trolley (the "Blue Line"), connecting downtown San Diego with Tijuana, Mexico at the San Ysidro Port of Entry. Beginning in late 2021 following the completion of a nearly $2 Billion capital project, the Blue Line will also extend north from America Plaza to the campus of the University of California, San Diego. MTS Sycuan Green Line service (the "Green Line") is provided to Santa Fe Depot, and extends east through San Diego's Mission Valley to the East County communities of La Mesa, El Cajon, and Santee.

The three MTS Rapid bus lines serving these stations include:

- Rapid 215 serving the San Diego Zoo, San Diego's uptown areas of Hillcrest, North Park, and City Heights, and San Diego State University;
- Rapid 225 to the City of Chula Vista in San Diego's South Bay region and Tijuana, Mexico at the Otay Mesa Port of Entry; and
- Rapid 235 between downtown San Diego along Interstate 15 through to the City of Escondido.

At present, this major regional hub is a center point for transit service in the region, but generally operates as a set of co-located individual components. While Amtrak, Coaster, Green Line, and outbound Rapid services all serve Santa Fe Depot, the Blue Line and inbound Rapid services serve America Plaza Trolley Station. In practice the independent operations are separated and difficult for patrons to navigate. Passengers wishing to make connections at Santa Fe Depot are asked to activate a traffic signal to cross Kettner Boulevard. This has often resulted in delays to transit connections, and incentivized passengers to cross against the signal to make tight connections. Furthermore, the current configuration has caused confusion, as reported by patrons wishing to make connections.

II. EXPECTED RESULTS

The goal of this project is to provide complete construction documents based on the MTS approved America Plaza/Santa Fe Depot Pedestrian Enhancement Project Final Report completed by Mott MacDonald and received by the MTS Board of Directors on September 17, 2020. The main elements of project are summarized below.

- Project limits are along Kettner Blvd between Broadway and B Street
- One new raised crosswalk and one relocated and raised crosswalk on Kettner Blvd.
- Landscaped median
- Two sawtooth bus bays as part of bus stop enhancements
- Adjusted curbs and sidewalks to accommodate separate bus, taxi, loading, and parking areas

- Improved pedestrian lighting and landscaping
- New sidewalk and road pavers
- Restriping of Kettner Blvd.

In addition to providing the bid ready plans, specifications and estimate (PS&E), the Consultant shall provide all necessary outside agency coordination, obtain plan/permit approvals from the City of San Diego and other agencies (if needed), and perform all necessary survey and pre-construction geotechnical engineering in accordance with this Scope of Work.

This project will also incorporate a modern wayfinding program that will not only help connect passengers with transit services, but also help guide passengers toward other civic amenities. MTS will provide the overall wayfinding content (visuals/graphics) and sign type by location, but Consultant shall be responsible for identifying the signage location on the site plans and performing any required structural assessment for sign posts and/or foundations. Consultant will also provide the specification for the signs, including material finish and dimensions.

Taken together, the final transit center design will reflect cutting-edge green urban design and spatial planning, resulting in a creative and welcoming human-scale public space that is sensitive to both the surrounding built environment and the climate.

III. SCOPE OF WORK

The scope of work shall consist of the following tasks and deliverables:

Task 1 - Project Management and Coordination

1.1 Provide project management services including the requirements for invoicing, scheduling, monthly project progress reports, and administration of the Consultant's team.

1.2 Arrange and facilitate Project Development Team (PDT) meetings, interagency meetings, field reviews, and other project-related meetings. Consultant shall prepare meeting agendas, meeting minutes, necessary supplemental materials, and meeting sign-in sheets for all meetings.

1.3 Develop and implement a project schedule to complete the Scope of Work and manage the project to eliminate or minimize supplemental agreements.

1.4 Provide coordination between MTS and outside agencies and stakeholders, this includes decision making and communication with MTS and community/agency stakeholder team.

1.5 Prepare monthly status reports and project schedules which are to be submitted with invoices. The status report must outline all activities for which charges have been made by the Consultant or sub-Consultants. The Consultant shall prepare a draft status report and submit it for approval prior to submitting the first invoice.

1.6 Provide QA/QC on all deliverables. To ensure quality of work and compliance with the scope of work, the consultant shall perform a systematic in-house review of all documents produced prior to submittal. All reviewed documents shall have a check box or signature indicating a review has been performed.

Task 2 – Outside Agency Coordination and Approvals

2.1 Provide all necessary coordination with outside agencies and key stakeholders as required for the design. This includes, but isn't limited to the owners of Santa Fe Depot, North County Transit District, Amtrak, and the City of San Diego. The work also included coordination with the hotel development for the design of entrance driveway configuration and division of work. Consultant shall coordinate with MTS staff regarding ownership, easements, and joint-use agreements.

2.2 Provide all necessary coordination, submissions, and approvals of the design with the City of San Diego in order to obtain plan approval for the Contractor to obtain the necessary construction permit.

2.3 Collect all necessary as-builts from outside agencies required for the design.

2.4 Conduct initial site visits with MTS for review of project, confirmation of existing conditions, and examine existing environment, structures, and facilities.

Task 3 – Survey and Geotechnical Engineering During Design

3.1 Provide all necessary surveying for use in the design and permitting of site improvements. Consultant shall review and evaluate information for the proposed work area, including all available information and MTS design guidelines, local jurisdiction requirements, ADA standards and other pertinent information that may apply. Any survey after design or during the construction phase will be performed by the construction manager or contractor.

3.2 Provide all necessary geotechnical engineering as required for the design. This includes any testing or requirements the City of San Diego has as it relates to approvals and permit issuance. Any geotechnical engineering, special inspection, observations, or recommendations required during the course of the construction will be performed by the construction manager and/or contractor. Consultant shall review all pertinent and available geotechnical literature including geotechnical reports, topographic maps, geologic maps and aerial photographs; perform three field borings approximately 5 feet below existing pavement surface; and compile and analyze the data obtained; prepare a geotechnical memo. The geotechnical memo shall consist of a proposed pavement section, boring logs, and R-value test results. The consultant will conduct R-Value testing and engineering analysis required to evaluate geotechnical parameters and develop a proposed pavement section.

3.3 Provide environmental sampling in conjunction with the geotechnical evaluation. The environmental sampling shall consist of collecting soil samples during manual advancement of the three proposed borings at depths of 1, 3, and 5 feet below ground surface (BGS); submitting the soil samples, under chain-of-custody procedures, to a State of California certified laboratory for analysis of total petroleum hydrocarbons (TPH) extended range organics (TPH-ext) (C4-C40) utilizing EPA Method 8015B, volatile organic compounds (VOCs), including fuel oxygenates, utilizing EPA Method 8260B, and Title 22 Metals utilizing EPA Method 6010B/7471A; and preparing and submitting a technical memorandum summarizing the analytical results, including analytical data tables and figures. In the event that soil export is required, Consultant shall provide direction on the proper removal and disposal of the soil.

3.4 Prepare a limited geotechnical report based on the design phase geotechnical explorations.

Task 4 – Design, Specifications, and Estimate

4.1 The Consultant shall prepare a complete set of drawings consisting of, but not limited to the following:

- Civil site plans and details based on any as-built plans, survey and field information gathered.
- Demolition plans and details showing the limits and depth of all pavement removals, concrete removals, landscaping, and any other necessary demolition work with preferred material staging areas. Items to be protected, relocated, or salvaged shall also be clearly identified.
- Improvement plans that depict the dimensions and limits of all paving improvements, parking improvements, pedestrian crosswalks, hardscaping, and related work. The details shall depict concrete pavement thickness, asphalt pavement thickness and details, subgrade preparation, pavement jointing details, slab reinforcement details, fencing details, and all required work.
- Signing and striping plans depicting wayfinding signage locations, striping, and other related work.
- Wayfinding plans depicting site-specific placement details, sign fabrication and foundation details, and individual sign layouts. This work assumes up to a total of 40 signs that will be distributed across 28 gateways and nodes identified in the America Plaza/Santa Fe Depot Wayfinding Design Guidelines: Mapping Gateways, Nodes, and Pathways diagram.

- Traffic signal plans depicting any modifications to existing signalized intersections, including any additional pedestrian signals at the new raised crosswalk, and other related work.
- Grading and Drainage plans that depict existing and proposed contour lines, drainage structures, and drainage patterns with flow lines and ridges.
- Landscape and Irrigation plans
- Erosion and Sedimentation control plans and details showing locations of proposed temporary construction BMPs and proposed installation details.
- Street Lighting Plans depicting the electrical point of connection, underground conduit pathway, wiring sizes, single line diagram, panel designation, typical trench detail, spare conduit design, and components necessary for the work.
- Traffic Control Plans

4.2 Based on initial site visit, coordination with MTS and in response and adherence to the final Report, prepare design plan submittal packages at 60%, 90%, and 100% phases. Design plans shall include site layout, demolition, facility layout, concrete and asphalt paving, amenity installation details, utilities, and detail sheets.

4.3 Consultant shall prepare technical specifications for the proposed work. The specifications will be submitted to MTS for review at each milestone. Specifications will be prepared in CSI format. For any standard reference the Caltrans Standard Specifications (current version), San Diego Standard Specifications for Public Works Construction (current version), or San Diego Regional Standard Drawings can be referenced in order to adhere to the City of San Diego requirements as necessary for permitting approval.

4.4 Prepare construction cost estimate at each plan submission. The Consultant will develop a construction cost estimate for the 60%, 90% and 100% plan level and submit it to MTS. Current available cost data will be used to develop the Engineer's Estimate, and a bottom's up estimate is not included.

Task 5 – Construction Procurement Bid Support

5.1 Consultant shall assist MTS with the construction procurement by responding to bidder comments and pre-bid RFIs during the bidding phase.

5.2 Consultant shall prepare any specifications or front-end division 1 information to adhere to the MTS standard IFB language.

IV. PERIOD OF PERFORMANCE

MTS plans to see this project effort complete within nine (9) months following issuance of a Notice to Proceed.

V. DELIVERABLES

MTS expects to receive the following deliverables produced over the course of this project:

Task 1
- Project Schedule
- Monthly Invoices and Status Reports
- Meeting Agendas, Minutes, and Sign-in Sheets

Task 2
- None

Task 3

- Survey
- A Geotechnical Memo with a proposed pavement section, boring logs, and R-value test results
- A Geotechnical Memo summarizing the environmental analysis

Task 4

- 60% plans, specifications, and opinion of probable construction cost; one PDF copy.
- 90% plans, specifications, and opinion of probable construction cost; one PDF copy.
- 100% plans, specifications, and opinion of probable construction cost; one PDF copy and one full-size hard copy and one full-size mylar copy to be submitted to the City of San Diego.
- Issued for Construction (IFC) plans and specifications; one PDF copy
- Microstation CAD files to be submitted to the City of San Diego at project closeout
- Geotechnical report, including soil test results and recommendations

Task 5

- Specifications or front-end Division 1 information

VI. ASSUMPTIONS

The following items are assumed to complete the Scope of Work:

- A Categorical Exemption is anticipated under CEQA
- Design shall comply with City of San Diego Street Design Manual (March 2017), MTS Designing for Transit Manual (February 2018) and any other criteria and/or guidance for the Authority having Jurisdiction
- Design drawings shall be developed to comply with the City of San Diego CADD standards
- City of San Diego review period of 30 calendar days
- Traffic Index to be provided by City of San Diego
- New streetlights will not require additional feeds or coordination with SDG&E. All relocated and new lights will be connected to existing streetlight circuits.
- Over the shoulder review with MTS and the City of San Diego
- All equipment installed for the new pedestrian signal will be new with the exception of the service cabinet. The service cabinet from the traffic signal being removed will remain in-place and will be used to power the new traffic signal.
- Three (3) stages of construction are assumed for traffic control.

VII. EXCLUSIONS

The following items are excluded from this Scope of Work:

- Basis of Design Document (Work will be based on the approved PSR)
- Wayfinding visuals, graphics, and sign types
- Environmental documents/reports
- Pre- and Post-Construction Surveys
- Construction Permits
- Drainage Report
- Soil horticultural analysis and/or testing
- Traffic signal coordination timing plans
- Fiber splice diagrams
- Temporary signals

VIII. SCHEDULE OF SERVICES/MILESTONES/DELIVERABLES

Task	Begin/End Dates
Project Management and Coordination	NTP/project completion
Document Review and Site Visits	NTP/project completion

60% Design Submittal	NTP/NTP + 5 months
90% Design Submittal	NTP/NTP + 7 months
100% Design Submittal	NTP/NTP + 9 months

B. Milestones/Deliverables Schedule

Milestone/Deliverable	**Due Date**
Geotechnical Report, including soil test results	NTP + 2 months
Over the Shoulder Review	NTP/NTP + 3 months
60% Design Submittal	NTP/NTP + 5 months
90% Design Submittal	NTP/NTP + 7 months
100% Design Submittal	NTP/NTP + 9 months

IX. MATERIALS TO BE PROVIDED BY MTS AND/OR THE OTHER AGENCY

MTS will provide all necessary As-Builts for existing facilities within the project site if obtainable.

X. SPECIAL CONDITIONS

Not Applicable.

XI. MTS ACCEPTANCE OF SERVICES:

Contractor shall not be compensated at any time for unauthorized work outside of this Work Order. Contractor shall provide notice to MTS' Project Manager upon 100% completion of this Work Order. Within five (5) business days from receipt of notice of Work Order completion, MTS' Project Manager shall review, for acceptance, the 100% completion notice. If Contractor provides final service(s) or final work product(s) which are found to be unacceptable due to Contractors and/or Contractors subcontractors negligence and thus not 100% complete by MTS' Project Manager, Contractor shall be required to make revisions to said service(s) and/or work product(s) within the Not to Exceed (NTE) Budget. MTS reserves the right to withhold payment associated with this Work Order until the Project Manager provides written acceptance for the 100% final completion notice. Moreover, 100% acceptance and final completion will be based on resolution of comments received to the draft documents and delivery of final documentation which shall incorporate all MTS revisions and comments.

Monthly progress payments shall be based on hours performed for each person/classification identified in the attached Fee Schedule and shall at no time exceed the NTE. Contractor shall only be compensated for actual performance of services and at no time shall be compensated for services for which MTS does not have an accepted deliverable or written proof and MTS acceptance of services performed.

XII. DEFICIENT WORK PRODUCT:

Throughout the construction management and/or implementation phases associated with the services rendered by the Contractor, if MTS finds any work product provided by Contractor to be deficient and the deficiently delays any portion of the project, Contractor shall bear the full burden of their deficient work and shall be responsible for taking all corrective actions to remedy their deficient work product including but not limited to the following:

- Revising provided documents,

At no time will MTS be required to correct any portion of the Contractors deficient work product and shall bear no costs or burden associated with Contractors deficient performance and/or work product.

XIII. DELIVERABLE REQUIREMENTS

Contractor will be required to submit any and all documentation required by the Scope of Work. The deliverables furnished shall be of a quality acceptable to MTS. The criteria for acceptance shall be a product of neat appearance, well-organized, and procedurally, technically and grammatically correct. MTS reserves the right to request a change in the format if it doesn't satisfy MTS's needs. All work products will become the property of MTS. MTS reserves the right to disclose any reports or material provided by the Contractor to any third party.

Contractor shall provide with each task, a work plan showing the deliverables schedule as well as other relevant date needed for Contractor's work control, when and as requested by MTS.

Contractor's computer data processing and work processing capabilities and data storage should be compatible with Windows compatible PC's, text files readable in Microsoft Word, and standard and customary electronic storage. Contractor shall maintain backup copies of all data conveyed to MTS.

Contractor shall provide MTS with hard copy or electronic versions of reports and/or other material as requested by MTS.

XIV. PRICING

Pricing shall be firm and fixed for the duration of the Work Order and any subsequent Change Orders/Amendments to the Work Order. There shall be no escalation of rates or fees allowed.

XV. ADDITIONAL INFORMATION

List additional information as applicable to the specific Work Order scope of services.

XVI. PREVAILING WAGE

Prevailing wage rates apply to certain personnel for these services? ■ Yes ☐ No

If yes, please list classification subject to prevailing wage rates:

Party Chief
Chainman

Exhibit A: America Plaza/Santa Fe Depot Pedestrian Enhancement Project Final Report

ATTACHMENT B
NEGOTIATED FEE PROPOSAL

Work Order Estimate Summary

MTS Doc. No. G1951.0-17

Work Order No. WOA1951-AE-63

Attachment: B

Work Order Title: America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design

Project No:

Table 1 - Cost Codes Summary (Costs & Hours)

Item	Cost Codes	Cost Codes Description	Total Costs
1		America Plaza / Santa Fe Depot Pedestrian Enhancement	$749,706.49
2			
		Totals =	**$749,706.49**

Table 2 - TASKS/WBS Summary (Costs & Hours)

Item	TASKS/WBS	TASKS/WBS Description	Labor Hrs	Total Costs
1	Task 1	Project Management and Coordination	334	$63,613.02
2	Task 2	Outside Agency Coordination and Approvals	344	$73,840.24
3	Task 3	Survey and Geotechnical Engineering	367	$70,761.52
4	Task 4	Design, Specifications, and Estimate	3580	$517,129.32
5	Task 5	Construction Procurement Support	157	$24,362.39
		Totals =	**4,782.0**	**$749,706.49**

Table 3 - Consultant/Subconsultant Summary (Costs & Hours)

(If Applicable, Select One)				Consultant	Labor Hrs	Total Costs
DBE	DVBE	SBE	Other			
				MOTT MACDONALD GROUP	2,518	$434,631.26
x				Estrada Land Planning	767	$90,802.91
x				Aguirre & Associates	181	$27,692.90
				Ninyo & Moore Geotechnical & Environmental Sciences Consultants	118	$30,397.22
		x		STC Traffic	540	$80,240.00
				Fehr & Peers	658	$85,942.20
				Totals =	**4,782.0**	**$749,706.49**

Work Order Estimate Summary

Total Hours = **2,518**

Total Costs = **$434,631.26**

Consultant/Subconsultant: **MOTT MACDONALD GROUP**

MTS Doc. No.: **G1951.0-17**

Work Order No.: **WOA1951-AE-63**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

Attachment: B

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Contract Manager	Principal Engineer	Senior CAD	CAD	Engineer 3	Senior Project Engineer - Utilites/Civil	Principal Project Engineer - Rail and Transit/Civil	Engineer 4 - Structural	Principal Engineer - Structural	Principal Engineer - Geotechnical	Cost Estimator	Accounting / Admin	Total Hours	Totals
				$ 295.87	$ 229.45	$ 143.93	$ 117.74	$ 104.16	$ 194.73	$ 277.75	$ 132.84	$ 229.45	$ 255.29	$ 200.46	$ 87.55		
1	**Task 1**	**Project Management and Coordination**															
	1.1	Project Management	$575.00	24					64							88	$19,563.60
	1.2	Project Coordination with MTS		24					64							88	$19,563.60
	1.3	Quality Mangement and Control		6	32				40						80	158	$23,910.82
		Subtotals (Hours) =		54	32				168						80	334	$63,038.02
		Subtotals (Costs) =	$575.00	$15,976.98	$7,342.40				$32,714.64						$7,004.00	**334**	**$63,613.02**
2	**Task 2**	**Outside Agency Coordination and Approvals**															
	2.1	Agency and Stakeholder Coordination		40					120	60						220	$51,867.40
	2.2	As-builts and Document Collection and Review						24	100							124	$21,972.84
		Subtotals (Hours) =		40				24	220	60						344	$73,840.24
		Subtotals (Costs) =		$11,834.80				$2,499.84	$42,840.60	$16,665.00						**344**	**$73,840.24**
3	**Task 3**	**Survey and Geotechnical Engineering**															
	3.1	Survey (Review)		4		24		8	12							48	$7,807.84
	3.2	Geotechnical (Review)							4				16			20	$4,863.56
		Subtotals (Hours) =		4		24		8	16				16			68	$12,671.40
		Subtotals (Costs) =		$1,183.48		$3,454.32		$833.28	$3,115.68				$4,084.64			**68**	**$12,671.40**
4	**Task 4**	**Design, Specifications, and Estimate**															
	4.1	Civil - Roadway+General	$1,575.00	4		40	80	260	140	20						544	$77,833.68
	4.2	Civil - Grading and Drainage				20	20	120	72	24						256	$38,419.16
	4.3	Civil - Erosion						64		32						96	$15,554.24
	4.4	Civil - Utilities				40	60	60	52	8						220	$31,419.16
	4.5	Structural (sign posts/foundations)		4			60		8		120	24				216	$31,253.32
	4.6	Specifications		4					120	16		16	16			172	$36,750.92
	4.7	Cost Estimate		4					80					120		204	$40,817.08
		Subtotals (Hours) =	N/A	16		100	220	504	472	100	120	40	16	120		1,708	$272,047.56
		Subtotals (Costs) =	$1,575.00	$4,733.92		$14,393.00	$25,902.80	$52,496.64	$91,912.56	$27,775.00	$15,940.80	$9,178.00	$4,084.64	$24,055.20		**1,708**	**$272,047.56**
5	**Task 5**	**Construction Procurement Support**															
	5.1	Procurement Support		8		16			40							64	$12,459.04
		Subtotals (Hours) =	N/A	8		16			40							64	$12,459.04
		Subtotals (Costs) =		$2,366.96		$2,302.88			$7,789.20							**64**	**$12,459.04**
		Totals (Summary) =														**2,518**	**$434,631.26**
		Total (Hours) =		122	32	140	220	536	916	160	120	40	32	120	80	2518	
		Total (Costs) =	$2,150.00	$36,096.14	$7,342.40	$20,150.20	$25,902.80	$55,829.76	$178,372.68	$44,440.00	$15,940.80	$9,178.00	$8,169.28	$24,055.20	$7,004.00		$434,631.26
		Percentage of Total (Hours) =	N/A	5%	1%	6%	9%	21%	36%	6%	5%	2%	1%	5%	3%	100%	
		Percentage of Total (Costs) =	0%	8%	2%	5%	6%	13%	41%	10%	4%	2%	2%	6%	2%		100%

Work Order Estimate Summary

Consultant/ Subconsultant: **MOTT MACDONALD GROUP**

Contract No: **G1951.0-17**

Task Order No. **WOA1951-AE-63**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

Attachment: B

TASKS/WBS (1-5)

ODC Item	Description	Unit	Unit Cost	Task 1		Task 2		Task 3		Task 4		Task 5	
				Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	Mileage	1	$0.575	1,000	$575.00					1,000	$575.00		
2	Printing (Hard Copies to City)	1	$1,000.00							1	$1,000.00		
3													
4													
5													
6													
7													
8													
9													
10													
				Subtotal =	**$575.00**	Subtotal =		Subtotal =		Subtotal =	**$1,575.00**	Subtotal =	

TASKS/WBS (6-10)

ODC Item	Description	Task 6										Totals	
		Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	Mileage											**2,000**	**$1,150.00**
2	Printing (Hard Copies to City)											**1**	**$1,000.00**
3													
4													
5													
6													
7													
8													
9													
10													
		Subtotal =		Subtotal =		Subtotal =		Subtotal =		Subtotal =		**Totals =**	**$2,150.00**

Work Order Estimate Summary

Consultant/Subconsultant: **Aguirre & Associates**

MTS Doc. No.: **G1951.0-17**

Work Order No.: **WOA1951-AE-63**

Total Hours = **181**

Total Costs = **$27,692.90**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

Attachment: B

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Chainman (Prevailing Wage) $ 190.67	Party Chief (Prevailing Wage) $ 194.95	Principal Land Surveyor $ 183.38	Project Land Surveyor $ 144.81	Survey Technician $ 100.74	NA $ -	NA $ -	NA $ -	NA $ -	NA $ -	Total Hours	Totals
1	**Task 3**	**Survey**													
		Survey		40	40	4	40	57						181	$27,692.90
		Subtotals (Hours) =	N/A	40	40	4	40	57						181	$27,692.90
		Subtotals (Costs) =		$7,626.80	$7,798.00	$733.52	$5,792.40	$5,742.18						**181**	**$27,692.90**
2															
		Subtotals (Hours) =	N/A												
		Subtotals (Costs) =													
	Totals (Summary) =													**181**	**$27,692.90**
		Total (Hours) =	N/A	40	40	4	40	57						181	
		Total (Costs) =		$7,626.80	$7,798.00	$733.52	$5,792.40	$5,742.18						Total (Labor)	$27,692.90
														Total (ODCs)	
		Percentage of Total (Hours) =	N/A	22%	22%	2%	22%	31%						100%	
		Percentage of Total (Costs) =		28%	28%	3%	21%	21%							100%

Work Order Estimate Summary

Consultant/Subconsultant: **Estrada Land Planning**

MTS Doc. No.: **G1951.0-17**

Work Order No.: **WOA1951-AE-63**

Total Hours = **767**

Total Costs = **$90,802.91**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

Attachment: B

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Principal	Senior Landscape Architect	Senior Landscape Designer	Designer / CADD Specialist										Total Hours	Totals
				$ 237.01	$ 130.33	$ 112.01	$ 74.69											
1	Task 4	Design, Specifications, and Estimate																
	4.1	Civil - Roadway (Review)		25	5	5											35	$7,136.95
	4.2	Landscaping and Irrigation		20	35	80	90										225	$24,984.65
	4.3	Hardscaping		30	68	84	95										277	$32,477.13
	4.4	Specifications		2	44	40	5										91	$11,062.39
	4.5	Cost Estimate		2	4	12	44										62	$5,625.82
		Subtotals (Hours) =	N/A	79	156	221	234										690	$81,286.94
		Subtotals (Costs) =		$18,723.79	$20,331.48	$24,754.21	$17,477.46										**690**	**$81,286.94**
2	Task 5	Construction Procurement Bid Support																
	5.1	Procurement Support		2	35	40											77	$9,515.97
		Subtotals (Hours) =	N/A	2	35	40											77	$9,515.97
		Subtotals (Costs) =		$474.02	$4,561.55	$4,480.40											**77**	**$9,515.97**
		Totals (Summary) =															**Totals =**	**767**	**$90,802.91**
		Total (Hours) =	N/A	81	191	261	234											767
		Total (Costs) =		$19,197.81	$24,893.03	$29,234.61	$17,477.46											˙otal (Labor)	$90,802.91
																		Total (ODCs)	
		Percentage of Total (Hours) =	N/A	11%	25%	34%												69%	
		Percentage of Total (Costs) =		21%	27%	32%													81%

Work Order Estimate Summary

Total Hours = **118**

Total Costs = **$30,397.22**

Consultant/Subconsultant: **Ninyo & Moore Geotechnical & Environmental Sciences Consult**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

MTS

Work

At

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Accounting	Administrative / Word Processor / Office Assistant	Field Tester	GIS Specialist	Inspector	Laboratory Manager	Laboratory Technician	Principal Engineer/Geologist/Environmental Scientist	Project Engineer/Geologist/Environmental Scientist	Senior Engineer/Geologist/Environmental Scientist	Senior Project Engineer/Geologist/Environmental Scientist	Senior Staff Engineer/Geologist/Environmental Scientist	Staff Engineer/Geologist/Environmental Scientist	Technical Illustrator
				$ 74.82	$ 83.73	$ 147.27	$ 121.12	$ 156.33	$ 97.49	$ 61.21	$ 205.86	$ 109.60	$ 151.60	$ 141.46	$ 94.67	$ 78.29	$ 82.96
1	Task 1	Project Management															
		Subtotals (Hours) =	N/A														
		Subtotals (Costs) =															
2	Task 2	Document Reviews and Site Visits															
		Subtotals (Hours) =	N/A														
		Subtotals (Costs) =															
3	Task 3	Survey and Geotech															
		Project Management									4	12			8		
		Permitting with City of San Diego	$2,500.00								4	12				4	4
		Geotechnical Field Exploration and Repaving	$13,788.00			10						20					
		Geotechnical Memo			4						8	12			12		4
		Subtotals (Hours) =	N/A		4	10					16	56			20	4	8
		Subtotals (Costs) =	$16,288.00		$334.92	$1,472.70					$3,293.76	$6,137.60			$1,893.40	$313.16	$663.68
4	Task 4	Design, Specifications, and Estimate															
		4.1 Specifications															
		Subtotals (Hours) =	N/A														
		Subtotals (Costs) =															

Totals (Summary) =							**Totals =**		
Total (Hours) =	N/A	4	10		16	56	20	4	8
Total (Costs) =	$16,288.00	$334.92	$1,472.70		$3,293.76	$6,137.60	$1,893.40	$313.16	$663.68
									T
Percentage of Total (Hours) =	N/A	3%	8%		14%	47%	0.16949153	0.033898305	0.06779661

Work Order Estimate Summary

Consultant/ Subconsultant: **Ninyo & Moore Geotechnical & Environmental Sciences Consultants**

Contract No: **G1951.0-17**

Task Order No. **WOA1951-AE-63**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

Attachment: **B**

Nin

TASKS/WBS (1-5)

ODC Item	Description	Unit	Unit Cost	Task 1		Task 2		Task 3		Task 4		Task 5	
				Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	ROW/TC Permit - City of SD	1	$2,000.00					1	$2,000.00				
2	Traffic Control Plans	2	$250.00					2	$500.00				
3	Traffic Control	1	$2,000.00					1	$2,000.00				
4	Laboratory Testing	1	$1,125.00					1	$1,125.00				
5	Repaving	1	$10,000.00					1	$10,000.00				
6	TPH	3	$61.00					3	$183.00				
7	VOC+ Oxys	3	$77.00					3	$231.00				
8	Title 22 Metals	3	$83.00					3	$249.00				
9													
10													
				Subtotal =		Subtotal =		Subtotal =	**$16,288.00**	Subtotal =		Subtotal =	

TASKS/WBS (6-10)

ODC Item	Description	Task 6										Totals	
		Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total	Quantity	Total
1	ROW/TC Permit - City of SD											**1**	**$2,000.00**
2	Traffic Control Plans											**2**	**$500.00**
3	Traffic Control											**1**	**$2,000.00**
4	Laboratory Testing											**1**	**$1,125.00**
5	Repaving											**1**	**$10,000.00**
6	TPH											**3**	**$183.00**
7	VOC+ Oxys											**3**	**$231.00**
8	Title 22 Metals											**3**	**$249.00**
9													
10													
		Subtotal =		Subtotal =		Subtotal =		Subtotal =		Subtotal =		**Totals =**	**$16,288.00**

Work Order Estimate Summary

Consultant/Subconsultant: **STC Traffic**

MTS Doc. No.: **G1951.0-17**

Work Order No.: **WOA1951-AE-63**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

Attachment: **B**

Total Hours = **540**

Total Costs = **$80,240.00**

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Principal / QAQC Manager $ 200.00	Project Manager $ 160.00	Project Engineer $ 140.00						Total Hours	Totals
		Project Mangement											
1													
		Subtotals (Hours) =	N/A										
		Subtotals (Costs) =											
	Task 4	**Design, Specifications, and Estimate**											
2	Task 4.1	Project Management, Meetings, and Coordination		6	28							34	$5,680.00
2	Task 4.2	Traffic Signal Plans		3	10	40						53	$7,800.00
2	Task 4.3	Traffic Signal Modification Plans		12	32	140						184	$27,120.00
2	Task 4.4	Signing and Striping Plans		4	8	40						52	$7,680.00
2	Task 4.5	Traffic Control		4	8	80						92	$13,280.00
2	Task 4.6	Street Light Plans		4	8	80						92	$13,280.00
2	Task 4.7	Special Provisions		3	30							33	$5,400.00
		Subtotals (Hours) =	N/A	36	124	380						540	$80,240.00
		Subtotals (Costs) =		$7,200.00	$19,840.00	$53,200.00						**540**	**$80,240.00**
		Totals (Summary) =										**540**	**$80,240.00**
		Total (Hours) =	N/A	36	124	380						540	
		Total (Costs) =		$7,200.00	$19,840.00	$53,200.00						ˈotal (Labor)	$80,240.00
												Total (ODCs)	
		Percentage of Total (Hours) =	N/A	7%	23%	70%						100%	
		Percentage of Total (Costs) =		9%	25%	66%							100%

Work Order Estimate Summary

Consultant/Subconsultant: **Fehr & Peers**

MTS Doc. No.: **G1951.0-17**

Work Order No.: **WOA1951-AE-63**

Total Hours = **658**

Total Costs = **$85,942.20**

Work Order Title: **America Plaza/Santa Fe Depot Pedestrian Enhancements Final Design**

tachment: **B**

Item	TASKS/WBS	TASKS/WBS Description	ODCs (See Attachment)	Contract Manager	Work Order Manager	Principal	Senior Planner III	Engineer II	Accounting/ Admin	Total Hours	Totals
					$ 135.76	$ 291.96	$ 163.52	$ 108.77	$ 85.63		
1	**Task 4**	**Designs, Specifications and Estimate**									
	Task 4.1. Signage Location Layouts				48	6	30	96	12	192	$24,643.32
	Task 4.2. Wayfinding Design Plans (60%, 90%, 100%)				60	8	96	210	14	388	$50,219.72
	Task 4.3. Technical Specifications				8	2	8	10	2	30	$4,237.12
	Task 4.4. Engineer's Opinion of Probable Construction Costs (EOPCC)				8	2	8	12	2	32	$4,454.66
		Subtotals (Hours) =	N/A		124	18	142	328	30	642	$83,554.82
		Subtotals (Costs) =			$16,834.24	$5,255.28	$23,219.84	$35,676.56	$2,568.90	**642**	**$83,554.82**
2	**Task 5**	**Construction Procurement Bid Support**									
					4	2	4	4	2	16	$2,387.38
		Subtotals (Hours) =	N/A		4	2	4	4	2	16	$2,387.38
		Subtotals (Costs) =			$543.04	$583.92	$654.08	$435.08	$171.26	**16**	**$2,387.38**

Metropolitan Transit System

1255 Imperial Avenue, Suite 1000
San Diego, CA 92101-7490
(619) 231-1466 • FAX (619) 234-3407

Agenda Item No. 15

MEETING OF THE SAN DIEGO METROPOLITAN TRANSIT SYSTEM
BOARD OF DIRECTORS

February 11, 2021

Draft for Executive Committee Review Date: 2/4/2021

SUBJECT:

INVESTMENT REPORT – QUARTER ENDING DECEMBER 31, 2020

INFORMATIONAL ONLY

Budget Impact

None.

DISCUSSION:

Attachment A comprises a report of the San Diego Metropolitan Transit System (MTS) investments as of December 31, 2020. The combined total of all investments has increased quarter to quarter from $173.9 million to $174.1 million. This slight increase is attributable to $36.8 million in Federal Transit Administration (FTA) Coronavirus Aid, Relief, and Economic Security (CARES) Act revenue, $13.4 million in FTA revenue for capital purchases, partially offset by $41.1 million in capital expenditures, $3.0 million in debt service payments pertaining to the Pension Obligation Bonds, as well as normal timing differences in other payments and receipts.

The first column provides details about investments restricted for capital improvement projects. The second column, unrestricted investments, reports the working capital for MTS operations allowing payments for employee payroll and vendors' goods and services.

MTS remains in compliance with Board Policy 30 and is able to meet expenditure requirements for a minimum of the next six months as required.

/s/ Sharon Cooney
Sharon Cooney
Chief Executive Officer

Key Staff Contact: Julia Tuer, 619.557.4515, julia.tuer@sdmts.com

Attachment: A. Investment Report for the Quarter Ending December 31, 2020.

San Diego Metropolitan Transit System
Investment Report
December 31, 2020

Institution / Issuer	Function	Investment Type	Restricted	Unrestricted	Total	Avg. Rate of Return		Benchmark
J.P. Morgan Chase	Operating Funds	Depository Bank	-	31,627,644	31,627,644	0.02%	*	0.100% WSJ Money Market
U.S. Bank - Retention Trust Account	Restricted for Capital Support	Depository Bank	8,512,914	-	8,512,914	N/A	**	-
San Diego County Treasurer's Office	Prop 1B TSGP Grant Funds	Investment Pool	20,696,620	-	20,696,620	0.905%		0.418% S&P US T-Bill 0-3 Mth Index
Subtotal: Restricted for Capital Support			**29,209,534**	-	**29,209,534**			
Local Agency Investment Fund (LAIF)	Investment of Surplus Funds	Investment Pool	-	71,670,676	71,670,676	0.540%		0.418% S&P US T-Bill 0-3 Mth Index
San Diego County Treasurer's Office	Investment of Surplus Funds	Investment Pool	-	41,578,857	41,578,857	0.905%		0.418% S&P US T-Bill 0-3 Mth Index
Subtotal: Investment Surplus Funds			-	**113,249,533**	**113,249,533**			
Grand Total Cash and Investments			**$ 29,209,534**	**$ 144,877,177**	**$ 174,086,711**			

*-The .02% is an annual percentage yield on the average daily balance that exceeds $30 million
** - Per trust agreements, interest earned on retention account is allocated to trust beneficiary (contractor)