

Advanced Project Planning Report Microtransit Pilot

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Department of Transportation Services

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Revisions

Modification to this document will be made to conform to evolving fleet retirement and expansion needs. As major revisions occur, the entire plan will be reproduced, bound, and distributed. For minor revisions, only the affected pages will be issued. All minor revisions will be dated and signed by the City and County of Honolulu Department of Transportation Services in accordance with the applicable standard operating procedures.

DOCUMENT CHANGE HISTORY				
REVISION	DATE	SECTION(S)	DESCRIPTION	DTS REVIEWER
0.1.0	6/14/21	–	Initial Issue	Chris Clark
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Acronyms

ADA	Americans with Disabilities Act of 1990
ADAAG	Americans with Disabilities Act Accessibility Guidelines
BFMP	Bus Fleet Management Plan
CD	Clean Diesel
CIP	Capital Improvement Program (City and County of Honolulu)
City	City and County of Honolulu
DTS	City and County of Honolulu, Department of Transportation Services
EIS	Environmental Impact Statement
FEIS	Final Environmental Impact Statement
FGM	Fixed Guideway Modernization
FTA	United States Department of Transportation, Federal Transit Administration
FY	Fiscal Year (City and County of Honolulu Fiscal Year runs from July 1 to June 30)
GEC	General Engineering Consultant
GO	General Obligation
GOP	General Operating Procedure
GTFS	General Transit Feed Specification
HART	Honolulu Authority for Rapid Transportation
H RTP	Honolulu Rail Transit Project
KPI	Key Performance Indicator
Makai	Toward the Sea
Mauka	Toward the Mountains
NTD	National Transit Database
OP37	Federal Transit Administration Oversight Procedure 37
OTS	Oahu Transit Services, Inc.
RFMP	Rail Fleet Management Plan (developed as a separate document)
ROC	Rail Operations Center
RY	Reporting Year (relating to National Transit Database RY is the City's FY)
SGR	State of Good Repair
TAM	Transportation Asset Management Plan
TMD	City and County of Honolulu, Department of Transportation Services, Transportation Mobility Division (formerly the Public Transit Division)
TOD	Transit Oriented Development
TNC	Transportation Network Companies
ULB	Useful Life Benchmark
UPASS	University Student Discount Bus Pass
VMP	Vehicle Maintenance Plan (DTS/OTS)

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1 Purpose

The City and County of Honolulu Department of Transportation Services (DTS) has developed this Advanced Project Planning Report (APPR) to evaluate potential operational service changes in Honolulu. This APPR is a preliminary evaluation conducted within a study area to identify the potential benefits, impacts, and areas of concern to the human and natural environment by the potential transportation improvement project. The project's focus is to evaluate the business case of demand responsive transport. This transit service offers a highly flexible routing and/or highly flexible scheduling of vehicles shared with other passengers. Microtransit providers build routes ad-hoc exclusively so as to only match each demand (trip) and supply (driven vehicle) and extend the efficiency and accessibility of the transit service. Possible pick-up/drop-off stops are restricted (usually within a geofenced area), and transit can be provided either as a stop-to-stop service or curb-to-curb service.

The APPR should not be considered a design document, and would not supersede the required public input, analysis, and approvals required in the Hawaii Environmental Policy Act (HEPA) or National Environmental Policy Act (NEPA). Any design information contained in the APPR is intended to analyze potential project impacts based on the suggested alternatives. The selected alternatives provide the ability to fulfill the project's identified purpose and need. When provided, local designed preferences are also included in the APPR. This report was not funded through grants from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation although discretionary funding for operations may be sought at a later time. The views and opinions of the agency expressed herein do not necessarily state or reflect those of the U.S. Department of Transportation.

The purpose of this APPR is to serve as the Concept Definition Report and to document technical scoping in preparation for operations. The APPR is not meant to solicit public comment or conduct formal consultation, but consists of preliminary evaluation conducted within a study area to identify the potential benefits, impacts, and areas of concern to the human and natural environment by the potential transportation improvement project.

Purpose

The purpose of the Microtransit Pilot are similar to the goals of public transit as a whole.

- **Improve operational efficiency:** increase ridership while reducing operating costs through the enhanced use of existing transportation systems.
- **Jurisdictional equity:** ensure traditionally underserved communities have access to reliable and frequent public transit service.
- **Expanding Economic Opportunity:** provide access to employment opportunities for socio-economically disadvantaged populations.
- **Better Data:** Collect, disseminate, and use of real time transportation related information to improve mobility, and provide for more efficient and accessible transportation.

Need

- Meet the rapidly growing needs of the region's future residents and workers by increasing mobility, access, and transportation capacity to and from regional growth and activity centers to the rest of the region, as called for in the region's adopted plans, including the 2045 Oahu Regional Transportation Plan, as well as related City and County plans.

- Address the problems of increasing and unreliable and uncompetitive travel times for transit users.
- Reduce underproductive routes with high cost per rider.

Objectives

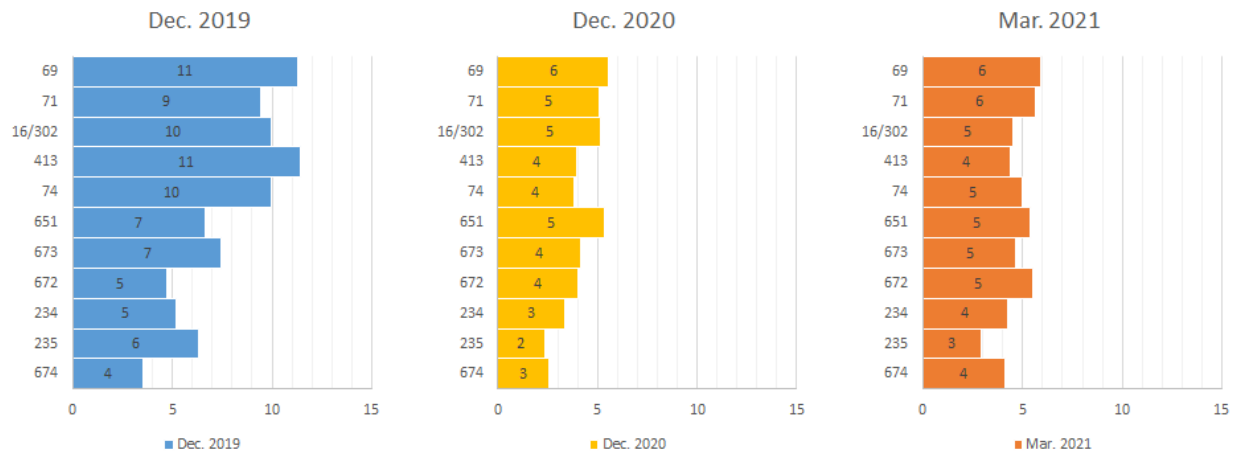
- Test the impact of a Microtransit service through a short-term pilot model.
- Test the applicability of the pilot project model to several use cases.
- Better understand demand and willingness of the public to use a rideshare service.
- Acquire data to allow for detailed analysis of service performance and opportunities for improvements.
- Scale successful pilots to improve alternative transportation options compared to personal vehicles or traditional single occupancy transportation networking companies through competitive or reduced travel times, convenience, cost effectiveness and improved overall trip experience

2 Comparative Analysis

Productivity

The systemwide average for fixed-route service is 44 passengers per revenue hour. However, underproductive routes can perform much worse. Figure 1 shows the passenger per revenue hour for the bottom 10 performing routes (excluding peak express routes).

Figure 1. Passengers per Revenue Hour



Cost per passenger

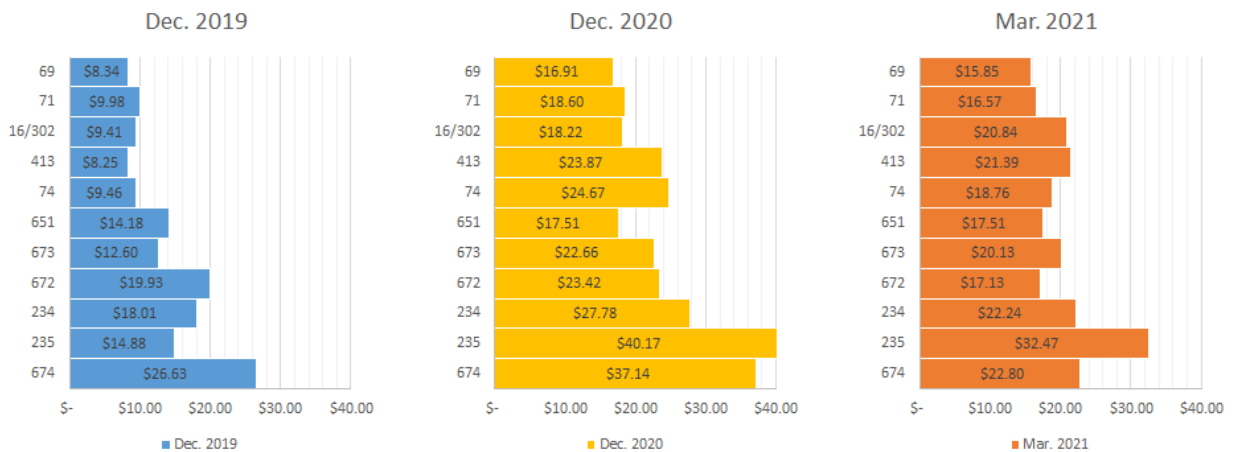
Overall fixed route bus service is comparatively more productive than the existing ADA paratransit demand response service.

Table 1: City and County of Honolulu operating cost per unlinked passenger trip (NTD 2019)

Mode	Cost per trip
Demand Response	\$44.40
Demand Response - Taxi	\$31.31
Bus	\$3.34
Vanpool	\$3.72

Since the cost to operate fixed route service increases proportionally to the level of service (frequency), it’s possible to estimate the cost per passenger trip by assuming a fixed operating cost per revenue hour. Figure 2 estimates cost per passenger for the bottom 10 performing routes (excluding peak express routes), assuming \$94 per revenue hour for all periods.

Figure 2. Cost per Passenger



3 Suitability Analysis

A Suitability Analysis was prepared to qualify, compare, and rank candidate Microtransit Pilot areas based on how closely they adhere to selection criteria.

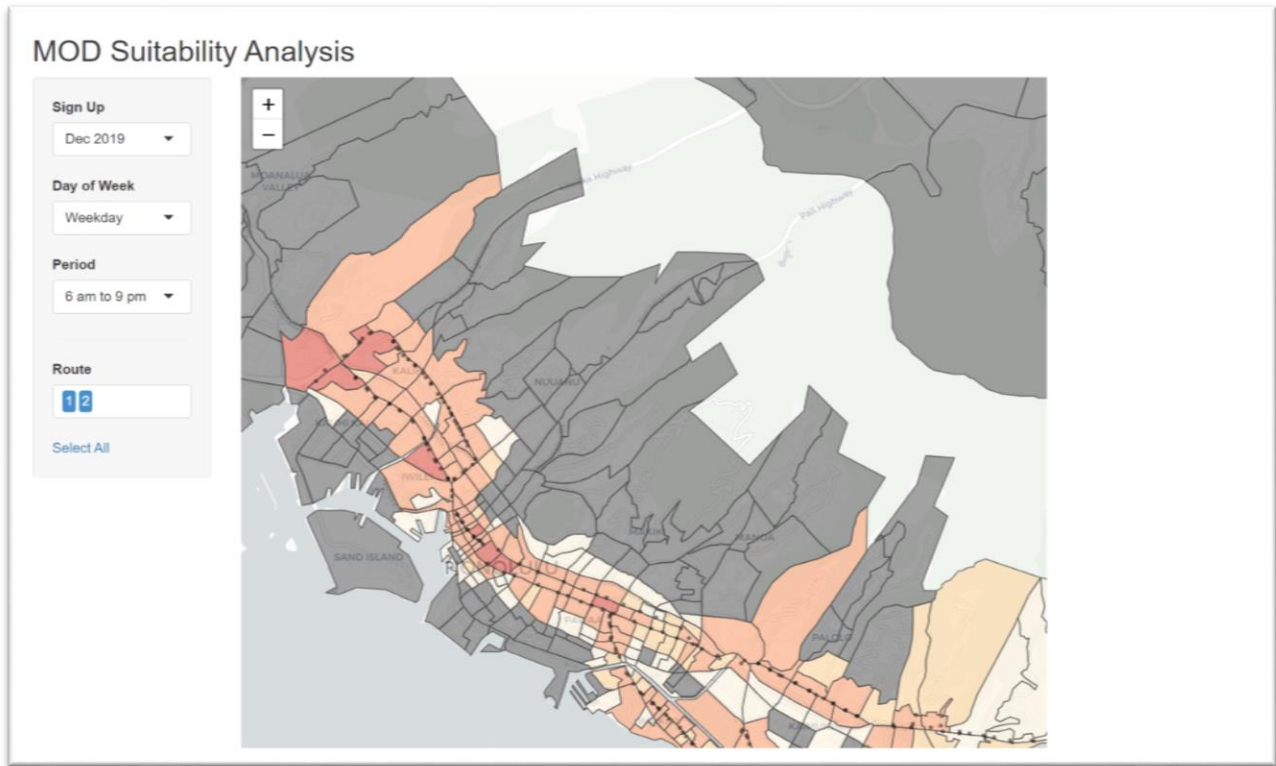
Selection Criteria

Selection criteria were developed to evaluate the potential for a successful microtransit pilot.

Route productivity

Route productivity was measured by Boardings per Revenue Hour. An interactive tool¹ was developed to assess the combined route productivity for various combinations of “Routes,” “Day of Week,” and “Periods.” Both the pre- and during- pandemic conditions were considered in the analysis. A screenshot of this tool is found below.

Figure 3. Interactive Route Productivity Tool



Legend	Boardings per Revenue Hour
Very Low	0-5
Low	5-10
Medium	10-50
High	>50

Route productivity was calculated by aggregating the combined route-level ridership to the Traffic Analysis Zone (TAZ) level, then normalizing by the total revenue hours.

¹ https://mikemotoki.shinyapps.io/Ridership_by_TAZ/

Socioeconomic Variables

- **Population density** was grouped into low, medium, and high categories based on the distribution of population density throughout the island.
- **Employment density** was grouped into low, medium, and high categories based on the distribution of employment density throughout the island.
- **Title VI and Environmental Justice (T6/EJ)** is based on the current OahuMPO definitions for historically minority and low income populations (respectively).

Physical and Environmental Conditions

- **Sidewalk Condition** is based on width and the presence of obstructions.
 - Good = 5' to 10'.
 - Moderate = 5' to 10' with obstructions.
 - Poor = Less than 5'.
 - None = paved sidewalks do not exist.
- **Terrain** is based on ground surface slope estimates based on Esri's digital terrain model (DTM).

Maps of socioeconomic variables, physical and environmental conditions can be found in Appendix A.

Potential Zones

The following zones were considered based on discussions with DTS staff on _____.

- Ewa Beach - Phase 1 (Iroquois Point)
- Ewa Beach - Phase 2
- Kailua
- Kapolei Phase 1 (Kalaeloa)
- Kapolei Phase 2
- Mililani
- Moanalua
- Papakolea
- Wahiawa
- Waialae Iki

Results

Table 2. Suitability Analysis Results

Zone	Route(s)	Route Productivity	T6/EJ	Population Density	Employment Density	Terrain	Good Sidewalks
Ewa Beach - Phase 1 (Iroquois Point)	44	Medium	Both	Medium	Low	Nearly Level	Missing / Poor
Ewa Beach - Phase 2 (Iroquois to Waipahu)	41, 42, 44	Medium	Both	Medium	Low	Nearly Level	Missing / Poor
Kailua	671, 672, 673, 674	Low	T6 (Race)	Low	Low	Nearly Level	Missing / Poor
Kapolei Phase 1 (Kalaeloa)	415	Low	Both	Low	Low	Nearly Level	Good
Kapolei Phase 2	41, 415	Low	Both	Low	Low	Nearly Level	Good
Mililani	501, 503, 504	Low	Both	Low	Low	Gently Sloping	Poor
Moanalua	32, 301, 302	Low	Both	Low	Low	Strongly Sloping	Poor
Papakolea	15	Very Low	Both	Medium	High	Moderately Steep	Missing
Wahiawa	51, 511, 512	Low	Both	Low	Low	Gently Sloping	Missing / Poor
Waialae Iki	234, 235	Very Low	Neither	Low	Medium	Moderately Steep	Poor

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4 Pilot Selection and Description

Following discussions with DTS staff, pilot candidates were identified.

1. Kapolei – Phase 1: a replacement of Route 415 during the base periods. Service may be expanded eastward to include Ka Makana Alii and the East Kapolei Rail Station during a later phase.
2. Ewa Beach – Phase 1: new service to Iroquois Point, which is intended to enable connections to the existing fixed-route corridor on Fort Weaver Road, and to satisfy local internal-Ewa trips. Service may be expanded northward to include the rest of Ewa and the West Loch Rail Station during a later phase.
3. Moanalua: a replacement of Route 16 and parts of Route 32 along Ala Napunani Street.
4. Papakolea: a supplemental microtransit service to complement the service area of Route 15.

Existing Service Characteristics

Table 3. Existing Service Characteristics of Pilot Areas

Pilot Area	Affected Routes	Revenue Hours	Span of Service	Vehicle Assignment	Annual Cost to Operate
Kapolei – Phase 1	415	5.5	9:00 am to 2:30 pm	One 40' low floor diesel vehicle	\$130,000.00
Ewa Beach – Phase 1	44	7	4:30 am to 12:30 am	Three to four 40' low floor diesel vehicle	\$170,000.00
Moanalua	16, 32	1.5	5:45 am to 6:45 am, 5:40 pm to 6:10 pm	One 40' low floor diesel vehicle	\$40,000.00
Papakolea	15	21	6:00 am to 9:00 pm	Two to three 30' low floor diesel vehicle	\$510,000.00

Proposed Service Characteristics

Table 4. Proposed Service Characteristics of Pilot Areas

Pilot Area	Service Area ²	Span of Service	Fleet
Kapolei – Phase 1	Generally, constrained to the alignment of Route 415.	9:00 am to 2:30 pm	Fleet size is to be determined by offeror simulation results. The
Ewa Beach – Phase 1	Existing bus stops in the area bounded by Keoneula Blvd, Kapolei Pkwy, Papipi Rd, Pohakupuna Rd, Fort Weaver Rd, North Road,	4:30 am to 12:30 am	

² Maps of the Proposed Pilot Zones can be found in Appendix A

	and internal streets within Kapilina Beach Homes and Ocean Point, which are TBD.		potential to use DTS provided Handi-Vans is being considered.
Moanalua	Existing bus stops in Moanalua Valley, Moanalua, and on Likini Street, Ala Liliko'i and Ala Ilima Street.	5:45 am to 6:30 pm	
Papakolea	Generally, constrained to the alignment of Route 15.	6:00 am to 9:00 pm	

Technology Platform and Accessibility

It's anticipated that the pilot will integrate with the HOLO fare payment system.

1. What technology platform will enable the On-Demand service component of the Pilot? The provider to provide.
2. Is the technology capable of providing a fully automated scheduling, dispatching, and reservation system for a demand responsive service?
3. How will the platform handle fare collection, particularly cash fares? Would the system be able to integrate with the HOLO fare payment systems and allow different fare categories (i.e., senior fare, student fare)?
4. How would the service accommodate limited mobility residents, such as seniors or physically impaired users? (Need to determine if equivalent accommodation is allowed)
5. How would the service accommodate unbanked users?
6. How would the service accommodate users who do not have a Smartphone or data plan?

Measures of Success

- Ridership statistics - Number of trips, travel and wait times, trip denial rate, booking abandonment rates, percentage of time headways are met
- KPI - Cost per passenger, vehicle performance and schedule reliability, calls for customer service

5 Project Management

Stakeholder List

Kapolei

- Hawaii Community Development Authority
- Kumuhonua Transitional Living Center (HCAP)
- U.S.VETS Kama'okū Kauhale
- Hawaii National Guard Youth Challenge Academy
- Kapolei High School
- Council Member Andria Tupola

Ewa Beach

- Kapilina Beach Homes Association - GM Christine
- Council Member Augie Tulba

- Council Member Andria Tupola

Moanalua

- Kaiser Permanente Moanalua Medical Center
- Moanalua Golf Club
- The Plaza Assisted Living at Moanalua
- Moanalua High School
- Honolulu County Club
- Council Member Radiant Cordero
- Council Member Carol Fukunaga

Papakolea

- Papakōlea Community Development Corporation
- Council Member Carol Fukunaga
- Council Member Calvin Say

Roles and Responsibilities (responsible, accountable, consulted, and informed)

Table 5. Responsible, accountable, consulted, and informed matrix.

Phase	DTS-Admin	TMD	TPD	OTS	Provider
Service Planning	A	C	R	C	C
Procurement	A	R	-	R	-
Operations	I	A	-	?	R
Monitoring and Eval.	A	C	C	C	R

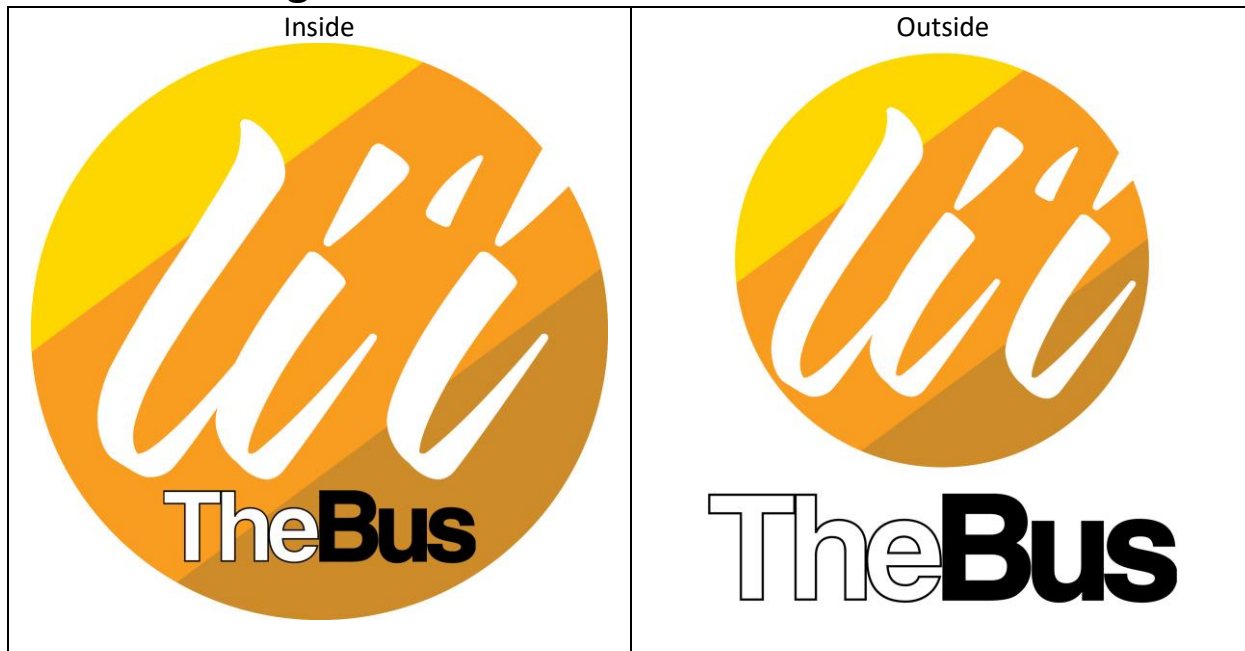
Staffing

The overall City project manager for this project is Jon Nouchi.

Table 6. Staffing assignments

Entity	Person
DTS-Admin	Jon Nouchi
TMD	Jay Egusa, Maria De Masa
TPD	Michael Motoki
Others	BFS, MD, COR
OTS	TBD
Provider	TBD

6 Marketing and Promotions



7 Next Steps

Item	Activity	Task	Subtask	Task Owner	Duration	Start	Finish	Plan	Actual	Variance	Status
1	Microtransit	Solicitation Process	Market Engagement/Research	DTS	92	6/30/2021	9/30/2021	0%	0%	0%	Open
2	Microtransit	Solicit.Contents	Term of Contract	DTS	13	9/14/2021	9/27/2021	0%	0%	0%	Open
3	Microtransit	Solicit.Contents	Special Provisions	DTS	13	9/14/2021	9/27/2021	0%	0%	0%	Open
4	Microtransit	Solicit.Contents	Bid Sheet	DTS	13	9/14/2021	9/27/2021	0%	0%	0%	Open
5	Microtransit	Review / Approvals	AV - Budget Identification	BFS/MD	31	10/17/2021	11/17/2021	0%	0%	0%	Open
5	Microtransit	Review / Approvals	M4	BFS/MD	30	11/17/2021	12/17/2021	0%	0%	0%	Open
5	Microtransit	Review / Approvals	RQS - C2HeRPS Initiation, expediting, tracking	BFS/MD	13	12/17/2021	12/30/2021	0%	0%	0%	Open
6	Microtransit	Review / Approvals	RQS - C2HeRPS Completion/Approval	BFS/MD	0	12/30/2021	12/30/2021	0%	0%	0%	Open
7	Microtransit	Review / Approvals	Procurement Plan Decision Memo & PPTX	DTS	64	9/14/2021	11/17/2021	0%	0%	0%	Open
8	Microtransit	Review / Approvals	Decision Memo & Dir. Approval	DTS	34	10/14/2021	11/17/2021	0%	0%	0%	Open
8	Microtransit	Solicit.Contents	General Instruction /Special Instructions to Bidders	DTS	5	9/3/2021	9/8/2021	0%	0%	0%	Open
9	Microtransit	Solicit.Contents	Scope of Work/Special Provisions - Exhibits to the RFP	DTS	10	9/8/2021	9/18/2021	0%	0%	0%	Open
12	Microtransit	Solicit.Contents	Draft Final Solicit.Instructions to Offerors - inclusive for review by internal / stakeholders	DTS	34	9/21/2021	10/25/2021	0%	0%	0%	Open
9	Microtransit	Solicit.Contents	Final Solicit.Instructions to Offerors - inclusive for review by internal / stakeholders	DTS	13	10/25/2021	11/7/2021	0%	0%	0%	Open
44	Microtransit	Solicit.Contents	Final Solicit.Instructions to Offerors - inclusive for review by internal / stakeholders	BFS	38	11/7/2021	12/15/2021	0%	0%	0%	Open
20	Microtransit	Solicitation Process	Public Release of Solicitation (Public Notice)	PUR	31	1/15/2022	2/15/2022	0%	0%	0%	Open
21	Microtransit	Solicitation Process	Pre-Proposal/Bid Conference	PUR/DTS	1	1/30/2022	1/31/2022	0%	0%	0%	Open
22	Microtransit	Solicitation Process	Final Date for Requests for Clarifications/Requests for Substitutions	OFFEROR	1	2/5/2022	2/6/2022	0%	0%	0%	Open
23	Microtransit	Solicitation Process	Final Addendum Released	PUR/DTS	3	2/6/2022	2/9/2022	0%	0%	0%	Open
24	Microtransit	Solicitation Process	Bond Due	OFFEROR	3	2/12/2022	2/12/2022	0%	0%	0%	Open
25	Microtransit	Solicitation Process	Proposal Due Date	OFFEROR	0	2/15/2022	2/15/2022	0%	0%	0%	Open
16	Microtransit	Solicitation Process	Responsiveness Check / Pass-Fail Check (as req'd)	PUR	4	2/15/2022	2/19/2022	0%	0%	0%	Open
27	Microtransit	Solicitation Process	Award - Public Notice	PUR	4	2/19/2022	2/23/2022	0%	0%	0%	Open
28	Microtransit	Solicitation Process	Award Letter sent	PUR	4	2/23/2022	2/27/2022	0%	0%	0%	Open
29	Microtransit	Solicitation Process	Non-Award Letter(s) sent	PUR	4	2/27/2022	3/3/2022	0%	0%	0%	Open
30	Microtransit	Solicitation Process	Debrief of non-selected offerors	PUR/DTS	14	3/3/2022	3/17/2022	0%	0%	0%	Open
31	Microtransit	Solicitation Process	Protest Period - Final	PUR/DTS	7	3/17/2022	3/24/2022	0%	0%	0%	Open
32	Microtransit	Review / Approvals	Contract sent to COR for Legality & Form	PUR	7	3/24/2022	3/31/2022	0%	0%	0%	Open
33	Microtransit	Review / Approvals	Contract sent to Contractor for Execution	PUR	30	3/31/2022	4/30/2022	0%	0%	0%	Open
34	Microtransit	Review / Approvals	Contract sent to CPO [BFS Director] for execution	PUR	30	4/30/2022	5/30/2022	0%	0%	0%	Open
35	Microtransit	Review / Approvals	Notice to Proceed	DTS	10	5/30/2022	6/9/2022	0%	0%	0%	Open
36	Microtransit	AAR	After Action Review (AAR)	All	364	7/1/2022	6/30/2023	0%	0%	0%	Open
37	Microtransit	AAR	KPI Management	DTS	364	7/1/2022	6/30/2023	0%	0%	0%	Open
35	Microtransit	AAR	Pilot Evaluation / Scaleability	DTS	87	1/2/2023	3/30/2023	0%	0%	0%	Open
					334			0%	0%	0%	
		Solicit.Contents						0%			
		Solicitation Process						0%			
		Review / Approvals						0%			
Task Owner:											
BFS/MD	Budget and Fiscal Service and Managing Director Approval role										
ADM	Administrative policy decision										
CPO	Chief Procurement Officer (Director of BFS)										
PUR	Purchasing (Buyer to be ID'd when we route RQS)										
PUR/DTS	Dual Responsibility										
OFFEROR	Offeror										

Appendix A Results of the Suitability Analysis