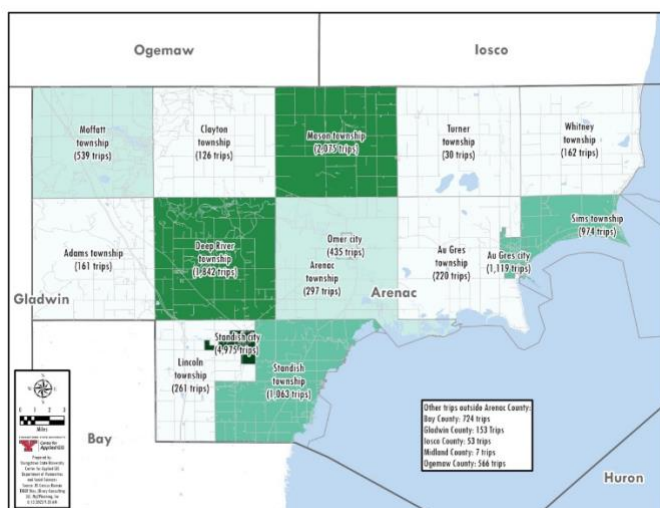




Final Report

TRANSPORTATION NEEDS STUDY AND SERVICE PLAN



Submitted to: Arenac
Public Transit Authority

Submitted by:
Mp2planning, LLC

October, 2023

Table of Contents

1. INTRODUCTION	1
2. DATA COLLECTION	3
Background	3
Operations	3
Staff	4
Operations support systems	4
Funding	4
Local Revenues	5
3. PUBLIC OUTREACH AND SURVEYS.....	11
Surveys.....	11
Mailback Survey	11
General Public Survey	15
4. FUTURE SERVICE DESIGN AND COST EVALUATION.....	17
Cost Determination	17
Service Options and Cost Evaluation Per Option	17
Operational Cost Saving Options.....	24
Recommendations	25
5. MOVING FORWARD	27
Dispatch Software	27
Facility Needs	28

1. INTRODUCTION

Arenac Public Transit Authority (APTA) conducted a Transportation Needs Study and Service Plan with funding from the Michigan Department of Transportation. The study was conducted by Mp2planning working with APTA staff.

The Arenac Public Transit Authority is a county-based bus system operating primarily in the Arenac County. APTA is a 196 Authority created by Arenac County in 2020. Public transportation services were provided in Arenac County via Bay Metro Transit in Bay City, MI for approximately 20 years, then transitioned to Arenac County in 2019. Arenac County operated the service from FY 2019 to FY 2021, and formed APTA and passed a millage in FY2020. APTA began service in FY 2021. Arenac County currently collects the millage (.6 which generates approximately \$368,000) and passes it through to APTA. APTA will need to seek a millage renewal/increase on its own in 2024.

The APTA buses are operated on a demand response basis: a person calls APTA to make a ride request and the trip is scheduled. APTA currently has no route service, though they do offer prior scheduled on-demand service. They also offer out of county service via connection with the public transit providers in Bay, Iosco, Ogemaw, and Gladwin Counties.

Figure 1 presents the project schedule.

Figure 1
Project Schedule

Task *	January	February	March/April	May	June - Oct
1. Data Collection			TM		
2. Surveys					
3. Summation of Existing Conditions and Future Demand				TM	
4. Future Service Design and Cost Evaluation				TM	
5. Draft and Final Report				DRAFT	FINAL
Meetings	Staff***	Staff	Staff	Staff/Board	County

*TM - Technical Memorandum

**May be extended depending on client review and public engagement needs

***Staff meetings may be held by zoom/conference call or in person

2. DATA COLLECTION

Background

Arenac Public Transit Authority was originally formed in FY2020-FY2021 by the Arenac County Board of Commissioners. As outlined above, public transit service was provided in Arenac County for approximately 20 years via Bay Metro Transit in Bay City, and then by Arenac County. From 2001 to 2018, Bay Metro provided 838,477 trips for an average of 46,582 trips per year. Ridership under Arenac County Transit experienced a reduction due to COVID and totaled 44,282 passengers over the 3 fiscal years of service after transitioning from Bay Metro. APTA's first year in operation saw a total ridership of 17,117.

Operations

Arenac Public Transit Authority (APTA) provides demand response service in Arenac County. They have a computerized dispatch system (PCTrans) but relay rider information and trip manifests by radio and paper respectively. APTA is seeking funding for mobile tablets which will be installed on all vehicles and interact with the computerized dispatch system. This will reduce the need for radio communications and eliminate paperwork for the vehicle operators.

APTA operates from 6:00 a.m. to 7:00 p.m. Monday through Friday. APTA is open Saturday from 9:00 a.m. to 5:00 p.m. Evening service or after-hours service is not offered at present. APTA is public transportation authority and is governed by a board of seven members. APTA's Director reports to the APTA board.

Facility

APTA does not have a facility. They currently lease space and operate out of Twining, MI at present. They have on-site fueling, but no inside bus storage. APTA's future plans include securing funding for a new facility.

Vehicles

APTA operates a fleet of 9 vehicles: 2 Medium Duty Buses, 2 Light Duty Cutaway buses, 2 Vans, 1 Minivan, and 2 SUV's. A breakdown of the vehicle inventory follows in Table 1.

Table 1: APTA Vehicle Fleet

Vehicle Type	Year	Seats	# of Wheelchair placements	Mileage	Vehicle Length
Medium Duty Bus	2019	22	1	34,681	30'
Medium Duty Bus	2019	22	1	39,768	29'
Light Duty Cutaway*	2020	14	3	59,341	22'
Light Duty Cutaway*	2020	14	3	63,723	22'
Van	2020	7	2	104,944	12'
Van	2019	7	2	91,771	12'
SUV	2020	5	0	41,243	15'
SUV	2020	5	0	36,556	15'
Minivan	2019	5	1	62,636	12'

Source: JDrury Consulting, LLC

*Light Duty Cutaway buses have a 5-year service life, however MDOT's database shows Arenac's at a 7 year service life.

Medium Duty Buses and Light Duty Cutaways have a service life of 7 years and/or 200,000 miles. Vans, minivans, and SUV's have a service life of 4 years and/or 100,000 miles. APTA's buses are stored outside at the transit facility.

Staff

APTA has 19 employees, 10 of whom are full time. Staff includes the Executive Director, Operations Manager, 2 dispatchers and 15 drivers. All staff are employees of the Authority. APTA does not have a maintenance staff. All vehicles are presently maintained at outside maintenance facilities.

Operations support systems

APTA uses a computer-based dispatch software system (PCTrans). All demand response pickups are telephone call based and recorded in the system and sent to drivers via radio. Any pre-scheduled trips are on drivers' paper manifests as they begin their day.

Funding

APTA receives its operational funding from a mix of state, federal, and local dollars. State Operating Assistance (Local Bus Operating or LBO) is set by legislative appropriation each year and is determined by the eligible budgeted expenses for all the transit agencies in the State. The percentage fluctuates from year to year, so a specific,

set percentage is not available. LBO is normally 35-45% of eligible expenses. The current fiscal year funding (FY 2023) is 34.5849% of eligible expenses.

Federal operating funding (due to COVID) has increased from the historical standard of 18% of eligible expenses to 36-40% over the past several years. Current Fiscal Year reimbursement rate for Federal Section 5311 is 36% of eligible expenses. Fiscal year 2023 is the last year of increased COVID ARPA allocation, so federal funding will likely decrease back to 18% of eligible expenses in Fiscal Year 2024. Federal Section 5311 funding is based on federal budget allocations to the state. In the current fiscal year, APTA will receive 70.5849% of its eligible expenses. The remaining 29.4151% will come from local millage/contracts, and farebox to balance the budget.

Local Revenues

APTA has a millage of .6 of a mil, which generates approximately \$350,000 in local funding. Farebox revenue averaged \$15,714 over the last four years (between Arenac County Transit and APTA). APTA projects farebox revenue at \$25,000 for the current year and \$38,000 for FY 2024.

Fares

Fares are based on one-way trips. Fares are summarized in Table 2.

Table 2: Fare Summary

In-County Regular Fares

Category	Fare
Adults 18+	\$2.00
Children/Students under 18	\$1.00
Ages 65-79	\$1.00
Persons with ADA Disabilities	\$1.00
Veterans/ Persons Age 80+	Free

Transfers-Out of County

Category				
County	Bay*	Gladwin	Ogemaw	Iosco
Adults 18-59	\$5.00	\$5.00	\$5.00	\$5.00
Students	\$2.50	\$2.50	\$2.50	\$2.50
Disabled Persons	\$2.50	\$2.50	\$2.50	\$2.50
Seniors 60+	\$2.50	\$2.50	\$2.50	\$2.50

*Currently only Bay County has out of county rendezvous sites. Other counties may develop similar sites in the future.
Source: JDrury Consulting, LLC

Operational Data

All public transit systems in Michigan use Performance Indicators (costs based on passengers, miles and hours) to determine costs and efficiencies in service operations. The Michigan Department of Transportation's (MDOT) Office of Public Transportation maintains a database of all transit costs.

APTA and Arenac County Transit's performance indicators (costs based on passengers, miles and hours) from 2019-2022 are summarized in Table 3 below.

Table 3: 4 Year Performance Indicators-Arenac County Transit and APTA by Fiscal Year and Cumulative

Fiscal year	Total Passengers	Total eligible expenses	Total Miles	Total Vehicle Hours	Cost/Pass.	Cost/Mile	Cost/hour	Pass/Veh. Hour	Pass./Veh. Mile
2022	17,117	\$603,837	256,535	16,288	\$35.28	\$2.35	\$37.07	1.05	.07
2021	11,012	\$399,494	175,716	10,142	\$36.28	\$2.27	\$39.39	1.09	.06
2020	11,156	\$251,687	140,510	7,962	\$22.56	\$1.79	\$31.61	1.40	.08
2019	22,114	\$338,188	135,305	10,155	\$15.29	\$2.50	\$33.30	2.18	.16
Totals	61,399	\$1,593,199	708,066	44,547	\$25.95	\$2.25	\$35.76	1.38	.09

Source: JDrury Consulting, LLC, MDOT
2019-2021 Arenac County Transit

Table 4: Performance Indicators for 2022

APTA vs Neighboring Transit Systems

Transit System	Total Passengers	Total eligible expenses	Total Miles	Total Vehicle Hours	Cost/Pass.	Cost/Mile	Cost/hour	Pass/Veh. Hour	Pass./Veh. Mile
Gladwin/City County Transit	62,635	\$1,899,991	484,376	36,455	\$30.33	\$3.92	\$52.12	1.72	.13
Iosco Transit Corp.	22,000	\$584,984	135,946	6,997	\$25.69	\$4.30	\$83.60	3.14	.16
Ogemaw County Public Transit	37,454	\$949,295	215,178	13,570	\$25.35	\$4.41	\$69.96	2.76	.17
AVERAGE	40,696	\$1,141,423	278,500	19,007	\$27.12	\$4.21	\$68.56	2.54	.15
Arenac Public Transit Authority	17,117	\$603,837	256,535	16,288	\$35.28	\$2.35	\$37.07	1.05	.07

Source: JDrury Consulting, LLC, MDOT

As Table 4 above demonstrates, though APTA's passengers, system costs, miles traveled, and vehicle hours are below the average for neighboring systems, its cost per hour and

per passenger are lower than those systems' average. For a new system, APTA's costs per hour are relatively low. APTA's operating budget is lower than all but one of the comparison systems, and its vehicle hours are comparable. New systems typically have higher costs per hour, (which is the basic number that dictates what service can be provided) and APTA's is significantly lower than the comparison systems' cost per hour.

4 Year Ridership Comparison: Surrounding Systems

Table 5: Ridership Pre-COVID to COVID Recovery

Transit Agency	Fiscal Year	# of Vehicles	Total Passengers
Arenac Public Transit Authority	2022	9	17,117
Arenac Public Transit Authority	2021	9	11,012
Arenac County Transit	2020	8	11,156
Arenac County Transit	2019	12	22,114*
Gladwin City/County Transit	2022	21	62,635
Gladwin City/County Transit	2021	21	48,139
Gladwin City/County Transit	2020	21	69,651
Gladwin City/County Transit	2019	21	96,883*
Iosco Transit Corp.	2022	7	22,000
Iosco Transit Corp.	2021	7	20,248
Iosco Transit Corp.	2020	7	22,163
Iosco Transit Corp.	2019	7	29,932*
Ogemaw County Public Transit	2022	13	37,454
Ogemaw County Public Transit	2021	13	37,042
Ogemaw County Public Transit	2020	13	38,718
Ogemaw County Public Transit	2019	12	54,954*

Source: JDrury Consulting LLC; MDOT

*Pre-COVID

The table above shows a comparison of yearly ridership of the Arenac Public Transit Authority/Arenac County Transit and neighboring agencies. The report indicates yearly statistics from 2019 – 2022. The statistics from 2019 represent pre-covid ridership, while 2021-2022 represents recovery from COVID. As a result of COVID, it is difficult to exhibit normal ridership trends for all agencies. While some transit agencies represented in the table show increase and/or decreases in ridership, APTA figures in 2022 appear to be much better than 2020 or 2021 ridership. Compared to the other agencies, APTA shows a favorable recovery since the COVID pandemic, while Ogemaw and Gladwin are significantly below their pre-COVID numbers. This statistic is fairly common among transit agencies in Michigan.

Table 6: Revenues and Expenses for APTA and Arenac County Transit

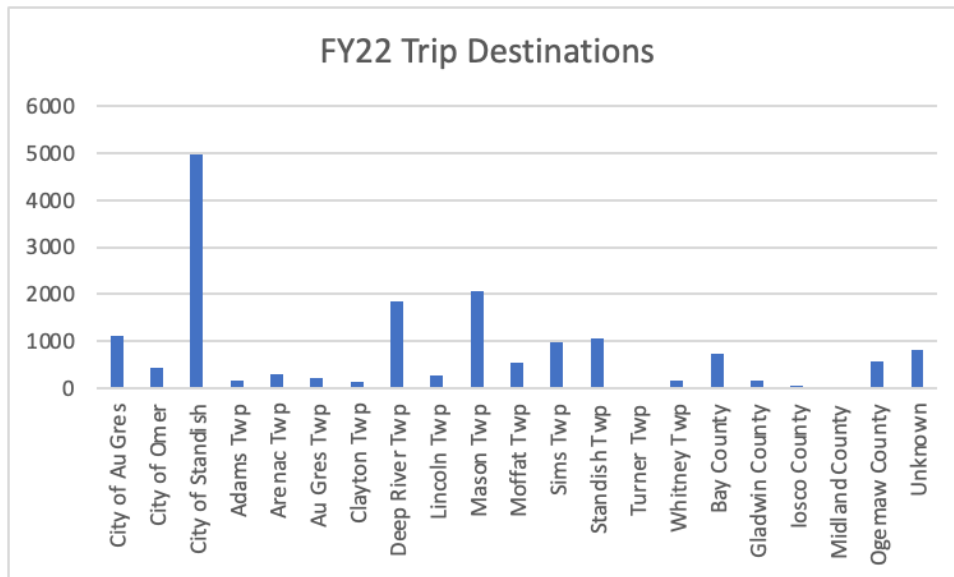
Fiscal Year	Total Eligible Expenses	Federal	State	Local	Farebox
2022	\$603,837	\$18,526	\$211,255	\$675,724	\$19,927
2021	\$399,494	\$118,999	\$167,834	\$366,371	\$16,259
2020	\$251,687	\$90,607	\$105,522	\$48,094	\$9,430
2019	\$338,181	\$62,651	\$129,088	\$119,255	\$17,241

Source: JDrury Consulting, LLC; MDOT

Table 6 outlines the total eligible expenses per year and the revenues by category. Transit agencies are required to have a balanced operating budget each year.

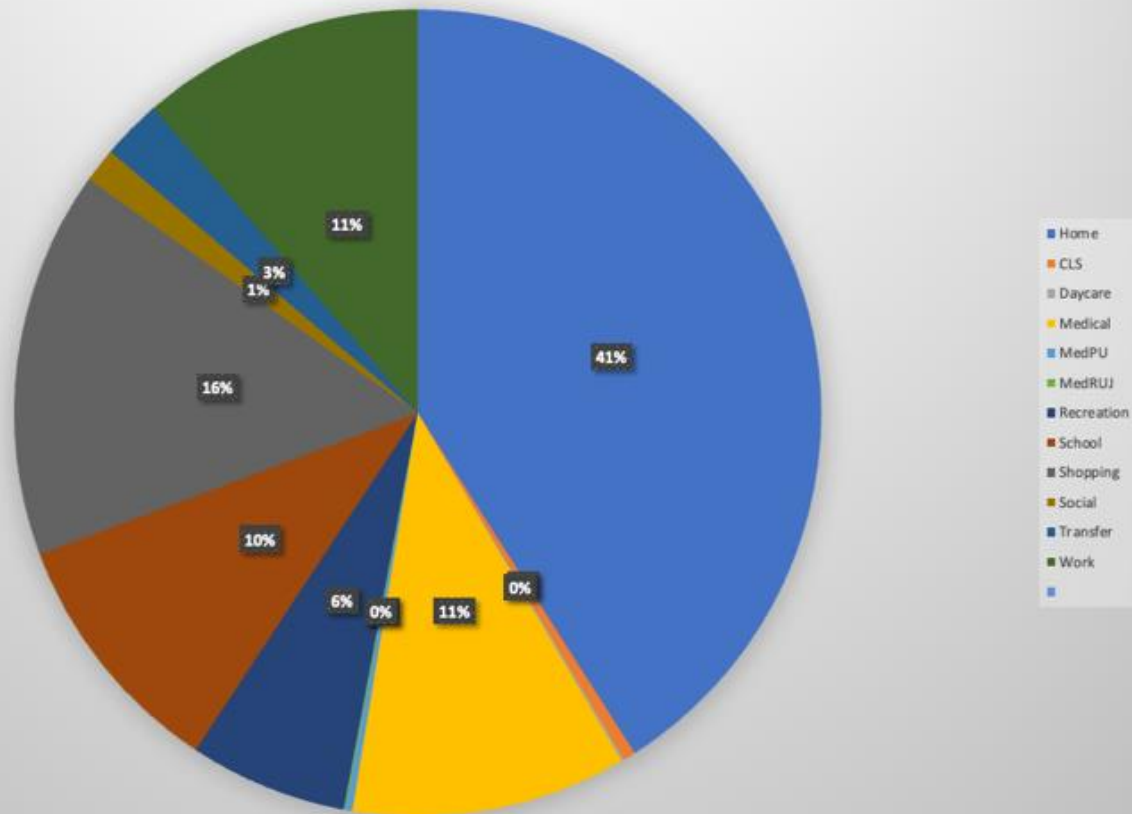
Charts below indicates trip destinations and trip purpose for FY 2022

APTA Trip Destinations

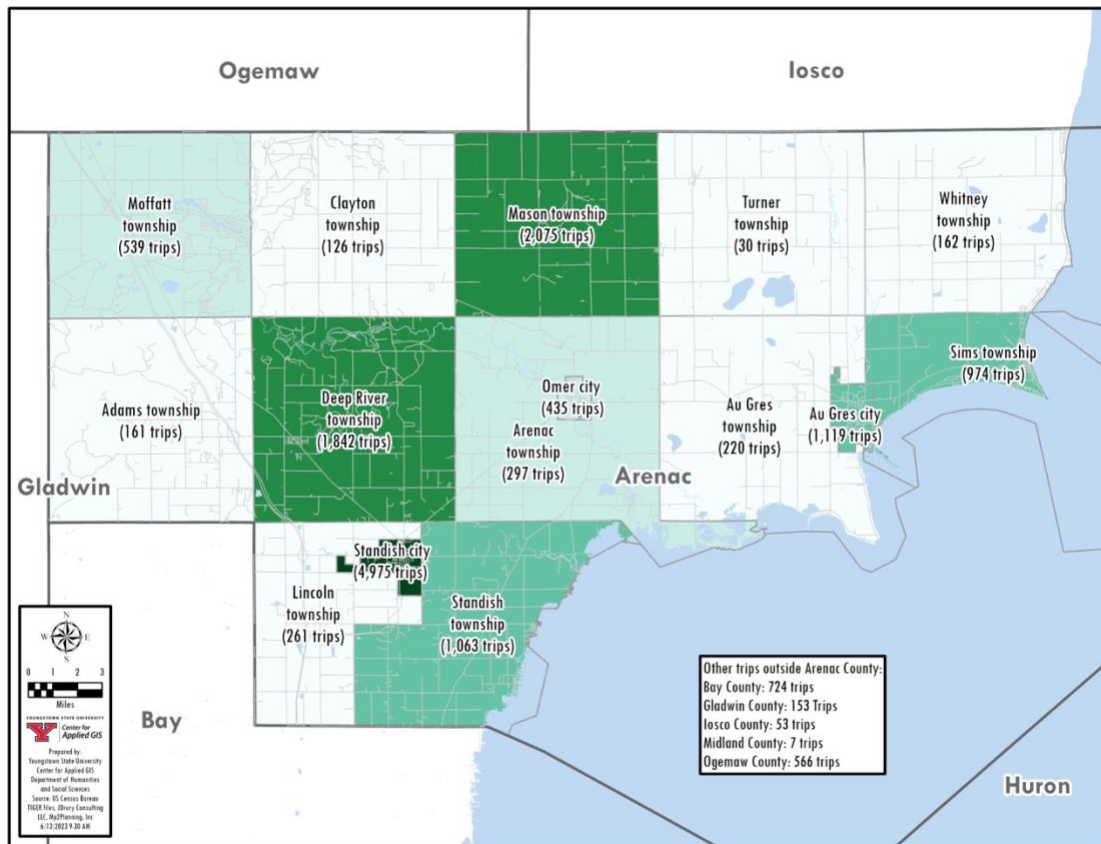


FY-22 Trip Types

Source: PCTrans Report



The following chart shows APTA's total trip destinations for FY 2022:



3. PUBLIC OUTREACH AND SURVEYS

Surveys

Two surveys were conducted as part of this study:

- A mailback survey being distributed to 7,000 randomly selected households in the County;
- A general public input survey available to the general public and advertised through the APTA website, posters with QR codes distributed at key locations in the county.
- A meeting was held with social service agencies in Arenac County at a meeting held by the Multi-Purpose Collaborative Board Meeting, May 15, 2023.

The following discussion presents the survey results.

Mailback Survey

Q1. Are you aware of public transit services in Arenac County?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	657	62.2	63.0	63.0
	No	386	36.5	37.0	100.0
	Total	1043	98.7	100.0	
Missing	No answer	14	1.3		
Total		1057	100.0		
Q2. Do you, or does anyone in your home, use Arenac Public Transit?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	60	5.7	5.8	5.8
	No	976	92.3	94.2	100.0
	Total	1036	98.0	100.0	
Missing	No answer	21	2.0		
Total		1057	100.0		

As shown in the tables above, well over half of the respondents were aware of APTA while about six percent reported using the service. This level of use is typical for rural and small urban areas. The responses to Question 3 indicate that most travel is for medical/dental, shopping, or social/recreation activity.

Q3. If yes, what is the primary reason you use Arenac Public Transit?					
		Responses		Percent of Cases	
		N	Percent		
\$Q3 ^a	Working or seeking employment	9	13.2%	15.3%	
	Shopping, banking and/or errands	11	16.2%	18.6%	
	Attending school or training	7	10.3%	11.9%	
	Medical or dental appointments	24	35.3%	40.7%	
	Social/recreation	12	17.6%	20.3%	
	Other	5	7.4%	8.5%	
Total		68	100.0%	115.3%	
a. Group					
Q4. If yes, about when did you begin using Arenac Public Transit?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2020 or later	30	2.8	51.7	51.7
	Before 2020	28	2.6	48.3	100.0
	Total	58	5.5	100.0	
Missing	No answer	3	0.3		
	System	996	94.2		
	Total	999	94.5		
Total		1057	100.0		
Q5. If yes, how often do you use Arenac Public Transit?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Once a week	3	0.3	5.4	5.4
	2-3 times per week	15	1.4	26.8	32.1
	Once or twice a month	11	1.0	19.6	51.8
	Less than once a month	27	2.6	48.2	100.0
	Total	56	5.3	100.0	
Missing	No answer	5	0.5		
	System	996	94.2		
	Total	1001	94.7		
Total		1057	100.0		

The responses to Question 6 indicate that while a majority of respondents do not have access to an automobile cost is also a significant factor. Almost 14 percent stated they do not ride because they didn't know about the service.

Q6. If no, what is the reason for not utilizing public transit?				
		Responses		Percent of Cases
		N	Percent	
\$Q6 ^a	Own a car	848	66.9%	86.2%
	Have alternate transportation	64	5.0%	6.5%
	Hours of operation too limited	25	2.0%	2.5%
	Doesn't go where I need to go	42	3.3%	4.3%
	Cost to ride is a factor	18	1.4%	1.8%
	Did not know we had public transportation	172	13.6%	17.5%
	Other	99	7.8%	10.1%
Total		1268	100.0%	128.9%

The responses to Question 8 suggest that 35 percent of respondents choose not to drive or limit their driving. This suggests a continuing market for public transportation in Arenac County, particularly with the advances in health care and people living longer and staying at home.

Q7. Do you, or others in your home, have problems meeting your transportation					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	78	7.4	7.6	7.6
	No	952	90.1	92.4	100.0
	Total	1030	97.4	100.0	
Missing	No answer	27	2.6		
Total		1057	100.0		
Q8. Do you, or other adults in your home, choose not to drive or limit the amount of driving when possible?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	355	33.6	35.4	35.4
	No	647	61.2	64.6	100.0
	Total	1002	94.8	100.0	
Missing	No answer	55	5.2		
Total		1057	100.0		
Q9. Because of gas prices or other convenience factors, would you or other members of your household consider using a public transportation service if it met your needs?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	360	34.1	35.4	35.4
	No	309	29.2	30.4	65.7
	Not sure	349	33.0	34.3	100.0
	Total	1018	96.3	100.0	
Missing	No answer	39	3.7		
Total		1057	100.0		

Question 10 shows that most respondents support public transportation for senior and disabled persons. The responses to Question 10 show that about 41 percent of respondents support increasing the amount of local funding for public transit, while almost 35 percent were not sure and 22 percent opposed.

Q10. Do you support affordable public transportation for senior and disabled persons?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	903	85.4	88.4	88.4
	No	45	4.3	4.4	92.9
	Not sure	73	6.9	7.1	100.0
	Total	1021	96.6	100.0	
Missing	No answer	36	3.4		
Total		1057	100.0		

Q11. Would you support additional funding (increased millage or special assessment) dedicated to expanding public transportation services in Arenac County?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	416	39.4	41.0	41.0
	No	236	22.3	23.3	64.3
	Not sure	362	34.2	35.7	100.0
	Total	1014	95.9	100.0	
Missing	No answer	43	4.1		
Total		1057	100.0		

Q12. If you checked yes above, please indicate what improvements do you think should be prioritized?

		Responses		Percent of Cases
		N	Percent	
\$Q12 ^a	Later/evening weekday	131	14.7%	34.6%
	Weekend daytime service	148	16.6%	39.1%
	Weekend evening service	95	10.6%	25.1%
	Regularly scheduled bus route	160	17.9%	42.2%
	On request transportation service	210	23.5%	55.4%
	Smartphone scheduling	103	11.5%	27.2%
	Other	47	5.3%	12.4%
Total		894	100.0%	235.9%

As noted in the responses to Question 12, on-request transportation services are the serves that should have the most emphasis. Improvements (dispatching, communication, timeliness, etc.) are key issues that should be addressed.

Q13. What is your general impression of public transportation in Arenac

		Responses		Percent of Cases
		N	Percent	
\$Q13 ^a	Adequately meets the community needs	94	10.1%	10.4%
	Should be expanded	139	14.9%	15.4%
	Works well for those who can't or don't drive	433	46.4%	48.1%
	Public transportation is not needed in our area	60	6.4%	6.7%
	None of the above	208	22.3%	23.1%
Total		934	100.0%	103.7%

Q14. What best describes your employment status:					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Employed, full-time	227	21.5	22.3	22.3
	Employed, part-time	35	3.3	3.4	25.8
	Unemployed	5	0.5	0.5	26.3
	Homemaker	21	2.0	2.1	28.3
	Retired	710	67.2	69.8	98.1
	Other	19	1.8	1.9	100.0
	Total	1017	96.2	100.0	
Missing	No answer	40	3.8		
Total		1057	100.0		

Q16. What is your age?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 18	1	0.1	0.1	0.1
	18 - 55	149	14.1	14.6	14.7
	56 - 70	390	36.9	38.3	53.0
	Over 70	478	45.2	47.0	100.0
	Total	1018	96.3	100.0	
Missing	No answer	39	3.7		
Total		1057	100.0		

Q17. What is your gender?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	518	49.0	52.1	52.1
	Male	476	45.0	47.9	100.0
	Total	994	94.0	100.0	
Missing	No answer	63	6.0		
Total		1057	100.0		

In conclusion, the results of the survey indicate that there is a current demand for the service and, that demographic and economic issues suggest this demand will continue.

General Public Survey

The general public survey (distributed on buses, by QR code, and distribution at local businesses and agencies resulted in about 70 completed surveys. The results were generally similar to the mailback survey but skewed more towards supporting public transit. The full results are available at APTA.



4. FUTURE SERVICE DESIGN AND COST EVALUATION

The consultant team has developed several service designs for APTA. Estimated operational and capital costs are included.

Cost Determination

The easiest way to determine how much additional transit service will cost is to use a cost per hour format. The cost per hour is determined by all of the eligible costs incurred by a transit agency (wages, benefits, facility costs (upkeep, lease or rent), utilities, equipment, maintenance and repairs, insurance, supplies, etc.) divided by the vehicle hours reported by the transit entity to the Michigan Department of Transportation (MDOT). This is the figure that determines what each hour of service will cost.

Service Options and Cost Evaluation Per Option

Option 1: Maintain current service with a gradual increase of service as resources become available. Due to the current fleet size of 9 vehicles, any expansion of service will become constrained unless APTA can obtain additional vehicles. Under this option, APTA would expand service by utilizing a zone service model. Designating rural, less populated townships of Arenac County into zones would be a start to providing additional out-county services. An additional bus would operate 8 hours a day per zone (4-5 zones as an example), so 1 additional vehicle would be needed initially to serve the zones on a rotating basis. As an example, each zone would be advertised as available 1 or 2 days a week, with a 24-hour advance reservation. If no rides are scheduled for the designated zone, the service would not run into the zone on that day. Some zones may demonstrate more utilization than others, and additional service could be shifted to those areas, while still maintaining a minimum service presence in the outlier zones.

The need for additional vehicles and hours for zone service would be based on demand from each zone. Expansion costs to begin are projected at an additional 50 hours of service per week (1 bus per zone per day, assuming 5 zones) adding additional hours a week when staffing and vehicles come available. Depending on passengers and destination, the zone bus could transfer passengers to another vehicle to transport them to their final destination, then could return to service the zone. A yearly cost for this option would start at an additional operating cost of \$152,500 per year, along with an additional vehicle (Ford Transit Van) estimated at \$128,500.

Option 1

Additional Hours Per Day	Cost per hour	Days operated per year	Total Additional Operational Cost
10	\$50.00	305	\$152,500

Option 2: Maintain current demand response service but phase in an implementation of three timed routes. These routes would run between Twining and Standish, AuGres and Standish, and Sterling and Standish. They would need to be supported by existing demand response service getting passengers to the route. As an example, routes could be spaced at 4 times per day: 8:00 a.m., 10:00 a.m., 2:00 p.m., 4:00 p.m. They would begin in Twining, AuGres and Sterling and arrive in Standish, dropping off passengers at a specified location. Vehicles would return to Twining, AuGres and Sterling at the off hours of 9:00 a.m., 11:00 a.m., 3:00 p.m. and 5:00 p.m. Three expansion vehicles would be needed (Ford Transit Vans) at an estimated cost of \$385,500. This would require an additional 10 hours per day per route (30 hours per day when fully implemented) at a projected hourly cost of \$50.00 per hour, for a yearly additional operating cost of \$457,500.

Option 2

Additional Hours Per Day	Cost per hour	Days operated per year	Total Additional Operational Cost
30	\$50.00	305	\$457,500

Option 3: Maintain current contract service and expand county-wide service by adding both zones and timed routes. This option is a hybrid of options 1 and 2 above, and would provide significantly more service and transit presence throughout Arenac County. This option would allow for more service options throughout the county but could be expanded on a more controlled manner. Zone service could ‘feed’ the timed routes in each direction. As zone service became more utilized, additional resources could be targeted at those zones to meet demand. Implementing timed route options would be similar in cost to Option 2, at 10 hours per day per 3 vehicles. Phasing in a zoned service could likely use some existing resources to serve each zone, so additional cost is estimated at an additional 20 hours per day for 2 additional vehicles. Total additional hours for the combined services would be 50 hour per day, or \$762,500 when fully implemented. This option would also require an additional 5 vehicles at an estimated capital cost of \$642,500 when fully implemented.

Option 3

Additional Hours Per Day	Cost per hour	Days operated per year	Total Additional Operational Cost
50	\$50.00	305	\$762,500

Option 4: Maintain current contract services, expand demand response to a full county-wide program. An additional 4 expansion vehicles would be needed, and an additional 40 hours per day (10 per vehicle). Cost for expansion vehicles would be an estimated \$514,000 (Ford Transit Vans). The service expansion operational cost estimate would be \$610,000 per year at \$50 per hour. This option would likely be the least efficient option as the service would require responding to calls on a first come first serve basis, essentially criss-crossing the county to provide service. It would likely result in increases

in deadhead hours, costs per mile, and costs per passenger, while overall ridership may not increase.

Option 4

Additional Hours Per Day	Cost per hour	Days operated per year	Total Additional Operational Cost
40	\$50.00	305	\$610,000

Financing Options for Service Expansion:

Any transit agency that receives state and federal funds must have a balanced budget. As mentioned above, state and federal funds are paid at a percentage of each agency's eligible expenses. MDOT's Local Bus Operating reimbursement percentage for FY 2023 is 34.5849% of eligible expenses, and FY 2024's is 40.2993%. In FY 2023, the federal operating assistance percentage is 36% of eligible expenses, but due to sunset of federal CARES funding this year, FY 2024's reimbursement rate will return to 18% of eligible expenses. Local funds (farebox revenue, contract revenue, and other local funding) are needed to 'balance' an operating budget. Local funds can come in the form of an appropriation or dedicated transit millage. APTA currently receives a millage from Arenac County at .6 of 1 mill, which equates to approximately \$368,465. Table 4.1 below illustrates millage amounts that could be realized at millage rate percentages of 1 mil.

Table 4.1: Millage rates and dollar value realized.

1.3 mil	\$798,342
1.25 mil	\$767,636
1.2 mil	\$736,931
1.1 mil	\$675,520
1 mil	\$614,109
.95 mil	\$583,403
.9 mil	\$552,698
.85 mil	\$521,993
.8 mil	\$491,287
.75 mil	\$460,582
.70 mil	\$429,876
.66 mil	\$405,312
.6 mil	\$368,465

The table below summarizes APTA's budgets for FY's 2023/2024.

Table 4.2: APTA's 2023 and 2024 Budgets

Fiscal Year	Total Expenses	State Funding	Federal Funding	Farebox/Contract fares	Local Funding (Millage)	Surplus/Deficit
2023	\$685,300	\$236,906	\$246,708	\$25,000	\$368,465	\$191,779
2024	\$852,378	\$343,502	\$153,428	\$60,000	\$368,465	\$73,017

The table below illustrates the costs of each service option and how much of a millage rate would be required in local funding.

Table 4.3 Local Funds Required to Balance

Option	Total Expenses*	State Funding**	Federal Funding**	Farebox**	Local Funding Required	Minimum Millage Rate needed
1	\$1,007,860	\$406,161	\$181,414	\$60,000	\$360,285	.75
2	\$1,312,860	\$529,073	\$236,314	\$60,000	\$487,473	.95
3	\$1,617,860	\$651,986	\$291,214	\$60,000	\$674,660	1.2
4	\$1,465,360	\$590,530	\$263,764	\$60,000	\$551,066	1.0

*Total expenses include FY 2024 budgeted plus additional service costs per option

**State funding at 40.2993%, Federal at 18%, Farebox from 2024 submitted budget

Table 4.4 Retained Earnings after Expenses

Option	Total Expenses	Local Funding Required	Minimum Millage Rate needed	Millage Amount	Retained Earnings
1	\$1,007,860	\$360,285	.75	\$460,582	\$100,297
2	\$1,312,860	\$487,473	.95	\$583,403	\$95,930
3	\$1,617,860	\$674,660	1.2	\$736,931	\$62,271
4	\$1,465,360	\$551,066	1.0	\$614,109	\$63,043

All the above estimated operating costs are based on an average hourly cost of \$50 per hour. As APTA has only been in existence for 2 years, it is difficult to determine a reliable cost per hour to use. APTA's FY 2022 cost per hour was \$37.07. Through 2 quarters this fiscal year, the cost per hour is \$70.72, primarily due to costs incurred in moving locations in the first quarter of FY 2023. Fluctuation in cost per hour is not an unusual occurrence, as most rural transit agencies can have some volatility in their hourly cost until operations stabilize. In discussions with APTA's Executive Director, the \$50.00 per hour was agreed upon as a reasonable figure for the Consultant team's cost evaluations.

If APTA's costs return to the \$37 range or stabilize in the mid-\$40 per hour range, the estimates above for each service will decrease. Rather than use FY 2022's number that may not be indicative of growth and actual costs, the Consultant team determined that a \$50 per hour cost estimate was reasonable, as it appears the \$47.31 per hour in the second quarter of FY 2023 may be near the average cost per hour going forward as that quarter had an almost identical number of vehicle hours as the second quarter of FY 2022. As cost per hour increase or decrease, the estimated costs will go up or down respectively. As APTA's cost per hour stabilize this year the resultant cost per hour can be 'plugged in' to the above service hours for each option and a better cost figure can be determined. APTA is also attempting to add employee benefits to its compensation package, which should assist in employee recruitment and retention. As those additional benefits phase in, the cost per hour will also increase.

The millage amounts needed to balance are minimums. As wages and benefits increase, costs per hour will increase. As noted above for FY 2024's current budget, APTA will only have a \$73,017 surplus. This is 8.6% of an \$852,378 budget. If fuel prices increase or a vehicle engine needs to be replaced this surplus could evaporate. A more viable balance would be a minimum of 15%-20%. Though all the scenarios above provide a positive balance, none of them provide a 15%-20% cushion, nor do they allow for future expansion.

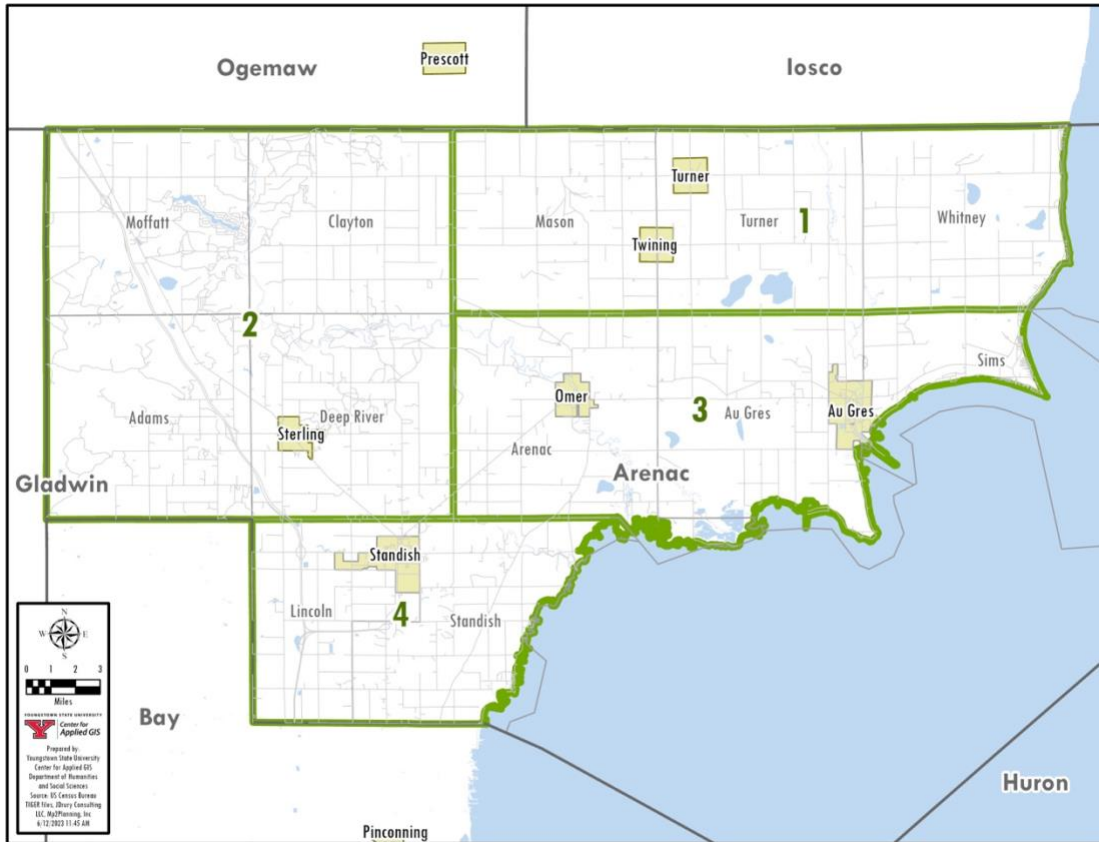
Costs of vehicles are estimated on current costs of Ford Transit Vans through MDOT's extended purchase option. Vehicle prices are based on all wheel drive equipped vans with wheelchair lifts. Capital costs for vehicles are normally covered with State and Federal funds, so there is no local cost. With expansion however, APTA may need to resort to purchasing used vehicles from other transit agencies or requesting that MDOT reassign vehicles from other agencies that are not being utilized. This can be done at minimal cost versus purchasing new vehicles with local funds. The downside of this option is that vehicles procured from other transit agencies are normally older and have higher mileage, so maintenance costs usually are higher, which can contribute to an increase in cost per hour.

The options outlined are primarily geared toward service expansion, however, APTA could choose to change some of its present service toward one or more of the options. In that event, it would likely not increase costs as service would be redirected within current service hours versus initiating new services.

As it is uncertain at this point if MDOT's Local Bus Operating fund will increase or decrease (the amount is appropriated yearly by the Legislature) and federal funding is returning to its pre-COVID level, it is extremely prudent to have a stable local funding source.

Graphic Examples of Possible Service Options 1, 2 and 3

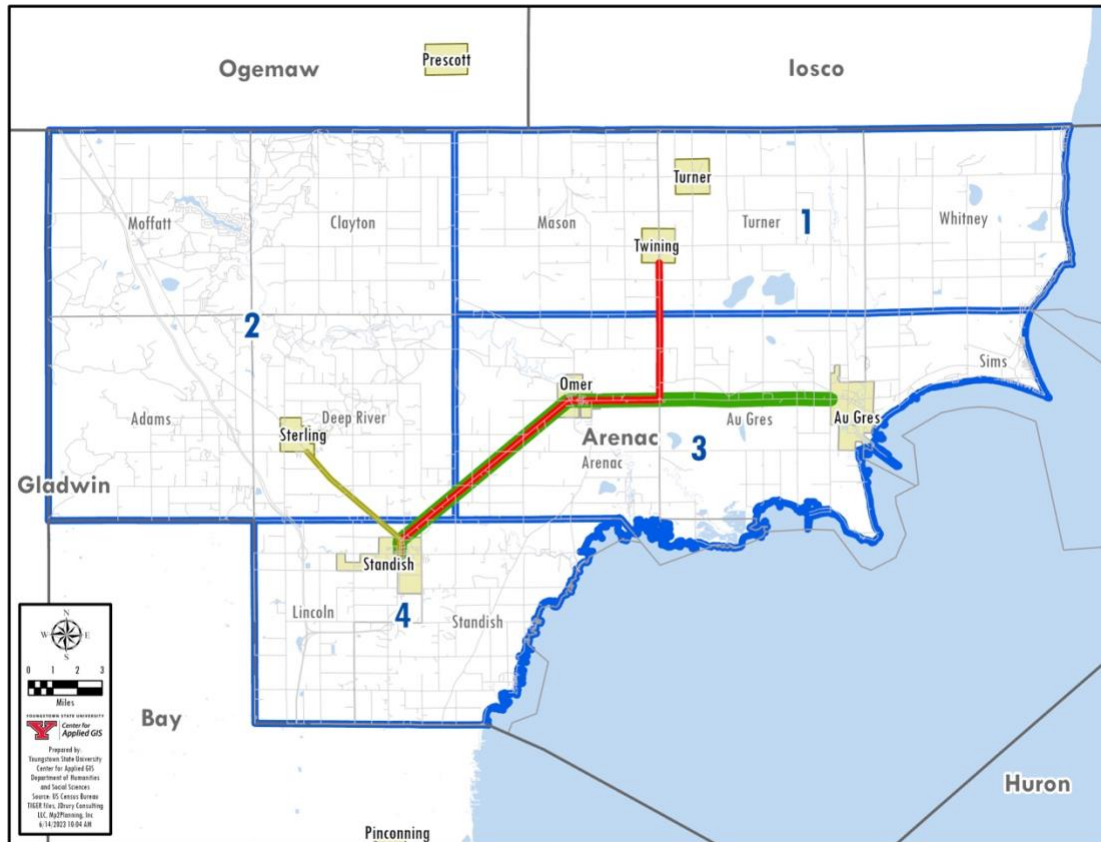
Option 1



Option 2



Option 3



Operational Cost Saving Options

There are several areas where APTA could make improvements to operational activities that would assist the agency with cost saving measures.

While APTA has a computerized assisted scheduling and dispatching system, this software is an entry level system that offers little assistance when it comes to optimization of the fleet's travel schedules. The current software works well for small systems, however there are many software options that would better suit the agency's need for trip optimization, fleet management, and offering technology such as tablets in vehicles, GPS tracking, online and app driven scheduling and fare payment options as well as operational data and reporting. Capital costs to purchase or lease the software vary based on the type of system deployed and licensing subscriptions, technical support costs, data plans are billed on a quarterly or annual basis. Utilizing state and federal

grants are software upgrades require following the FTA/MDOT procurement policies or the purchase can be funded using local funds via local procurement policy.

Fleet Transformation

Over the past several years, FTA began encouraging transit systems to “go green”. This transformation process has pushed agencies toward lower and zero emissions vehicles with large amounts of grant funding for vehicles, infrastructure and bus facilities. While lowering emissions is the primary goal of these funding initiatives, agencies are reaping the benefits by reducing fuel and maintenance costs as well as claiming the Alternative Fuel Tax Credit.

In more urban areas, the trend toward EV, Hydrogen and CNG is most common. These alternatives work well where mileage range isn’t a significant concern.

In more rural areas and for small agencies, where mileage range is a key factor in route planning for vehicles, options such as Propane Autogas or Bi-Fuel systems have become the trend.

To take advantage of the available funding, most agencies are making the switch to alternative fuels as their vehicle become eligible for replacement. However, some agencies are opting for conversions to propane or bi-fuel on vehicles that are still within their useful lifecycle, as gasoline powered engines can be converted to these other fuel types without sacrificing efficiency.

The largest benefit of alternative fuels to a transit agency is a reduction in fuel costs and eligibility for the Alternative Fuel Tax Credit. The tax credit is currently authorized through 2024, however, that authorization has been extended at expiration over the past ten years.

Recommendations

Option 3 provides the greatest range of full-county service; however the cost would likely require a millage rate of 1.25, which would cover a full expansion over time, but would not provide enough revenue to sustain expanded operations if state and federal funding is reduced. It also barely allows an operating surplus, which isn’t realistic. Only a higher level of funding would support this option.

Based on the fact that a 1.25 (or higher) millage rate is likely not a realistic option at this point, Option 1 is the most realistic expansion scenario. A *minimum* .75 mil would allow for this option to be implemented on a slower basis. If a higher millage rate can be captured, it would also allow for a more realistic operational surplus to be realized. At the .75 mil rate, the surplus at current state and federal funding rates would only allow for an approximate balance of \$100,000, which is an insufficient ‘cushion’ for operations. A millage rate of .85 to 1 mil would allow for steady expansion and provide more of a

budget ‘cushion’ going forward. With that perspective, Option 1 is the recommended option as it allows for slower, steady expansion within anticipated revenues and providing a surplus.

Though it is tempting to expand services quickly when additional revenues become available, all expansion must take place at a conservative pace. If a system expands too quickly and out-spends its revenues and surplus, drastic cuts are usually inevitable. With the way the state funding formula operates, service cuts are not dollar per dollar. To return to a balance, cuts must be \$2 for \$1. Public transit agencies are required to operate within a balanced budget, so it is important to proceed slowly with any service expansion to stay within budget parameters. The consultant team also recommends that APTA begin the property purchase and arrange for facility funding as soon as is possible.

5. MOVING FORWARD

APTA's priority for the next several years is to secure property for a new facility construction to avoid leasing space and to provide space for inside vehicle storage and on-site maintenance. In addition, if service expansion does occur an efficiency and cost saving option would be to purchase/upgrade dispatch software for scheduling. The consultant team offers the following to address how APTA can begin those processes. As discussed at the presentation to the APTA board at its May meeting, these are considered "projects" that APTA could present as being "shovel-ready" while pursuing grant opportunities.

Dispatch Software

Most agencies in Michigan utilize some form of scheduling/dispatch software and these programs range from entry-level to robust software programs with continuous optimization. Arenac Public Transit Authority currently utilizes an entry-level software program for dispatching/scheduling and maintaining passenger trip data. This software works well for small transit systems as it provides basic scheduling, dispatching and reporting functions. To improve efficiencies as APTA expands service, it is recommended that APTA minimally upgrade their current software to include mobile tablets on vehicles. By adding tablets, the Dispatch Office would significantly reduce the need for printed route sheets and the need to communicate additions and changes to the driver's manifest via two-way radio.

To realize additional benefits from dispatching/scheduling software, APTA would need to upgrade from their current software to another dispatching/scheduling product. Additional benefits that come from a more robust electronic software program includes a robust algorithm that optimizes and determines the best placement for a trip. Some of the products offer continuous optimization where the software monitors vehicle travel, trip distances and ability for a vehicle to complete a trip in a timely manner. Additional benefits include downloadable apps for passenger to self-book rides, cashless fare payment options, trip notifications and GPS tracking of the vehicles. Arenac Public Transit Authority will need to assess their wants and needs for their Dispatch Office. APTA will want to consider the current dispatching needs versus needs for the future, i.e., what are the outcomes APTA would like to achieve by using a dispatch/scheduling system?

It should be noted that the capital and operational costs for software varies from platform to platform. Some software companies will offer a subscription-based payment that includes all costs for customizing and building the software to the agency's needs as well as monthly support and maintenance. Other companies charge an upfront cost to purchase the software platform and then charge an annual support fee. Software costs can range from \$50,000-\$300,000 for capital expenditures with annual fees of \$25,000-\$75,000 or more. It's important for APTA to review and understand the different fee structures for subscription, lease and purchases of dispatch/scheduling software.

Software can be funded through several grant sources (Rural Task Force funding, other FTA grants administered by MDOT) which can take several years to receive due to the grant application process. If the agency so chooses, they could purchase/lease software using retained earnings or local funding. Based on the need for operational efficiencies as APTA expands service, the consultant team's recommendation is to develop a plan to upgrade software in the next 2-3 years. Several Michigan transit agencies have recently upgraded software and therefore APTA can learn from their experiences in terms of functionality, components that may or may not be needed for a system of APTA's size, etc. Software companies offer demos and webinars that will highlight the functionality of their product, which is a good starting point for determining the needs of the agency in terms of software.

Once the agency has determined the software needs and the functions that are required in a software product, the agency can develop an RFP. As there have been recent RFP's approved by MDOT for software, it is suggested that APTA request a sample RFP from MDOT's procurement analyst or from other transit agencies who have recently completed the procurement process. Michigan transit agencies who have recently procured dispatch software include Charlevoix County Transit, and Cadillac/Wexford Transit Authority (which headed a consortium of 6-8 other transit agencies).

Facility Needs

As stated above, the Consultant team recommends APTA to pursue funding for a facility, so an application for funding to purchase property and construct a new facility should be made without delay. APTA's Executive Director has identified vacant land in Standish, MI, currently owned by the Arenac County Road Commission that would be suitable for a transit facility. The road commission has agreed to sell this property to APTA. The purchase of this property may be made contingent on environmental approval. In conversations with the Executive Director, it does not appear that prior environmental impact or historical use studies have been performed on the property.

APTA has not yet applied for any Federal/State funding for the purchase of property or facility construction. Prior to purchase of the property, APTA will be required to contact their Michigan Department of Transportation (MDOT) project manager, who will work with the appropriate Federal Transit Administration (FTA) representatives to determine whether a Categorical Exclusion is needed.

23 CFR §771.118 - Categorical Exclusion (CE) – defined:

[Actions](#) that do not induce significant impacts to planned growth or land use for the area; do not require the relocation of significant numbers of people; do not have a significant impact on any natural, cultural, recreational, historic or other resource; do not involve significant air, noise, or water quality impacts; do not have significant impacts on travel patterns; or do not otherwise, either individually or cumulatively, have any significant environmental impacts.

More detailed information concerning categorical exclusion determinations can be seen on the FTA website at [Preparing Environmental Documents | FTA \(dot.gov\)](#).