Transit Board Meeting
AGENDA

AMES TRANSIT AGENCY
BOARD OF TRUSTEES

CYRIDE CONFERENCE ROOM – October 26, 2022

1. CALL TO ORDER: 4:00 p.m.
2. Approval of September 28, 2022, Minutes
3. Public Comments
4. Fareless Transit Study Final Report and Presentation
5. 2023 HVAC Improvements Plans and Specifications
6. Reconditioned Replacement Engine Award of Contract
7. Monthly Report
8. Fall Meeting Dates / Times
    - November 30, 2022, 4:00 p.m.
    - December 21, 2022, 4:00 p.m.
9. Adjourn

Ames Transit Agency
Board of Trustees

September 28, 2022
AMES TRANSIT AGENCY BOARD OF TRUSTEES

The Ames Transit Agency Board of Trustees met on September 28, 2022, at 4:00 p.m. in the CyRide Conference room. President Jeffrey called the meeting to order at 4:02 p.m. with Trustees Beatty-Hansen, Ludwig, Norton, Schainker, and Schnepf present.

APPROVAL OF AUGUST 24, 2022, MINUTES:

Trustee Ludwig made a motion to adopt the August 24, 2022, Transit Board minutes as presented; Trustee Beatty-Hansen seconded the motion. (Ayes: 6 Nays: 0) Motion carried.

PUBLIC COMMENTS:

None.

FY 2022 OPERATIONS FUND TRANSFER:

Director Neal requested approval to reallocate funds from the operations fund closing balance. During the August 2022 board meeting, board members discussed reallocating some of the above 10% operations fund to the operating budget and the capital project fund. The operating fund closing balance above the 10% directive reserve is approximately $5,344,578. Option 1 is to add $500,000 to the FY 2023 operations budget for wages and benefits, add $500,00 to the FY 2023 operations budget for fuel, move $1,000,000 to the capital fund for local match to purchase 40-foot buses, and move $1,000,000 to the capital fund for a facility expansion/second building local match. Option 2 includes everything in Option 1 with an additional $2,000,000 to the capital closing balance for uncommitted capital projects.

Director Neal recommended approval of Alternative #1. Reallocating the identified funds from the operations fund closing balance to the operating budget and capital programming will help meet the fund balance policy and enable CyRide to have the local match needed to proceed with future grant opportunities.

Board members discussed the budget and future needs, such as the Climate Action Plan.

Trustee Ludwig made a motion to approve Alternative #1 with a request to have a list of the capital projects provided to the board. Director Neal clarified that those items would be brought to the board in December as part of the budget. Discussion continued with board members about Option 1. President Jeffrey noted that there was a motion to approve Alternative #1 and inquired if there was a second; Trustee Schainker seconded the motion. (Ayes: 6 Nays: 0) Motion carried.

FY 2024 BUDGET PLANNING - DISCUSSION:

Director Neal presented staff recommendations and customer service requests to the board as part of the annual budgeting process. Administration is proposing additional service on the #11 Cherry route during the ISU break schedule, which would have an estimated annual cost of $13,314. Administration is also recommending two staffing changes; .25 FTE for the Maintenance Principal Clerk and .5 FTE for the Technology Coordinator. Both roles have proven to be valuable in the organization. The customer service requests were also presented, which included changes to the #2 Green for additional trips by the Ames High School, adding a bus to #6 Brown, extending service on #7 Purple, adding Saturday service to #9 Plum, adding weekday route service during ISU break to #11 Cherry, adding 20-minute service to #14 Peach, and expanding service from ISU campus to DMACC for the ISU/DMACC partnership program.

Trustee Beatty-Hansen suggested CyRide reach out to AHS and DMACC to determine if they would be interested in becoming funding partners for the service changes that would affect them.

Director Neal informed the board that the three staff recommendations would be brought as part of the December budget discussions.

TITLE VI PROGRAM UPDATE:

Director Neal requested approval of CyRide's Title VI program. The FTA requires it to be reviewed, updated, and approved every three years. The recommended change was to modify the curb-to-curb service type from operating every 60-minutes to operating "on-demand," such as EASE and MLX.

Director Neal recommended approval of Alternative #1. Adopting the Title VI plan and policy documents reflects CyRide's current practices in the daily delivery of service within the Ames community. It also allows CyRide to meet federal obligations and provide services regardless of race, color, or national origin.

Trustee Norton made a motion to approve Alternative #1; Trustee Ludwig seconded the motion. (Ayes: 6 Nays: 0) Motion carried.

ANNUAL TRANSIT ASSET MANAGEMENT PLAN – PERFORMANCE MEASURES AND TARGETS UPDATE:

Director Neal requested approval of CyRide's FY 2023 Transit Asset Management (TAM) plan performance targets. CyRide is required to annual update and submit TAM plan performance measures, demonstrating how the organization operates, maintains, and improves its public transit assets. CyRide did not meet the projected 30% performance target for FY 2022 and ended the year with 35% of the large bus fleet beyond its useful life due to supply chain disruptions with the articulated and two battery electric buses. CyRide did meet the 22% performance target for cutaway buses. CyRide did not meet the ULB performance target for the minivan category, but the asset will be disposed of, and the category will be eliminated in 2023. CyRide did meet the target for the shop trucks category.

Director Neal recommended approval of Alternative #1. Approving the FY 2023 TAM plan performance targets for each asset category allows CyRide to meet its federal obligations and help guide future capital replacement needs.

Trustee Ludwig made a motion to approve Alternative #1; Trustee Beatty-Hansen seconded the motion. (Ayes: 6 Nays: 0) Motion carried.

AWARD OF CONTRACT FOR DEMAND RESPONSE SOFTWARE:

Director Neal requested award of contract for demand response software. CyRide currently operates two demand response services: EASE and MLX. The board had previously approved $50,000 to purchase software to help manage these services and improve efficiency and the customer service experience. A request for proposal was released in July and was due on August 26. Three bids were received and evaluated. Based on the evaluations, staff is recommending an award of contract to The Routine Company. TRC has been determined to be the best overall match and is robust with system efficiencies and fixed route interoperability. In addition, the timelines provided by TRC would allow CyRide to launch the system over ISU winter break. The contract is for two years, with the option to renew for up to three additional years.

Director Neal recommended approval of Alternative #1. Awarding the contract to The Routing Company will allow CyRide to increase efficiencies and improve customer service for demand response services.

Trustee Ludwig made a motion to approve Alternative #1; Trustee Schnepf seconded the motion. (Ayes: 6 Nays: 0) Motion carried.

MEMORANDUM OF AGREEMENT WITH IOWA DEPARTMENT OF TRANSPORTATION:

Director Neal requested approval of a memorandum of agreement for CyRide to become a third-party CDL tester for the State of Iowa. CyRide has been working with the IDOT to become a third-party tester for the State of Iowa. Part of the agreement requires a Memorandum of Agreement (MOA) to be signed by both parties. The MOA allows CyRide to administer any knowledge and skills tests for which we are certified.

Director Neal recommended approval of Alternative #1. Approving the MOA will allow CyRide to begin administering the CDL knowledge and skills tests for our drivers, helping to streamline and shorten the training process.

Trustee Ludwig made a motion to approve Alternative #1; Trustee Schnepf seconded the motion. (Ayes: 6 Nays: 0) Motion carried.

MONTHLY REPORT:

Ridership Statistics: The beginning of the fall semester ridership was similar to last year. CyRide will monitor ridership and report any significant changes to the Transit Board.

ISU Enrollment: ISU announced that total fall enrollment was slightly down from last year; however, there was a rise in new student enrollment. CyRide will adjust internal projections based on the data.

2022-2023 ISU Student Fees and Trust Fund Balance: CyRide has begun the budget process with an analysis to identify the 2022 – 2023 student fee rate necessary to operate service next year. Director Neal will meet with Trustees Ludwig and Schnepf to discuss this rate and attend a meeting with the Special Student Fee Committee. Additional information will be brought to the Transit Board.

Bus Shelter on Mortensen: An apartment company that manages the Madison apartments has owned a bus shelter at Mortensen and Miller for several years. The shelter was often in disrepair. Ownership of the shelter was transferred to CyRide, and the shelter has been repaired.

Upcoming Board Meeting Dates: Board members indicated issues with the November date and December board meeting dates. As a result, the November and December dates were changed to accommodate schedules better.

Fall meeting dates:

- November 30, 2022, 4:00 p.m.
- December 21, 2022, 4:00 p.m.

Adjourn: Trustee Ludwig made a motion to approve adjourning at 4:59 p.m.; Trustee Beatty-Hansen seconded the motion. (Ayes: 6 Nays: 0) Motion carried.

_____ _____

Liz Jeffrey, President Cheryl Spencer, Recording Secretary

October 26, 2022
Fareless Transit Study Final Report and Presentation
CyRide Resource: Barbara Neal

BACKGROUND:

In March, the Transit Board directed CyRide staff to analyze and evaluate a systemwide fareless model for CyRide. At the April and June board meetings, respectively, the Transit Board approved a Request for Proposal (RFP) for a Fareless Transit System Study and an award of contract to Nelson\Nygaard to complete the study.

Reviewing options for fareless or zero-fare transit aligns with the City Council's stated goal of "Implement[ing] additional accessible and equitable transportation options for the community (transit, bike, pedestrian, micromobility, rideshare, and others)." This goal included a specific provision to study the impact of zero-fare services in the community. It also aligns with the City of Ames' Climate Action Plan being evaluated by the Ames City Council, which establishes a target of reducing greenhouse gas emissions to reach net-zero in 2050 and includes six "Big Moves" needed to be completed to reach this target. One of these Big Moves includes increasing Active Transportation and Transit Use, which could be achieved partly through zero-fare service options on CyRide.

The scope of work being performed by Nelson\Nygaard includes six project tasks.

- Task 1: Kickoff Meeting, Refine Goals and Objectives, and Project Management
- Task 2: Evaluate Existing Conditions, Fare Structure, Policies, and Current Data
- Task 3: Peer Review and Best Practices
- Task 4: Systemwide Fareless Program Evaluation
- Task 5: Fare Scenarios
- Task 6: Fare Analysis Recommendation and Documentation Report

Nelson\Nygaard has completed the Zero-Fare Transit System Study analysis, which is attached to the board packet. Nelson\Nygaard will also present the final report via Zoom during the Transit Board meeting. Following the presentation, the consultant and CyRide staff will be available to answer questions from trustees.

Based on the information presented, staff is seeking board input on the zero-fare alternatives and if any should be pursued. If the Transit Board indicates interest in one or more of the presented scenarios, staff will prepare a specific budget option for review at the November Transit Board meeting.

ADDITIONAL CONSIDERATIONS:

The farebox accounts for only 1% of CyRide's revenue sources, and eliminating fares would likely increase ridership and help advance equity within the community by reducing the cost of transportation for those least able to afford transit fares. The report's estimates for ridership changes reflect what staff expects for zero-fare operations.

A zero-fare system would also increase the community's expectation for additional frequency during the day and the expansion of services to areas of the community not currently served by fixed route transit. **The specifics of route and timing expansions are beyond the scope of work of this current study. Therefore, total costs are not entirely known but would likely be above and beyond those identified by the consultant to implement zero-fare systemwide.** For instance, with alternative #3 in the analysis, Zero-Fare for Youth would require additional service on the #2 Green route to serve the High School area. The anticipated cost to add this service is approximately $250,000 annually. Additionally, implementing one or more of the zero-fare scenarios would likely require increased frequency and expanded hours of services on several of our current fixed routes. These improvements would be necessary to meet the needs of passengers needing two or more buses to reach their destination. Currently, most trips only allow passengers to transfer once an hour, which is less than ideal for many customers.

If the Transit Board desires, any additional services needed for zero-fare transit could be included as part of a comprehensive systemwide recalibration study. That project scope is anticipated to encompass changes to the overall system. A more thorough investigation of additional services needed is crucial if CyRide were to move to a systemwide zero-fare model.

The most significant impediment to implementing zero-fare service is the current staffing shortage, resulting in weekend service reductions and a number of daily trips operating at or above maximum capacity. The consultant noted this as part of baseline service needs. While CyRide has recently seen an increase in applications and is working diligently to address the hiring shortage, the organization is still operating below the number of drivers needed to run all currently budgeted services. **As the report notes, any additional ridership would push more trips beyond their operating capacity, increasing the number of overloaded CyRide buses.**

At the recent American Public Transportation Association (APTA) conference, staff spoke about ridership and bus loading with other transit agencies. CyRide's current ridership is in line with industry trends, at about 70% of pre-pandemic levels. APTA has noted that, overall, ridership across the nation is still slowly rising. For vehicle capacity, staff has noted a trend of buses being seen as "full" with fewer people on board, likely due to a decreased willingness to stand close to other passengers. It is too early to determine if this is a permanent or temporary shift in rider behavior.

ALTERNATIVES:

1. Defer consideration of zero-fare scenarios until ridership stabilizes, hopefully by the FY 2024/25 budget year, and identify these scenarios through a comprehensive systemwide recalibration study.

2. Direct staff to prepare budget options for review at the November meeting, reflecting one or more of the zero-fare scenarios presented in the consultant's study for potential inclusion in the FY 2023/24 budget.

3. Decide not to implement any of the zero-fare scenarios presented by the consultants.

RECOMMENDATION:

It should be emphasized that CyRide staff supports the City Council's goal for accessible and equitable transportation, along with its sustainability efforts. However, staff is concerned that regardless of the amount of funding made available for this new initiative, it will be extremely difficult to successfully operate a zero-fare system if the current challenging environment we find ourselves continues. Staffing shortages, unknown ridership demand from current and new passengers, and demand for expanded services in areas not currently served pose challenges that will not be easy to overcome at this time. Therefore, it is the recommendation of the Transit Director to approve Alternative #1.

October 26, 2022
2023 HVAC Improvements Plans and Specifications
CyRide Resource: James Rendall

BACKGROUND:

In September of 2021, CyRide received $331,548 in Iowa DOT Public Transit Infrastructure Grant (PTIG) funding to replace obsolete heating, ventilation, and air conditioning (HVAC) equipment in the facility. The total budget for this project is $414,435 and is programmed into the Capital Improvements Plan. The equipment being funded serves the maintenance body repair bay, paint booth, and tire repair area and has been identified in CyRide's Transit Asset Management (TAM) plan as needing replacement. The included plans and specifications would replace existing units with more efficient equipment. In addition, newer equipment would allow these areas to be incorporated into the existing HVAC controls while also providing a healthier work environment through improved air exchanges.

The current cost estimate from the architectural and engineering consultant is $452,770, including a 15% contingency fund, which is higher than the available PTIG funding. To meet the anticipated budget shortfall, the use of a portion of the remaining funds from the 2022 HVAC Improvement Project is recommended. CyRide is currently in the final stages of this project, and no additional costs are anticipated. Therefore, there is approximately $76,000 remaining in the existing grant, and a portion of the remaining funds could be used to cover the anticipated shortfall.

The following amended budget is being proposed for this project:

Funds Available	Dollars
State PTIG Funds	$331,548
Local Grant Match	$82,887
Total Grant Funds Available	**$414,435**
Carry Over from the 2022 HVAC Improvement Project	$38,335
Total Project Budget	**$452,770**

If approved by the Transit Board, CyRide and the Purchasing Division are planning a bid letting date of November 9, 2022, with bids due on December 14, 2022. Bid results will be reported at the December 2022 Transit Board meeting.

ALTERNATIVES:

1. Approve plans and specifications for the 2023 HVAC Improvements Project as presented.

2. Direct staff to work with the A&E consultant and refine the project plans in accordance with Transit Board priorities.

RECOMMENDATION:

The Transit Director recommends approval of Alternative #1. Accepting the plans and specifications would allow CyRide to replace obsolete equipment with modern, energy-efficient alternatives and improve our employees' working environment.

October 26, 2022
Reconditioned Replacement Engine Award of Contract
CyRide Resource: James Rendall

BACKGROUND:

CyRide purchased eleven 40' heavy-duty buses equipped with Cummins ISL engines in 2012. These vehicles are now ten years old, with an average mileage of over 280,000. The engines in buses 107, 108, and 109 are experiencing excessive crankcase pressure due to cylinder wear and, as a result, are mechanically unsound. After evaluating repair options, maintenance personnel has determined that these engines need to be replaced and that purchasing reconditioned engines will provide the best value for CyRide. Reconditioned engines are remanufactured by the original equipment manufacturer, providing a like-new engine with a two-year warranty. CyRide's mechanics will provide the labor to install the reconditioned engines.

CyRide maintenance staff has been in discussions with other transit agency maintenance divisions about the useful life of engines and have found that engines produced after 2010 have an expected life between 250,000 and 300,000 miles before an engine needs to be rebuilt. This data aligns with CyRide's experience and is notably worse than older model vehicles. CyRide staff is evaluating how this will impact long-term fleet maintenance and associated costs in the organization's budget.

On October 13, 2022, CyRide, in coordination with the Purchasing Department, issued a request for quotation (RFQ) No. 2023-067. Bids were due on October 20, 2022. The RFQ required respondents to provide the cost of the base engine, shipping, and "core costs" that will be returned to CyRide when the used engine is returned to the successful bidder. CyRide received two bids in response to the RFQ. After evaluating responses, MHC Kenworth of Des Moines, Iowa, was identified as the lowest bidder. The bids are summarized in the table below and in the AmesBids sheet attached to the board packet.

Bidder	Reconditioned Engine Cost	Engine Core Cost	Shipping Cost	Total Bid Cost
MHC Kenworth	$94,724.61	$16,875.03	$0.00	$111,599.64
O'Halloran International	$97,500.00	$18,000.00	$0.00	$115,500.00

CyRide currently has budgeted five reconditioned engines within the annual parts budget. Staff has evaluated the parts budget and determined that purchasing all three reconditioned engines will not exceed the budgeted amount.

ALTERNATIVES:

1. Approve award of contract for the purchase of three reconditioned engines to MHC Kenworth of Des Moines, Iowa, for a total cost of $111,599.64.

2. Direct staff to proceed according to Transit Board priorities.

RECOMMENDATION:

It is the recommendation of the Transit Director to approve Alternative #1. This option will enable CyRide to make needed repairs to the three buses mentioned above and keep them in a state of good repair as required by the Federal Transit Administration.

							MHC Kenworth		O'Halloran International	
							Total Price	$111,599.64	Total Price	$115,500.00
Line #	Description	Mfgr	Mfgno	QTY	UOM	Estimated	Unit	Extended	Unit	Extended
1	RECONDITIONED ENGINE #1 FOR 40-FOOT 2(	Cummins		1	EA		**$37,199.88**	$37,199.88	$38,500.00	$38,500.00
1.1	Reconditioned Engine Cost			1	EA		**$31,574.87**		$32,500.00	
1.2	Core			1	EA		**$5,625.01**		$6,000.00	
1.3	Shipping Cost to CyRide			1	EA		$0.00		$0.00	
1.4	Shipping Cost to Return Core			1	EA		$0.00		$0.00	
2	RECONDITIONED ENGINE #2 FOR 40-FOOT 2(	Cummins		1	EA		**$37,199.88**	$37,199.88	$38,500.00	$38,500.00
2.1	Reconditioned Engine Cost			1	EA		**$31,574.87**		$32,500.00	
2.2	Core			1	EA		**$5,625.01**		$6,000.00	
2.3	Shipping Cost to CyRide			1	EA		$0.00		$0.00	
2.4	Shipping Cost to Return Core			1	EA		$0.00		$0.00	
3	RECONDITIONED ENGINE #3 FOR 40-FOOT 2(	Cummins		1	EA		**$37,199.88**	$37,199.88	$38,500.00	$38,500.00
3.1	Reconditioned Engine Cost			1	EA		**$31,574.87**		$32,500.00	
3.2	Core			1	EA		**$5,625.01**		$6,000.00	
3.3	Shipping Cost to CyRide			1	EA		$0.00		$0.00	
3.4	Shipping Cost to Return Core			1	EA		$0.00		$0.00	

October 26, 2022
Monthly Report
CyRide Resource: Barbara Neal

1. American Public Transit Association (APTA) Conference

Chris Crippen and I attended the American Public Transportation Association (APTA) conference in Seattle on October 9-13. While there, Chris and I participated in a meeting with Kimberly Sledge of the Federal Transit Administration regarding the Bus and Bus Facility (Section 5339(b)) and Low/No Emissions (Section 5339(c)) competitive grant programs. Ms. Sledge explained recent changes to these programs, shared stories from successful recent awards, and participated in a question-and-answer session with the audience. We also attended many informative sessions during the conference that focused on transit workforce shortages, discussions on infrastructure and supply chain concerns, pros and cons of zero-fare transit services, rebuilding ridership and enhancing the passenger experience, integrating technology and micromobility into transit, and current federal legislative priorities.

2. Hiring Update

Since the part-time wage increased on September 16, there has been a notable increase in the number of applications for new drivers. In 2021, there were 35 applicants from September 16 through mid-October. This year, there were 54 applicants during that same time frame, which is a 54% increase. Although other factors may have helped drive this increase, we believe the wage increase is the most significant incentive. We are also starting to get applicants looking for 30 or more hours, which is where we most need drivers. With more drivers coming out of training, we will be restoring service to the #3 Blue route on the weekends after Thanksgiving break. This route has experienced high ridership on the weekends and needs extra capacity. The #1 Red route is not utilized as much, and tentatively, this route will be restored to full service after winter break. Additionally, two drivers were promoted to the new full-time driver positions approved by the board in August, which has helped increase staffing levels on evenings and weekends.

3. Facility Discussion

CyRide has been working with the on-call Architectural and Engineering firm to develop plans and specifications for a facility expansion at the current site to allow all vehicles to park inside and meet additional facility operational needs. This project would utilize existing local funding set aside by the Transit Board to support a possible FY 2023 Bus and Bus Facilities Program grant application. Staff plans to bring more information about this facility project to the Transit Board for review at the November meeting.

4. IDOT Certified Commercial Examiner

During October, CyRide's Chief Safety Officer, Kevin Gries, has been attending Certified Commercial Examiner (CCE) training sessions as required to administer third-party CDL examinations for CyRide. He also attended one week of classroom training in Ankeny and two weeks of on-the-job training in Ames, where he has been learning and practicing all aspects of CDL examinations with the Iowa DOT. This training has been going well, and Kevin is expected to begin administering CDL examinations earlier than anticipated, potentially starting November 1. Providing in-house CDL examinations for our new drivers will help expedite the hiring and training process and significantly impact staffing levels.

5. Ames Resident Satisfaction Survey

The results of the 40th annual Resident Satisfaction Survey have been released, which collected information from city residents about a variety of City of Ames services, including CyRide. Overall, reported satisfaction with CyRide stayed about the same, decreasing less than one percent from last year. In this year's survey, 93.9% of respondents indicated they were either very or somewhat satisfied with CyRide, with 6.1% being very or somewhat dissatisfied. Last year 94.4% of respondents were very or somewhat satisfied, and 5.6% were very or somewhat dissatisfied.

There were approximately 40 comments received in the survey specific to CyRide, a decrease from the 166 comments received last year. The general category for each response was as follows:

- Schedule / Routes (8)
- Bus Stops (3)
- Other Transportation /No Need (6)
- Other Comments (13)
- Positive Comments (10)

Respondents highlighted several areas where satisfaction with CyRide could be improved, including service modifications. CyRide will review these suggestions and incorporate them into future planning where appropriate.

The full Resident Satisfaction Survey is available on the City of Ames website at https://www.cityofames.org/home/showpublisheddocument/68591

Ames Fareless Transit Study

DRAFT Final Report

October 2022

NELSON NYGAARD

CITY OF Ames

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1 INTRODUCTION

CyRide is a unique transit agency in that over 90% of the system's ridership boards without paying a fare at the point of service, due to a universal pass agreement with Iowa State University's (ISU) Student Government. In part because of this agreement, a very small percentage of CyRide's revenue is generated directly at the farebox. Due to this dynamic, CyRide is interested in evaluating the potential for full or partial zero-fare service.

STUDY GOALS AND OBJECTIVES

This fareless transit study aligns with goals that were previously identified in both the City of Ames Climate Action Plan and by the Ames City Council. The Climate Action Plan establishes a target of reducing greenhouse gas emissions to reach net-zero in 2050 and includes six "Big Moves" that need to be completed to reach this target. One of these Big Moves includes increasing Active Transportation and Transit Use, which can be achieved in part through zero-fare service options on CyRide.

Ames City Council also established a series of goals and tasks that will align with the city's values, one of which includes "Implement additional accessible and equitable transportation options for the community (transit, bike, pedestrian, micromobility, rideshare, and others)." This goal includes several tasks related to studying the impacts of zero-fare service for CyRide.

This study directly aligns with these two established initiatives and seeks to identify the anticipated impacts for various approaches to zero-fare service. Specific goals and objectives for this zero-fare evaluation include:

- Identify impacts and best practices from peer agency experiences with zero-fare service.
- Identify the tradeoffs, considerations, and operational impacts associated with various zero-fare service alternatives.
- Identify potential challenges and obstacles for zero-fare service.

REPORT ORGANIZATION

In addition to this Introduction, the report is organized into four chapters:

- **Chapter 2 Existing Conditions.** This chapter highlights fare policies, pricing, fare structure, and revenue and ridership trends for CyRide.
- **Chapter 3 Peer Review and Best Practices.** This chapter provides an overview of findings, observed impacts, and identified best practices for zero-fare agencies with similar operating conditions as CyRide.
- **Chapter 4 Systemwide Zero Fare Scenario Evaluation.** This chapter summarizes the costs, benefits, tradeoffs, and operating implications associated with operating systemwide zero-fare transit service.
- **Chapter 5 Partial Zero-Fare Scenarios.** This chapter builds upon the systemwide zero-fare scenario and identifies the costs, benefits, tradeoffs, and operating implications of several partial zero-fare scenarios using a more targeted approach.

2 EXISTING CONDITIONS

This chapter presents the current conditions of CyRide ridership and financial trends, fare policy and usage, and fare collection costs. Analyzing CyRide's current fare policies and ridership sets a baseline for evaluating the elimination of fares either system-wide, for specific riders, or during defined periods.

KEY FINDINGS

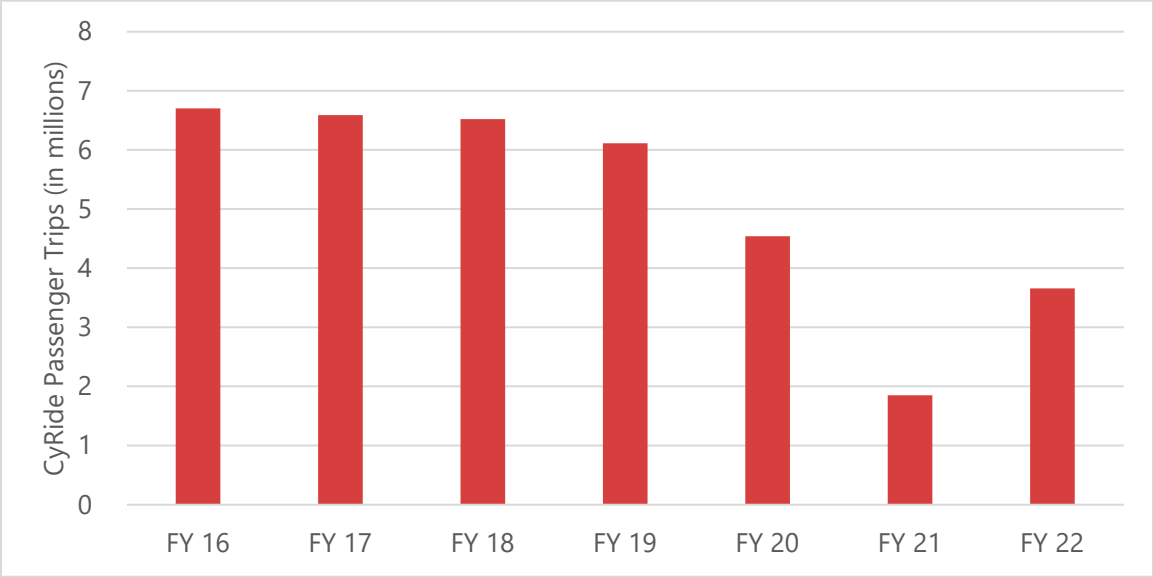
- **Most CyRide passengers do not pay a fare to board the bus.** Ninety-six percent of CyRide passengers do not pay a fare at the farebox, but rather pay through student fees. The agency currently does not collect fares on three ISU campus circulator routes.
- **Most CyRide passengers are low-income.** Over half of CyRide riders have an annual household income below the Federal Poverty Guidelines, including both students and riders not associated with ISU.
- **CyRide is primarily funded through contributions from the ISU administration, ISU student government, City of Ames, through a local property tax levy, and state and federal grants.**
- **Passenger fares make up a small proportion of overall funding.** In FY22, CyRide collected less than $150,000 in passenger revenue at the farebox (2% of operating revenue).
- **CyRide has a relatively low base fare.** CyRide's base fare is priced at $1.00 with half priced discounts for seniors, people with disabilities, K-12 students, and Medicare/Medicaid card holders.
- **CyRide spends about $31,500 per year to collect fares.** This equates to about 21% of passenger fare revenue going toward to the cost of fare collection. With a small portion of riders paying fares at the farebox, there are opportunities for the agency to improve operating efficiency by eliminating fare collection on board vehicles.

CYRIDE RIDERSHIP

Ridership Trends

Prior to the pandemic, CyRide's ridership hovered between six to seven million passenger trips per year (Figure 2-1). During FY20, while ISU transitioned to hybrid learning due to the Covid-19 pandemic and remote work became popular, CyRide ridership decreased by approximately two million trips. In FY22, ridership has started to rebound though remains at about 60% of pre-pandemic levels, consistent with national ridership trends.

Figure 2-1 Passenger Trips (FY16-22)



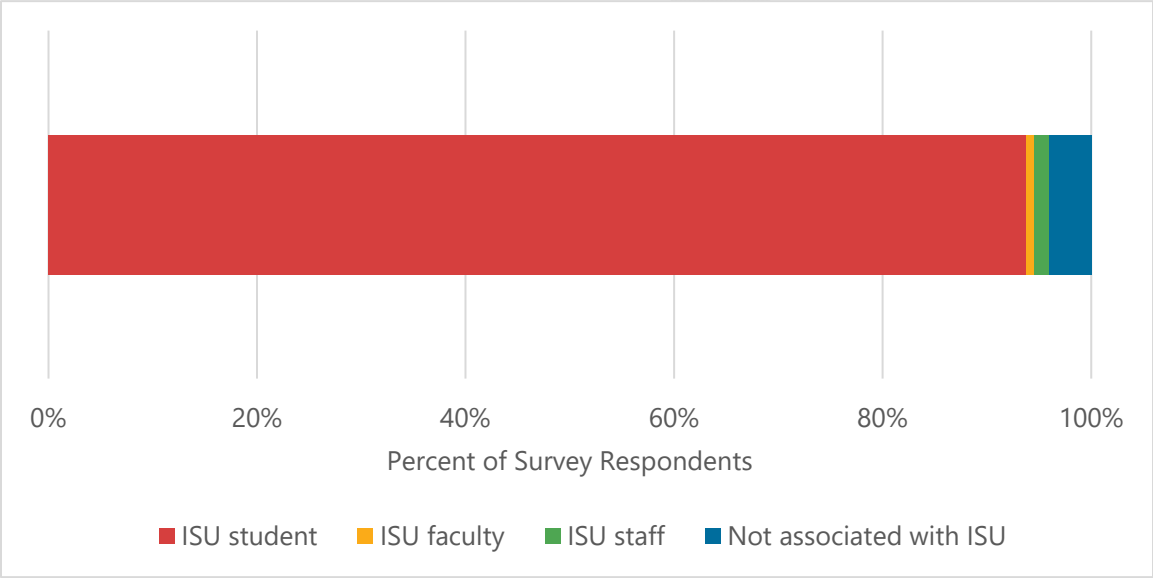
Source: CyRide, 2022

Rider Profile

ISU Association

A majority of CyRide passengers do not pay a fare at the farebox, but rather pay through student fees. The agency's most recent on-board survey, completed in 2017, found that approximately 94% of CyRide's ridership is generated by ISU students, followed by 2% ISU faculty or staff (Figure 2-2). The remaining 4% of ridership is not associated with ISU.

Figure 2-2 Ridership by Association with ISU (2017)



Source: CyRide On-Board Survey, 2017

Household Income

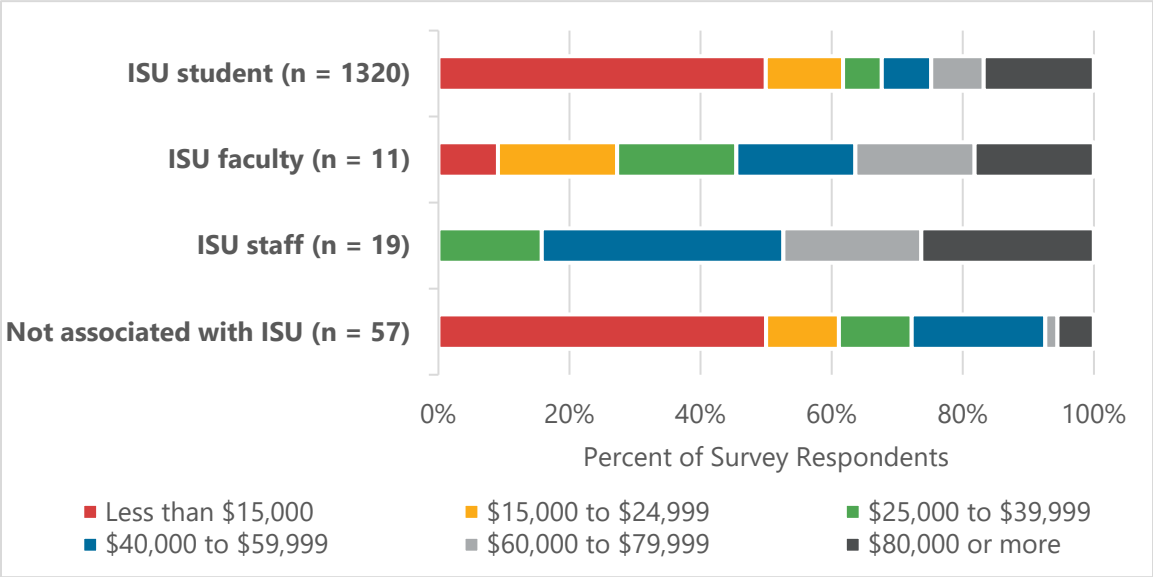
With a small portion of riders paying fares at the farebox, there are opportunities for the agency to improve operating efficiency by eliminating fare collection, particularly when the majority of fare paying riders are low-income. As seen in Figure 2-3, over half (56%) of riders have an annual household income below the Federal Poverty Guidelines ($23,000 for a household of 3)[1]. This percentage is representative of both ISU students, as well as those not associated with ISU (Figure 2-4).

Figure 2-3 Rider Household Income (2017)

Source: CyRide On-Board Survey, 2017

[1] U.S. Federal Poverty Guidelines Used to Determine Financial Eligibility for Certain Programs, https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines

Figure 2-4 Rider Household Income by ISU Association (2017)

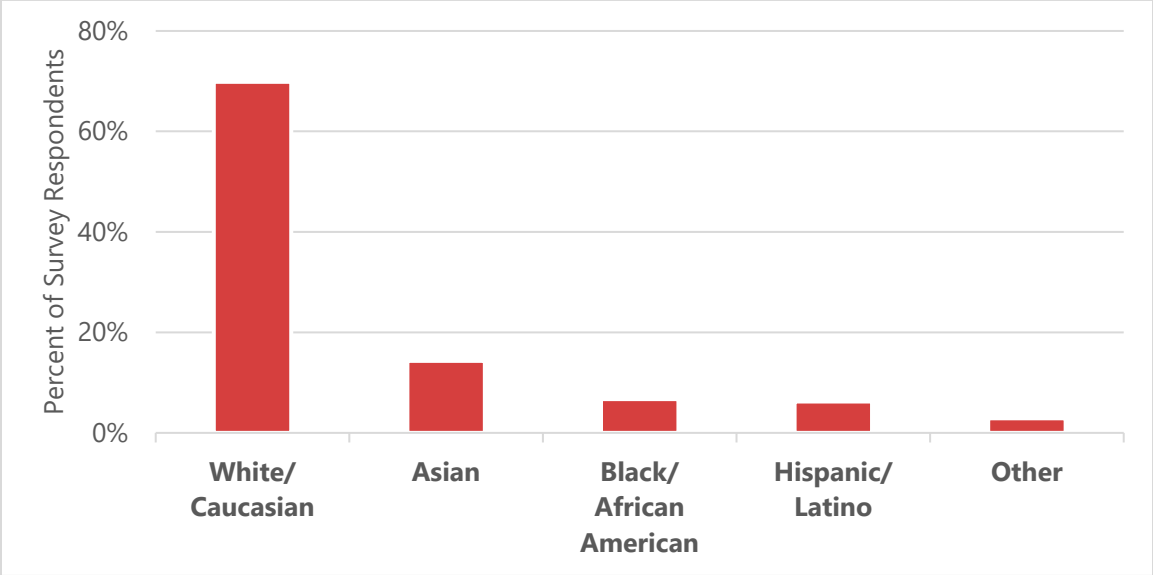


Source: CyRide On-Board Survey, 2017

Race and Ethnicity

CyRide passengers identify as majority White/Caucasian (68%), followed by small proportions of Asian, Black, and Hispanic/Latino riders (Figure 2-5).

Figure 2-5 Ridership by Race/Ethnicity (2017)



Source: CyRide On-Board Survey, 2017

REVENUE AND COST TRENDS

Transit Revenue

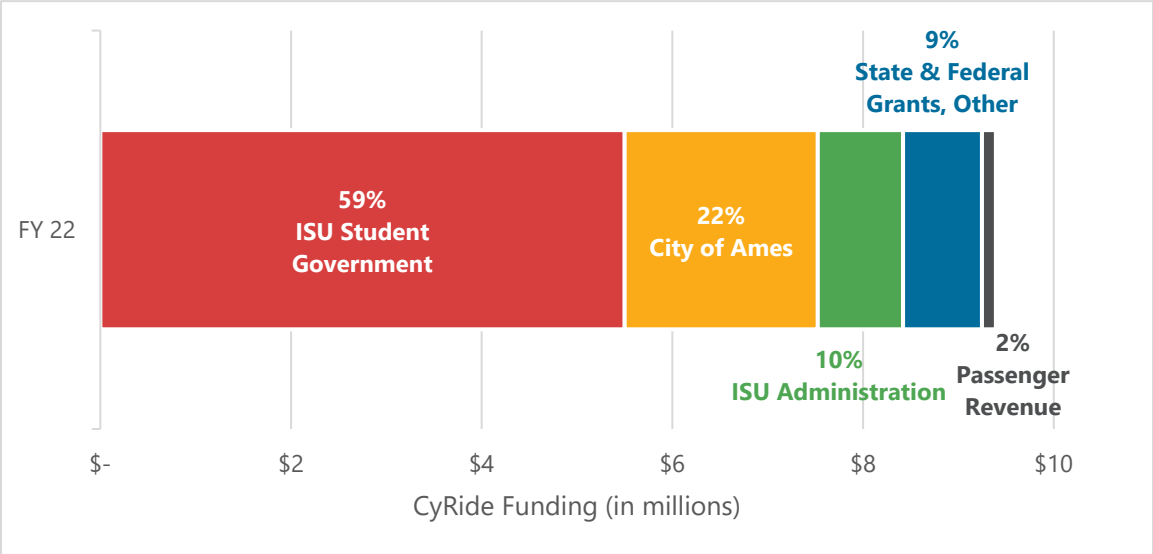
CyRide receives funding from local, state, and federal sources. Major sources include:

- **Iowa State University Student Government**: ISU Student Government contributes to CyRide services through student activity fees. This partnership allows all ISU students to ride without paying a fare at the farebox. ISU students paid effectively $0.62 per ride in FY 22.
- **City of Ames**: CyRide receives a tax levy from property owners in the City of Ames.
- **Iowa State University Administration**: ISU Administration contributes funds to as one of the three local funding partners.
- **State & Federal Grants**: CyRide receives operating and capital assistance from the State and Federal government. These funds have remained stable over time.
- **Passenger Revenue**: The sale of passes, ticket products, and fares paid on-board make up passenger revenue. These amounts are the smallest funding source for CyRide.

Figure 2-6 outlines FY 22 funding from all major sources. Contributions from ISU Student Government make up the most significant amount of operational funds, followed by the City of Ames. The smallest portion of operational funds come from passenger revenue, raising $146,000 (or 2%) out of a total $9.3 million.

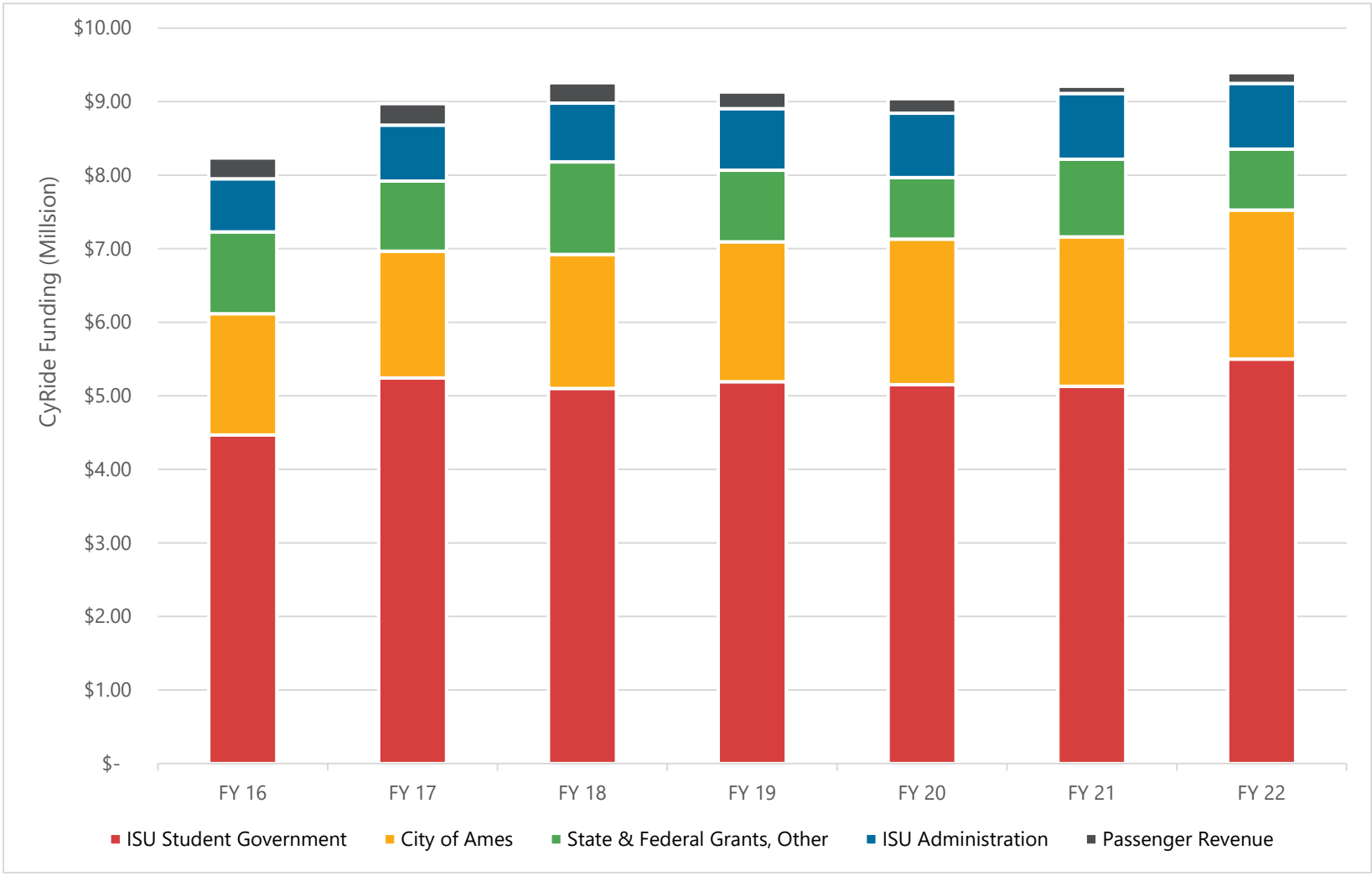
Contributions from ISU Student Government, ISU administration, and state and federal funds have remained relatively stable over the past six years (Figure 2-7). Passenger revenue was lower in FY20 and FY21 due to low ridership caused by the COVID-19 pandemic.

Figure 2-6 Operating Revenue Sources (FY22)



Source: CyRide, 2022

Figure 2-7 Historical Operating Revenue Sources (FY16-22)

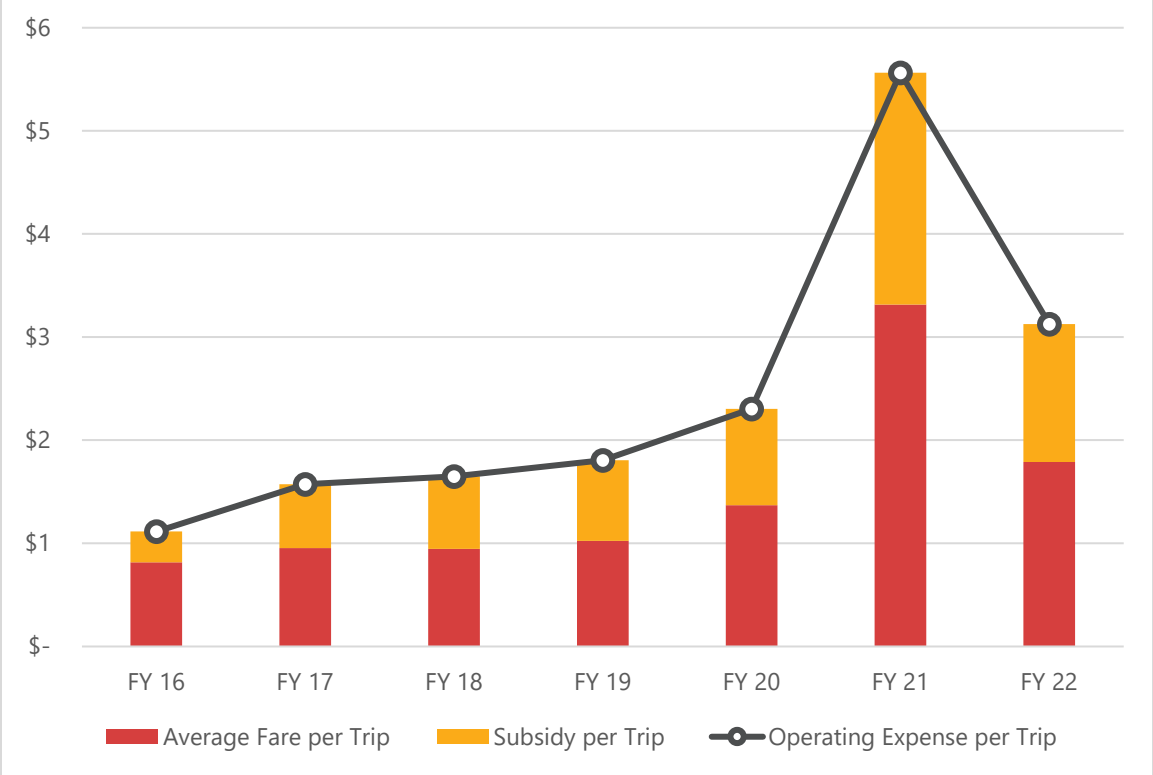


Source: CyRide, 2022

Operating Costs

CyRide's operating expense per trip had been trending upwards prior to the pandemic. This trend is in line with many transit agencies across the country. After the pandemic led to a loss of ridership while operating expenses stayed relatively stable, operating costs per trip remain high at about $3.00 in FY22 (Figure 2-8). Meanwhile, subsidy per trip, or the gap between cost per trip and average fare per trip, has increased by about 70% since FY19.

Figure 2-8 Annual Operating Expense per Trip Vs. Average Fare per Trip (FY16-22)



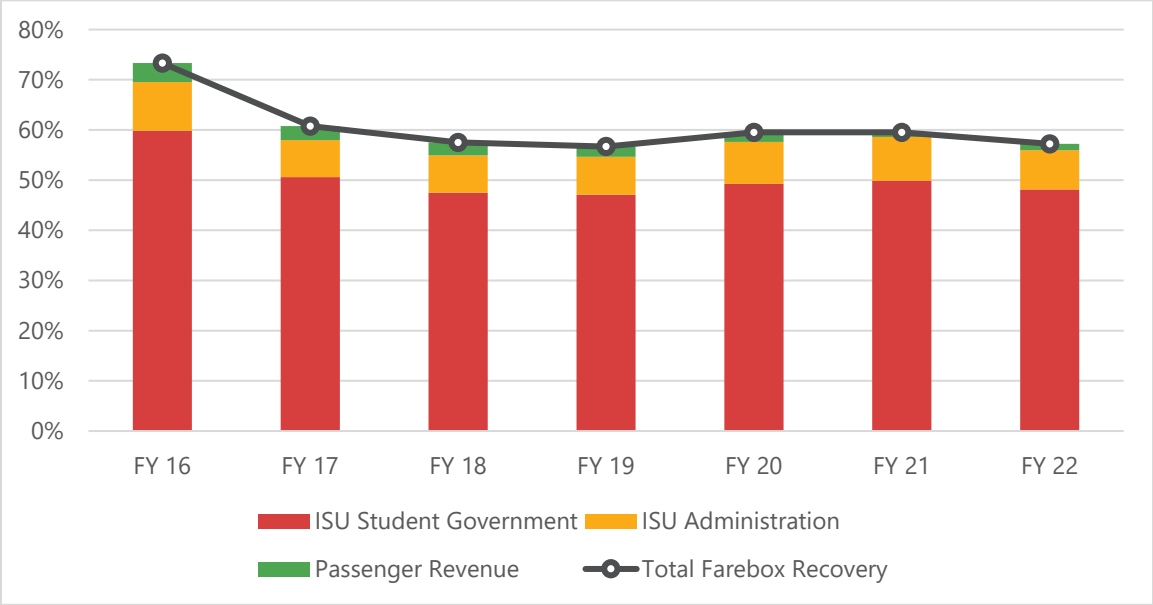
Source: CyRide, 2022

Farebox Recovery

Farebox recovery is the ratio of operating expenses covered by farebox revenue. For the purposes of this report, farebox revenue is considered as any revenue that is collected from passengers at the farebox through cash or a pre-paid pass (passenger revenue) or through pass partnerships.

As seen in Figure 2-9, overall farebox recovery has remained relatively stable since 2017. CyRide's farebox recovery is higher than most transit agencies because funds received from ISU are included in the calculation. Even though most passengers (i.e., students) are not putting any fare in the farebox when they board, they are paying for their ride with student fees each semester.

Figure 2-9 Farebox Recovery by Fare Revenue Source (FY16-22)



Source: CyRide, 2022

ZERO-FARE POLICY

Currently, three ISU campus circulator routes (Routes 21 Cardinal, 23 Orange, and 25 Gold) do not require proof of fare payment on board the vehicle for any riders. These routes cover significant areas of the ISU campus and student housing neighborhoods.

FARE STRUCTURE

On all fare collecting routes, CyRide offers several fare and pass options for riders (Figure 2-10). CyRide's base fare is $1.00. Seniors ages 65 and older, people with disabilities, K-12 students, and Medicare/Medicaid cardholders qualify for a reduced fare. The agency's current pass structure relies heavily on ISU's term schedules to allow university employees to only purchase passes for the times they are needed. Most passes are prorated to reduce in cost as the academic semester carries on.

Figure 2-10 Current Fare Structure

Fare Type		Price
Regular Fare		$1.00
Reduced Fare K-12 Students; Medicare Cardholders; 65 or older, Persons with a disability		$0.50
Transfers		Free
Passes		
10-Ticket Book	Regular Fare	$10.00
	Reduced Fare	$5.00
Monthly Pass Valid for a calendar month	Regular Fare	$35
	Reduced Fare	$17
Summer Pass May to August	Regular Fare	$80
	Reduced Fare	$40
	ISU Subsidized Fare	$50
Fall Semester Pass August to December *Prices drop in September*	Regular Fare	$130/$100
	Reduced Fare	$65/$50
	ISU Subsidized Fare	$80/$60
Winter Pass November to March *Prices drop in December*	Regular Fare	$120/$80
	Reduced Fare	$60/$40
	ISU Subsidized Fare	$70/$50
School Year Pass August to June *Prices drop in September, December, and February*	Regular Fare	$260/$230/$130/$100
	Reduced Fare	$130/$115/$65/$50
	ISU Subsidized Fare	$155/$140/$80/$60

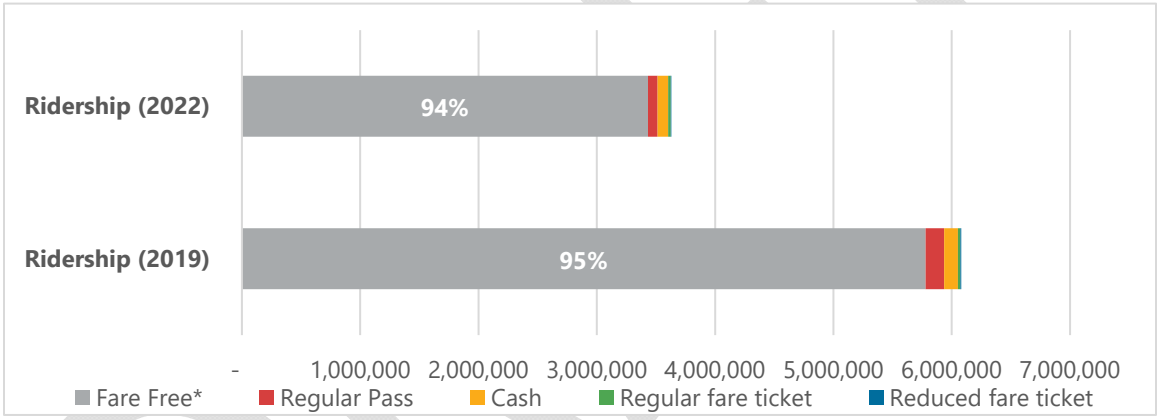
Recent Fare Changes

Fares were reduced in 2018 following recommendations of a previous study. The single trip base fare was reduced by $0.25 and the single trip reduced fare was reduced by $0.10. Monthly passes were reduced $5 and semester passes were reduced by $30. A reduction of $60 was seen with school year passes from $320 to $260. Reduced fares additionally decreased with this 2018 change.

FARE USAGE

Due to the high proportion of student riders, only 5-6% of riders paid with cash or a pass (Figure 2-11). Of those riders, most passengers pay with a regular pass or with cash (Figure 2-12).

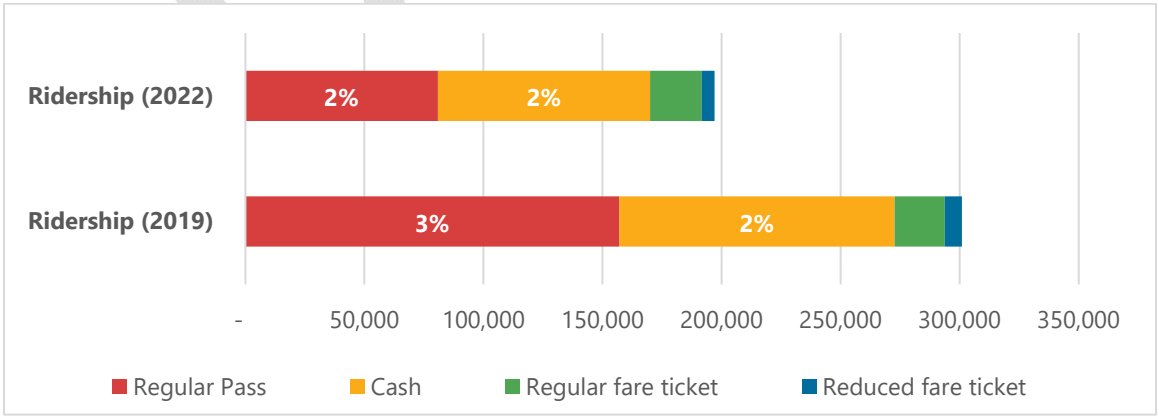
Figure 2-11 Ridership by Payment Type (FY19 & FY22)



Source: CyRide, 2022

* Fare Free includes ISU students, children under 5 years old, personal care attendants (PCAs) & Moonlight Express

Figure 2-12 Ridership by Payment Type (Excluding Fare Free) (FY19 & FY22)



Source: CyRide, 2022

FARE COLLECTION COSTS

In total, CyRide spends about $31,500 every year to collect fares on board the vehicles, or 21% of passenger fare revenue (Figure 2-13). Every other week, CyRide staff count and reconcile collected fares by hand. As of 2017, this labor-intensive process requires five mechanic and seven operations staff members for a total 12 hours of staff labor, in addition to lane workers who remove the boxes from the bus for an additional 4.6 hours of labor. The current fare reconciliation process is cumbersome, and leaves potential for fraud and human error.

Figure 2-13 CyRide Annual Fare Collection Costs (2017)

Fare Collection Category	Annual Costs
Administrative	$15,000
Fare Media	$2,500
Farebox Maintenance	$14,000
Total	**$31,500**

Source: CyRide, 2017

3 PEER REVIEW AND BEST PRACTICES

Understanding the lessons learned from agencies that have implemented zero-fare service provides key insights and best practices for CyRide.

KEY FINDINGS

- **Peer agencies reported significant ridership increases.** On average, peers reported a 73% increase in fixed-route ridership and a 32% increase in paratransit ridership within three years of zero-fare service.
- **Fixed-route revenue hour increases varied across peer agencies.** Peers reported a range of additional service requirements, as low as a 5% increase for Corvallis and as high as a 48% in Chapel Hill. Both Mountain Line and Chapel Hill Transit implemented zero-fare service along with service expansions which may inflate these numbers.
- **Peers with higher revenue hour increases reported lower levels of productivity increases.** This suggests that zero-fare service may be effective at filling excess on-board capacity on lower productivity routes or time periods.
- **Peers reported relatively consistent paratransit service increases between 28% and 34% after three years of zero-fare service.**
- **Additional vehicle requirements varied between the peer agencies.** Corvallis only required one additional fixed-route vehicle while Chapel Hill Transit required 20. Peers required a maximum of three additional paratransit vehicles after three years of zero-fare service.
- **Fixed-route operating costs varied between peers but were consistent for paratransit service.** Paratransit costs increased on average by 27% after three years of zero-fare service. Fixed-route costs increased between 7% and 39% but may be

partially inflated by service expansions occurring simultaneously with zero-fare implementation.

- **Common alternative funding sources include partnerships with local universities, government agencies, non-profits, and businesses (Mountain Line & Chapel Hill) as well as exploring new transportation fee structures (Corvallis).**

PEER REVIEW

Whether a transit agency charges a fare at the point of service includes a range of costs and benefits. Key benefits associated with collecting a fare include directly generating revenue, reducing reliance on state and federal funding, and supporting the perception that the public helps pay for transit services.

Conversely, operating zero-fare service simplifies accounting systems, reduces the need for secure cash storage, and eliminates administrative burdens for the agency related to distributing fare media and counting and reconciling cash. Other benefits to zero-fare service include increased ridership and enhanced operating efficiency.

This chapter identifies specific examples of costs, benefits, and lessons learned from three agencies that have implemented zero-fare service on a permanent basis, including:

- Mountain Line (Missoula, MT)
- Chapel Hill Transit (Chapel Hill, NC)
- Corvallis Transit System (Corvallis, OR)

All three peer agencies represent transit agencies operating in areas with similar population sizes and large local universities (University of Montana, University of North Carolina – Chapel Hill, Oregon State University). The service area populations for the peer agencies range from 54,000 to 80,000, as shown in Figure 3-1. While CyRide has the smallest service area population of the peer agencies, it has the second highest ridership, revenue hours, and operating costs. CyRide also has the highest productivity, in terms of passengers per revenue hour.

From a direct comparison perspective, CyRide's operating characteristics appear closely aligned with Chapel Hill Transit. However, because a significant portion of CyRide's existing ridership already rides with zero-fare at point of service, the other peer agencies continue to offer relevant lessons learned and best practices for an agency of CyRide's size.

Figure 3-1 Peer Agency Fixed-Route Operating Statistics (2020)

Agency	Service Area Population	Annual Passenger Trips	Annual Revenue Hours	Annual Operating Cost	Productivity
CyRide	54,000	4,570,000	119,000	$10,356,000	38.3
Mountain Line	73,000	1,226,000	46,000	$5,608,000	26.9
Chapel Hill	80,000	4,656,000	129,000	$17,112,000	36.0
Corvallis	61,000	948,000	36,000	$3,721,000	26.3

Source: NTD, 2020

Impacts evaluated in this peer review include changes to ridership, service levels and staffing requirements, capital requirements (including additional vehicles), policy considerations, and approaches for maintaining adequate funding levels to support service levels.

Mountain Line

In 2013, Missoula, MT voters passed a $1.7 million levy to expand Mountain Line services and fund service increases, which included an additional 15-minute frequency Bolt! Route, and later evening service until 10 p.m. In addition, Route 2 service was upgraded to Bolt! Service, and service on Routes 1, 2, 6, and 7 were extended until 10 p.m. In conjunction with these improvements, Mountain Line also introduced a three year zero-fare demonstration project in January 2015 that has since been made permanent.

Ridership Changes

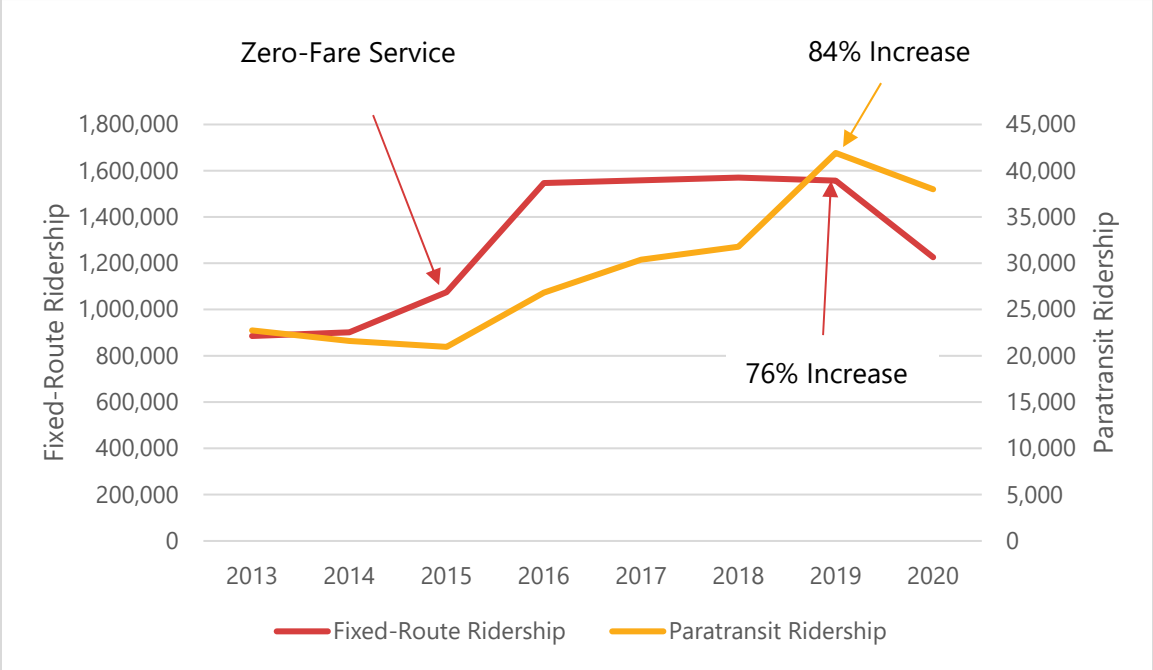
In the first full year after implementing service improvements and zero-fare service, from 2015 to 2016, fixed-route ridership increased by 44% and paratransit ridership increased by 28% (Figure 3-2). In the first three years of zero-fare service, fixed-route ridership increased by 73% accounting for 657,000 additional passenger trips while paratransit ridership increased by 41% (9,000 additional trips).

Fixed-route ridership plateaued in 2016 and remained relatively consistent until 2020, while paratransit ridership continued to increase, reaching a high in 2019 before decreasing during the Covid-90 Pandemic. Between 2013 and 2019, fixed-route ridership increased by 76% and paratransit ridership increased by 84%. While ridership declined in 2020, including a 21% decrease for fixed-route and a 9% decrease for paratransit, Mountain Line's pandemic related ridership loss is notably higher than national average.

Additionally, Mountain Line's productivity (passengers per revenue hour) increased from 19.8 in 2013 to 31.0 in 2017, a 56% increase after three years of zero-fare service. Both of these

productivity figures are notably lower than CyRide's productivity for 2019 of 47.9 passengers per revenue hour. This suggests that Mountain Line may have had excess operating capacity prior to implementing zero-fare service.

Figure 3-2 Mountain Line Zero-Fare Ridership Impacts



Source: NTD, 2020

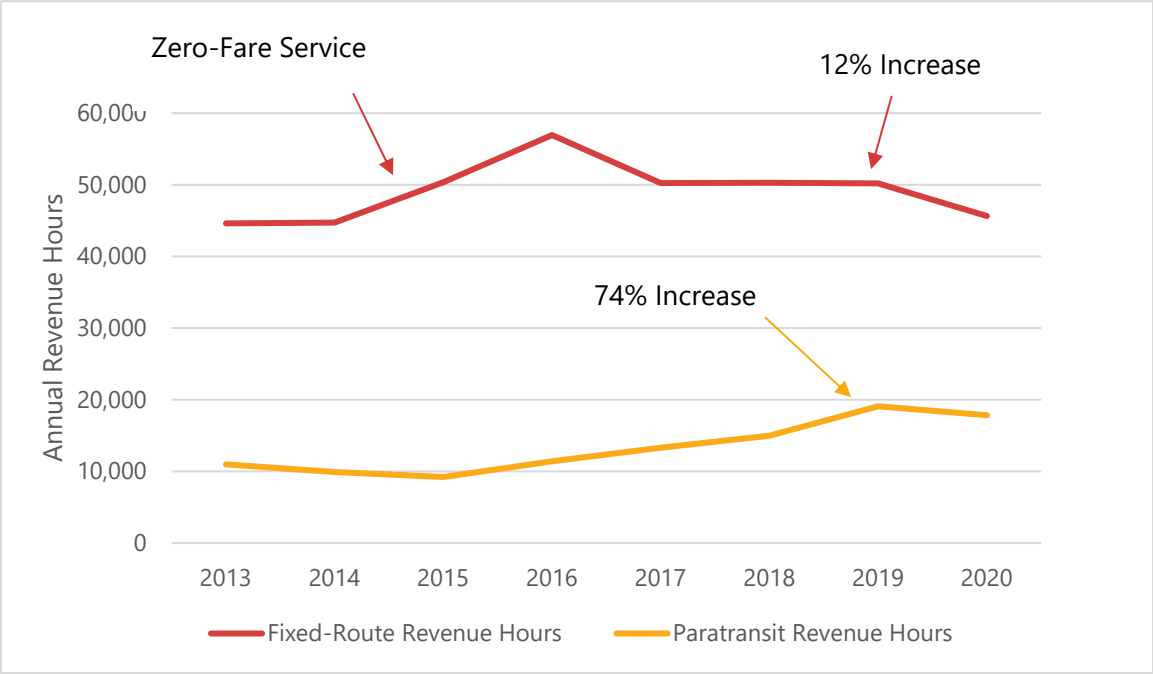
Service Increases and Staffing Needs

Mountain Line's transition to zero-fare service coincided with a number of service improvements that required increasing annual revenue hours for implementation. Over the first three years of zero-fare service, fixed-route revenue hours increased by 5,500 (12%) and paratransit revenue hours increased by 3,400 (34%).

This increase for fixed-route service is likely related to service improvements, not zero-fare service. However, paratransit revenue hours also increased initially and have continued to increase since 2015 (Figure 3-3). Between 2013 and 2019, fixed-route revenue hours increased by 12% while paratransit revenue hours continued to increase, reaching as high as a 74% increase by 2019.

While some of this increase may be related to longer service span on some routes, the increase in paratransit revenue hours is more likely related to zero-fare service as the agency is required to meet the increased demand for paratransit service.

Figure 3-3 Mountain Line Zero-Fare Revenue Hours Impacts

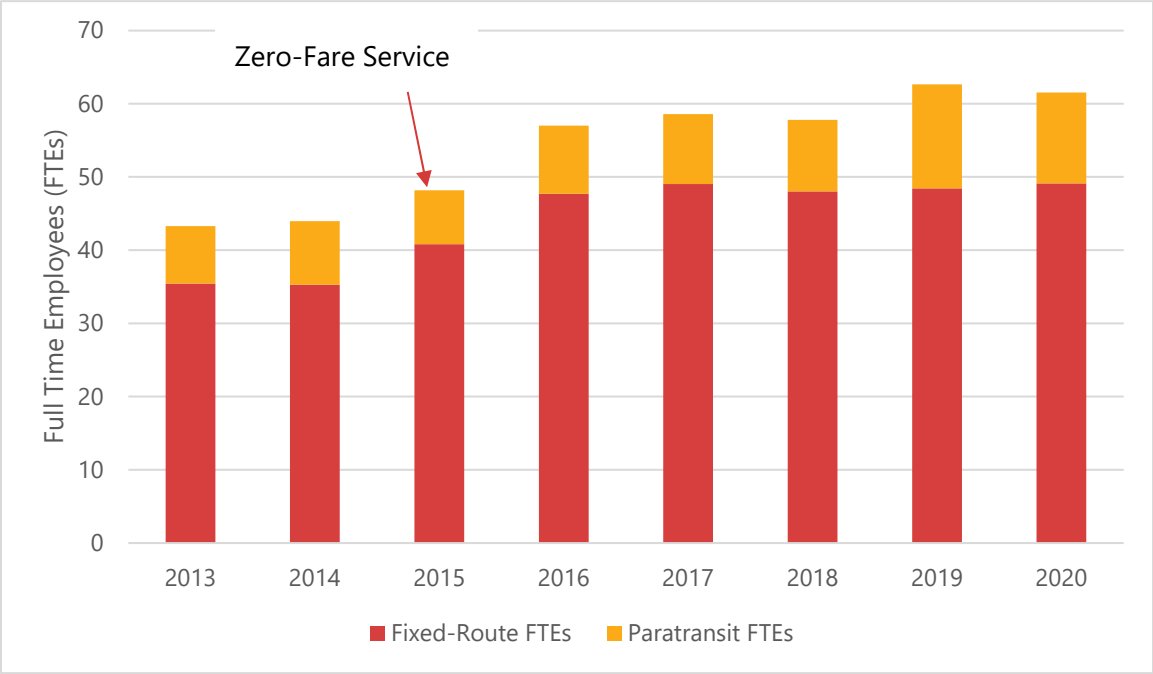


Source: NTD, 2020

Additional staffing requirements is another measure of how much additional service may be required by transitioning to zero-fare service. For Mountain Line, full time employees (FTEs) assigned to fixed-route service increased by 39% from 35 in 2013 to 48 in 2019 (Figure 3-4), although this increase is likely due to service improvements, rather than zero-fare service.

Over the same time-period, paratransit FTEs increased by 81% from 8 FTEs in 2013 to 14 FTEs in 2019. However, this includes a five FTE increase in 2019 alone. In the first three years of zero-fare service, paratransit FTEs increased by 1 FTE, a 10% increase. This increase in FTEs is likely related to additional drivers, dispatchers, and maintenance time needed to meet the growing demand in paratransit service associated with zero-fare operations.

Figure 3-4 Mountain Line Zero-Fare Full Time Employees Impacts



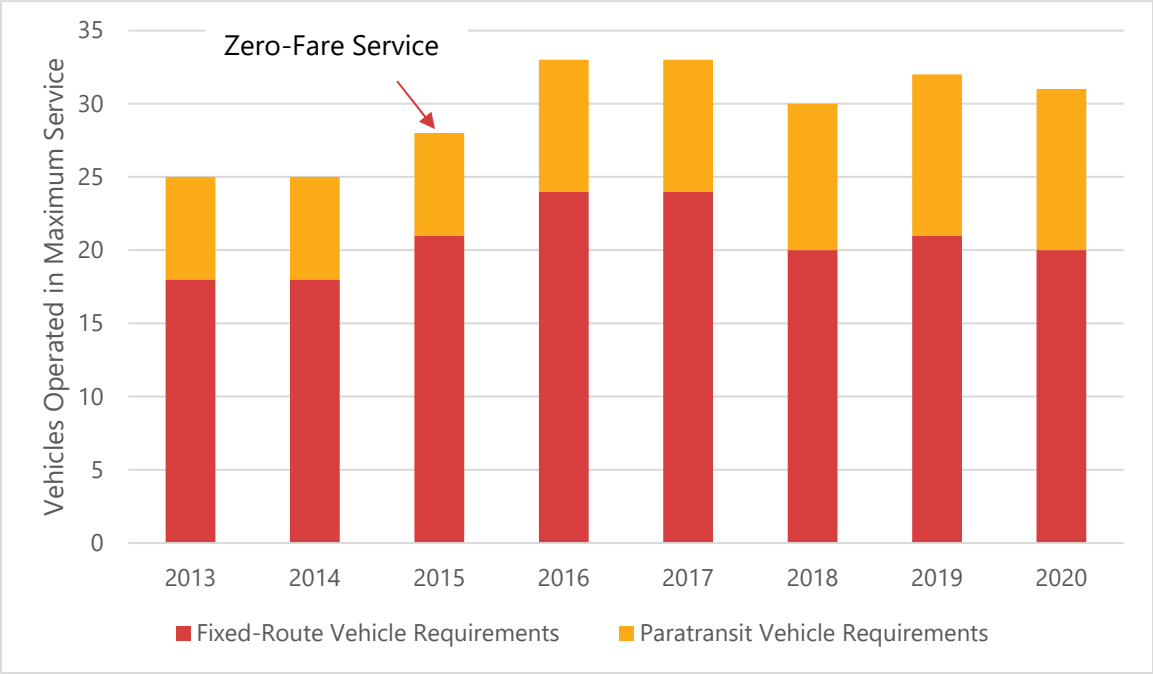
Source: NTD, 2020

Additional Capital Requirements

As demand for service increases, there may also be additional capital expenses, particularly, purchasing additional vehicles needed to meet the growing demand for service. Over the seven-year period from 2013 to 2019, the number of vehicles required to operate maximum service for Mountain Line increased by three vehicles for fixed-route service and four vehicles for paratransit service (increases of 17% and 57% respectively), as shown in Figure 3-5.

However, Mountain Line's fleet size has generally fluctuated over time. In the first three years of zero-fare service, these increases accounted for 6 additional fixed-route vehicles (33% increase) and two additional paratransit vehicles (29% increase).

Figure 3-5 Mountain Line Vehicles Required for Maximum Service



Source: NTD, 2020

System Policies

Mountain Line maintains a passenger code of conduct to ensure that unruly and disruptive behavior is minimized. This code of conduct includes a policy requiring all passengers to disembark after one round trip. This is a common policy for transit agencies (zero-fare or not) that may prevent "destination-less passengers" from sheltering onboard vehicles.

Operating Costs and Funding Sources

Prior to implementing zero-fare service, Mountain Line charged $1.00 per trip on fixed-route service and collected approximately $335,000 in annual farebox revenue that needed to be replaced by another funding source. To bridge this funding gap, a new partnership called Sustainable Missoula was developed between Mountain Line, the City of Missoula, the University of Montana, the Missoula Downtown Association, local non-profit organizations, and major employers in the region to provide funding in support of the zero-fare program.

Sustainable Missoula started with 11 member organizations and has since grown to 24 members. The program has been successful for leveraging partnerships with the University of Montana and local employers to provide sufficient revenue for the agency, advertise Mountain Line service, and foster economic development and access to employment opportunities in Missoula. From a revenue perspective, Mountain Line has been able to

generate more revenue from their funding partnership (approximately $500,000 per year) than they had previously generated through farebox revenue, while reducing administrative costs associated with fare collection. Additionally, the increased ridership on the system qualified the agency for new grant funding opportunities, including approximately $3 million in federal 5339c Low or No Emissions and 5339 Bus and Bus Facilities grants. The growing list of community partners participating in Sustainable Missoula include:

- The University of Montana
- Associated Students of the University of Montana
- City of Missoula
- County of Missoula
- Missoula Metropolitan Planning Organization
- St. Patrick Hospital
- Community Medical Center
- Missoula County Public Schools
- Missoula Aging Services
- Missoula Downtown Association
- Missoula Parking Commission
- Missoulian
- Southgate Mall
- Destination Missoula
- Homeword, Inc

In November 2020, after operating zero-fare service for five full years, Missoula voters passed a $3.1 million property tax levy to continue funding zero-fare service and make additional service improvements. This measure passed with 60% of votes cast in favor of the measure, the largest margin of any tax increase initiative in over a decade, indicating the community was overwhelmingly willing to pitch in to support the agency and continue the zero-fare program.

Chapel Hill Transit

Chapel Hill Transit (CHT) transitioned from charging fares to operating fare free in 2002. Shortly after this change, annual ridership began to increase and ultimately grew from approximately 3.5 million to nearly 7 million between 2002 and 2012. CHT credits this growth—in part—to its decision to operate fare free. In 2015, financial constraints led CHT and the CHT Partners (including the Town of Chapel Hill, Town of Carboro, and the University of North Carolina – Chapel Hill) to re-evaluate the potential benefits and costs associated with re-instituting fares, including:

- Policy and administrative implications associated with charging a fare
- Estimated capital and operating costs and benefits
- Expected ridership and revenue impacts raised by different fare scenarios
- Estimated return on investment associated with charging a fare

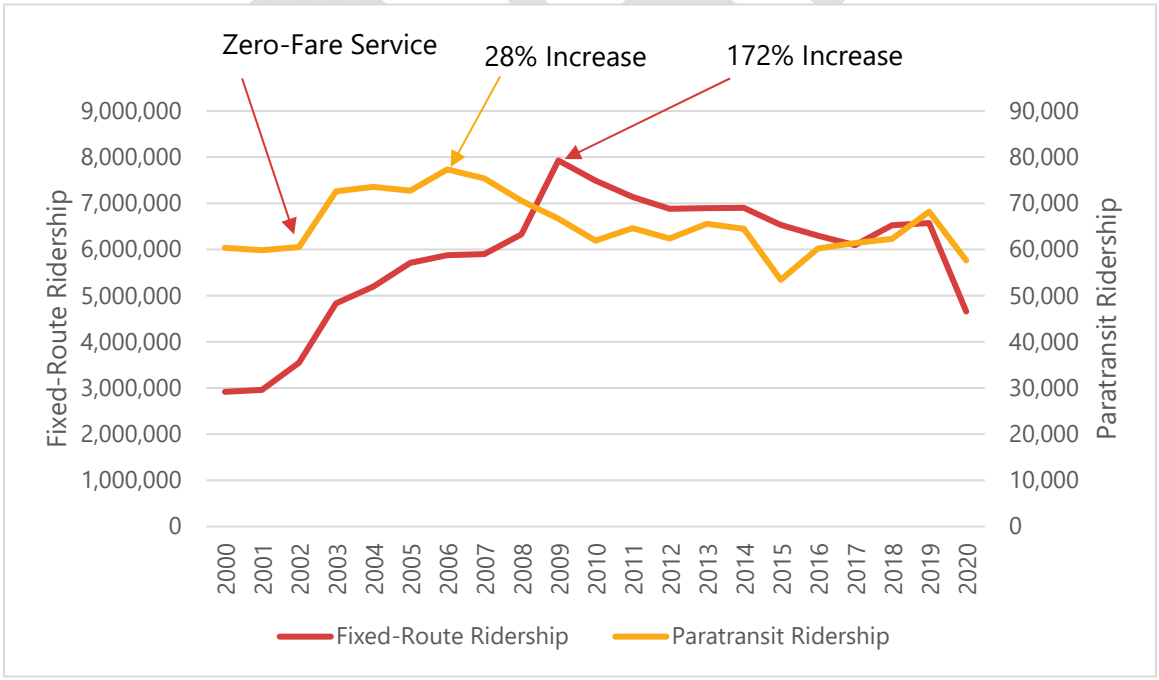
Ridership Changes

In the first full year of operating zero-fare service, fixed-route ridership on CHT increased by 27% and paratransit ridership increased by 17% (Figure 3-6). In the first three years of zero-fare service, CHT's fixed-route ridership increased by 76% (2.2 million additional trips) and paratransit ridership increased by 23% (14,000 additional trips).

Both fixed-route and paratransit ridership continue increasing over the next several years, with fixed-route ridership peaking in 2009 (172% increase from 2000) and paratransit ridership peaking in 2006 (28% increase from 2000). Following the initial increases in ridership over the three to six years since beginning zero-fare service, ridership has been declining or plateauing.

CHT's productivity increased from 31.2 passengers per revenue hour in 2000 to 37.6 passengers per revenue hour in 2005, representing a 20% increase in productivity following three years of zero-fare operations. These figures are moderately higher than what was reported for Mountain Line but lower than CyRide's reported 2019 productivity. This suggests that CHT may have had less excess capacity than Mountain Line and increased revenue hours of service to accommodate increased demand, resulting in lower increases in productivity following zero-fare service.

Figure 3-6 Chapel Hill Transit Zero-Fare Ridership Impacts



Source: NTD, 2020

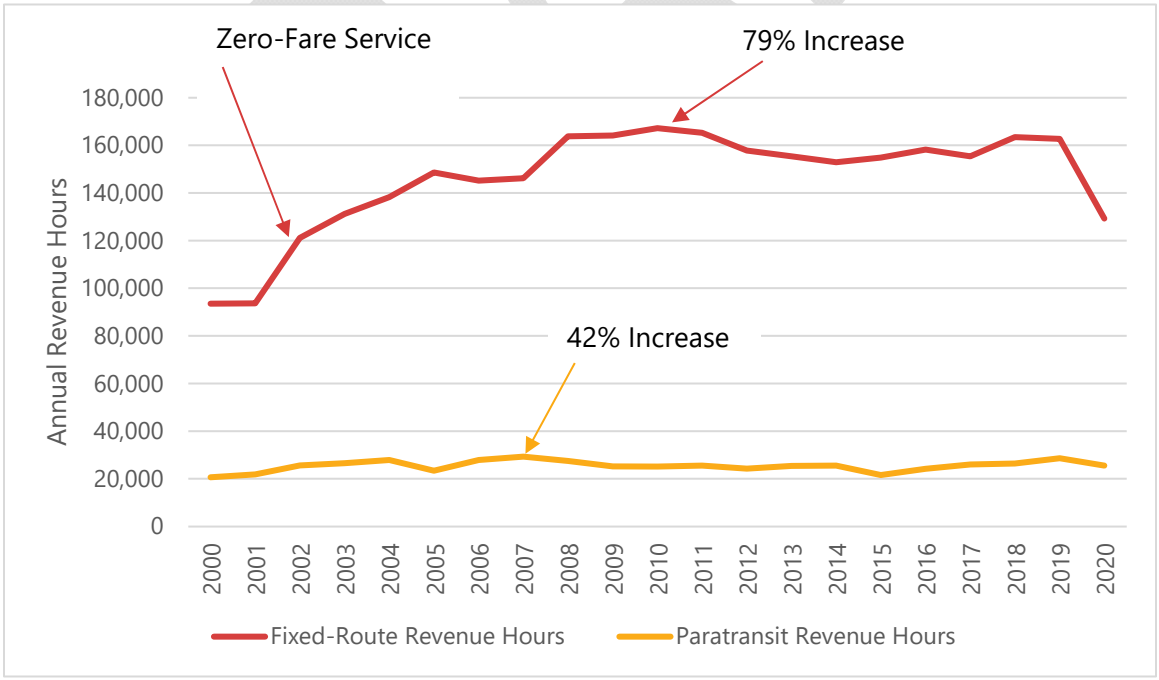
Service Increases and Staffing Needs

Service levels in terms of annual revenue hours increased notably in the first year of zero-fare service, including an 8% increase in fixed-route revenue hours and a 4% increase in paratransit revenue hours between 2002 and 2003, as shown in Figure 3-7. In the first three years of zero-fare service, fixed-route revenue hours increased by 44,600 (48%) and paratransit revenue hours increased by 6,100 (28%).

Revenue hours continued generally increasing in line with ridership over the next several years, with fixed-route revenue hours peaking in 2010 (a 79% increase from 2000) and paratransit revenue hours peaking in 2007 (a 42% increase from 2000). Following this initial growth period, revenue hours have plateaued and begun to decrease over time.

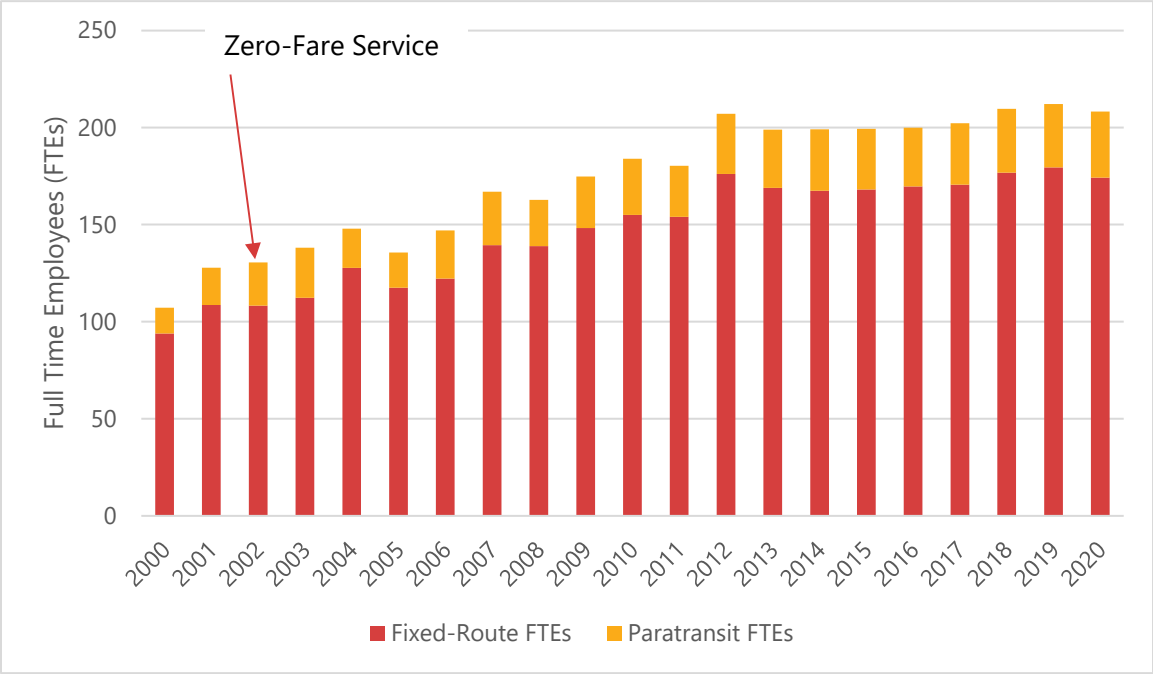
In terms of staffing levels, there were modest FTE increases after the first year of zero-fare services with 4 additional fixed-route FTEs and 3 additional paratransit FTEs between 2002 and 2003. Total FTEs continued generally increasing in line with ridership and revenue hours, reaching a peak in 2012 before stabilizing. Between 2000 and 2019, the total FTEs for CHT nearly doubled from 107 to 212. However, some of this growth in FTEs occurred while ridership was decreasing so it is unclear to what extent this growth is strictly due to zero-fare service impacts.

Figure 3-7 Chapel Hill Transit Zero-Fare Revenue Hours Impacts



Source: NTD, 2020

Figure 3-8 Chapel Hill Transit Zero-Fare Full Time Employee Impacts

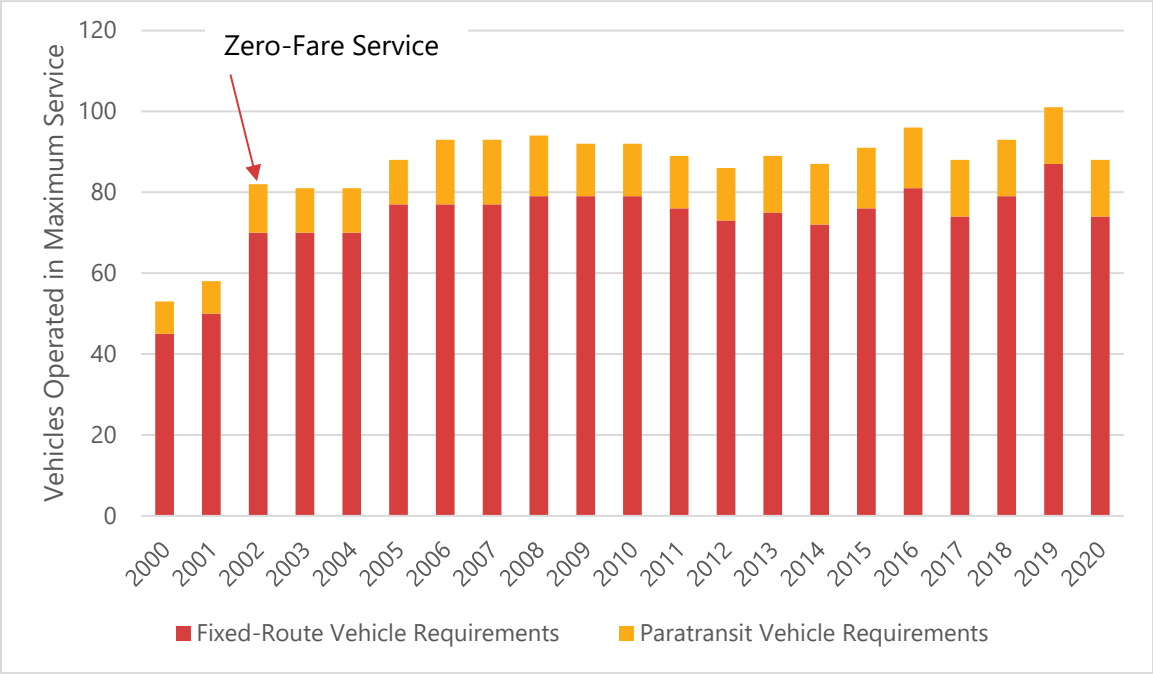


Source: NTD, 2020

Additional Capital Requirements

Within the first three years of zero-fare service, CHT increased their fixed-route fleet size by 18% (19 vehicles) and the paratransit fleet size by 5% (one vehicle). However, Chapel Hill Transit underwent a significant fleet increase prior to implementing zero-fare service, including an additional 20 fixed-route vehicles (40% increase) and four paratransit vehicles (50% increase). Following this preemptive increase, the fleet size remained relatively consistent for the next three years. CHT's fleet size has generally fluctuated over time since transitioning to zero-fare service, ultimately increasing the fixed-route fleet size by 24% and the paratransit fleet size by 17% between 2002 and 2019.

Figure 3-9 Chapel Hill Transit Vehicles Required for Maximum Service



Source: NTD, 2020

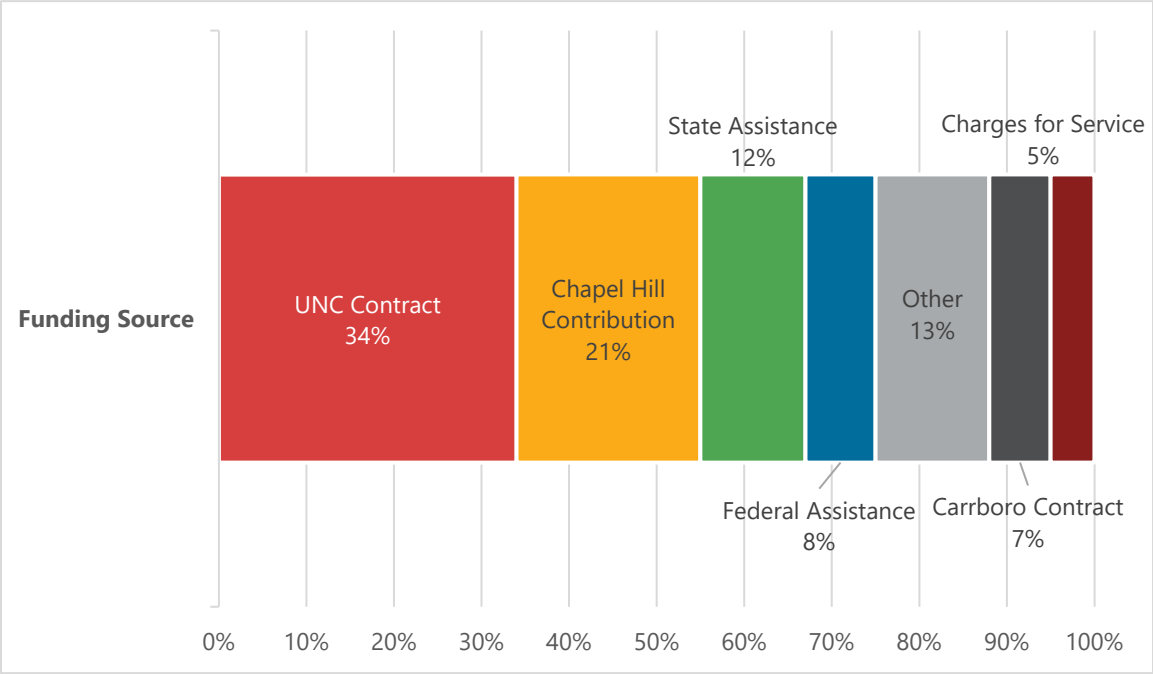
System Policies

Chapel Hill Transit does not have any specific regulations or rider guide policies related to zero-fare service.

Funding Sources

Chapel Hill Transit is funded through a partnership between the Town of Chapel Hill, the Town of Carrboro, and the University of North Carolina – Chapel Hill (UNC). In addition to this funding partnership, CHT also utilizes state and federal funding assistance, park-and-ride fees, and revenue generated from special services, like the Tar Heel Express (Figure 3-10). Funding provided by the Town of Chapel Hill is primarily generated by a property tax levy for transit and vehicle license fees. Town of Carrboro and UNC contributions are determined by contractual agreements based on cost sharing arrangements generally related to the level of service provided within each jurisdiction. Other funding is typically generated from special services which charge a fare and from advertising revenue.

Figure 3-10 Chapel Hill Transit Funding Sources (2020-2021)



Source: Town of Chapel Hill, 2021

Corvallis Transit System

The idea of implementing fare-free transit on Corvallis Transit System (CTS) was promoted by the Corvallis Sustainability Coalition as a strategy to make the city more livable. In 2010, a briefing paper was prepared for City Council introducing the concept of zero-fare service paid for with a new Transit Operations Fee (TOF) fee-based system, replacing farebox revenue, property tax revenue, and pass sales. The TOF and zero-fare service was passed and implemented in 2011.

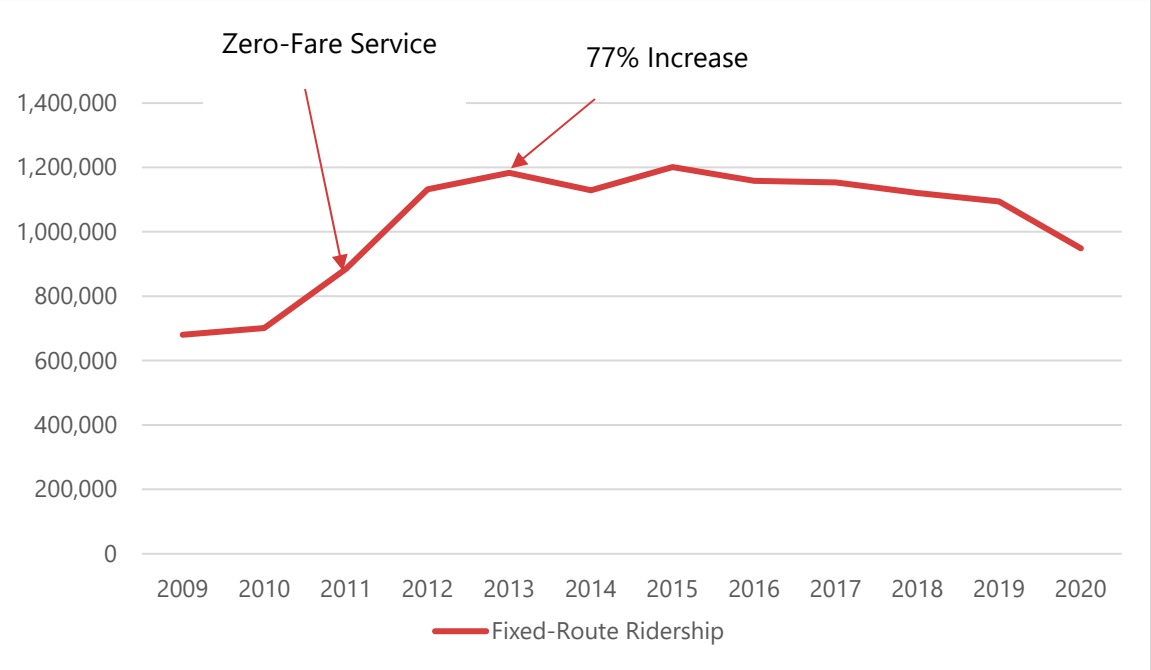
Ridership Changes

In the first year of zero-fare service, CTS reported a 38% increase in ridership, which continued to increase over the next two to three years before leveling off. In the first three years of zero-fare service, CTS reported 482,000 additional fixed-route trips, a 69% increase.

Ridership on CTS peaked in 2015 at approximately 1.2 million annual boardings on fixed-route service, representing a 77% increase from 2009 (Figure 3-11). CTS last reported paratransit ridership to the National Transit Database in 2012, thus longer-term trends in paratransit ridership related to zero-fare service were not identified.

CTS reported a productivity of 25.2 passengers per hour in 2009 followed by a 66% increase in productivity (41.8 passengers per revenue hour) in 2013 after operating zero-fare service for three years. This represents the most significant increase in productivity by any of the three peer agencies. CTS also had the lowest increase in revenue hours following zero-fare implementation, which suggests that they were able to accommodate the increased demand for service without requiring large investments in additional service levels.

Figure 3-11 Corvallis Transit System Zero-Fare Ridership Impacts

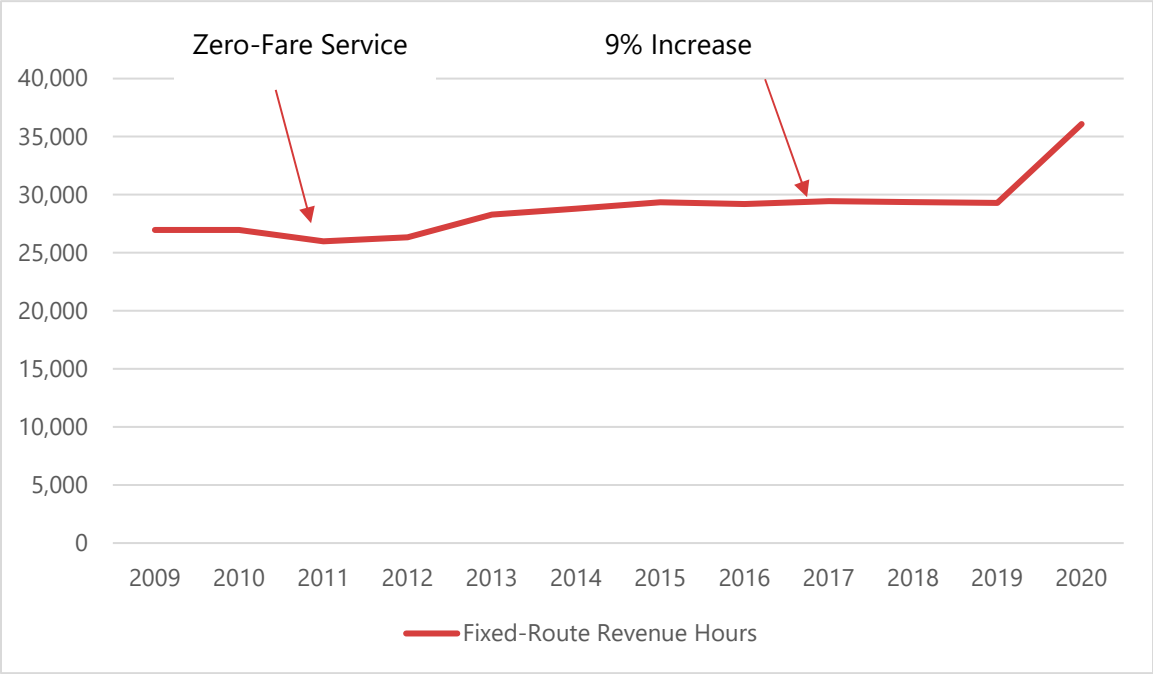


Source: NTD, 2020

Service Increases and Staffing Needs

In the first three years of zero-fare service, fixed-route revenue hours increased by 1,300 (5%), a modest increase compared to other peer agencies (Figure 3-12). Prior to the Covid-19 pandemic, fixed-route revenue hours reached a high in 2017, representing a 9% increase in service from 2009. Revenue hours increased significantly in 2020 which is likely due to pandemic related service changes and not impacts of zero-fare service. CTS last reported paratransit revenue hours to the National Transit Database in 2012, thus longer-term trends in paratransit service levels related to zero-fare service were not identified.

Figure 3-12 Corvallis Transit System Zero-Fare Revenue Hours Impacts



Source: NTD, 2020

Additional Capital Requirements

Since implementing zero-fare service in 2011, CTS' fixed route fleet size has increased by one vehicle, from 10 to 11 total fixed-route vehicles. The substantial increase in fixed-route ridership experienced after transitioning to zero-fare service was effectively absorbed within existing service levels, as fixed-route revenue hours and fleet size increases were notably smaller than ridership.

System Policies

Like many other zero-fare agencies, a policy requiring riders to have destinations when boarding the bus was added to the Code of Conduct. CTS reported a slight uptick in negative onboard behavior affecting operators and other passengers, but operators are happy to not monitor the fare collection. The community was also reported to be very supportive of zero-fare transit service, and it is an integral part of the City of Corvallis community.

Funding Sources

To replace fare revenue, the city implemented a Transit Operations Fee on residents and businesses through their monthly utility services bill. During city council meetings, city and transit agency staff framed transit as a necessary public utility to which every member of the

community should contribute. The transit agency credits this framing with the success of the program and reports high levels of community pride in fare-free transit service.

The TOF is reviewed annually by City Council, so Council has the option to adjust the fee every year. Revenue at the "floor" level is approximately $900,000 annually, with 76% of the fee replacing the general fund and 21% replacing fares. The remaining 3% is intended for increases in service. The TOF also provides a source for local matching fund requirements for the purchase of new equipment. In addition to TOF contributions levied on a per-bed basis, Oregon State University (OSU) continues to support transit with a long-standing annual direct contribution of $130,000. In 2022, the fee was $3.44 per month for single family homes, $2.38 per unit in multifamily homes, and $0.054 per trip for non-residential customers. This consistent revenue source ensures long-term financial viability for the transit agency.

Pandemic Pilot Project Example

Like many agencies, StarTran, the transit provider operating in Lincoln, NE, began providing zero-fare transit service during the Covid-19 Pandemic as a way to increase ridership, minimize exposure and risk for operators, and reduce the financial burdens of riding transit. StarTran initiated zero-fare service in April 2020 is continuing to operate with zero-fares through 2022. The agency is currently deciding whether to reimplement fares or extend zero-fare service as a two-year pilot program.

As a result of providing zero-fare service throughout the pandemic recovery, ridership on StarTran services has recovered notably faster than the industry average of around 50%-60%. As of October 2021, fixed-route ridership was about 20% lower than October 2019 and paratransit ridership was 67% higher than pre-pandemic levels. Notably, ridership recovery on routes serving the University of Nebraska – Lincoln (where students already received zero-fare service) lagged behind the core routes operating elsewhere in the system. While these results are based on a relatively short, two-year pilot period, they suggest that zero-fare service is capable of increasing ridership in the wake of the Covid-19 pandemic.

4 SYSTEMWIDE ZERO-FARE SCENARIO EVALUATION

This chapter presents the findings from the systemwide zero-fare alternative evaluation for CyRide service, including the impacts to ridership, revenue, and operations.

KEY FINDINGS

- Some existing CyRide service is operating above on-board capacity thresholds
  - Post-pandemic, passengers appear less likely to board crowded vehicles, indicating that on-board capacity may be lower than pre-pandemic.
  - Addressing all existing capacity issues would require between $19,000 and $362,000 in additional annual operating costs. This range is representative of capacity thresholds set at 60 and 50 on-board passengers, respectively.
  - CyRide does not have sufficient operator availability to address these existing capacity issues and would need to increase staffing levels before providing additional service.
- Operating zero-fare service for CyRide's fixed-route service is anticipated to:
  - Increase ridership between 8.6% (315,000 trips) and 9.8% (360,000 trips).
  - Require between $87,000 and $119,000 in additional annual operating costs to address anticipated capacity issues due to zero-fare service.
- Eliminating on-board fares for CyRide's paratransit service is anticipated to:
  - Increase paratransit trips between 20% (3,000 trips) and 40% (5,000 trips).
  - Increase annual operating costs between $55,000 and $109,000.
  - Potentially increase vehicle and staffing requirements for contractors providing the service.
- At a systemwide level, providing fare free service would:

  - Add between 318,000 and 365,000 total additional passenger trips.
  - Increase net annual additional operating costs between approximately $273,500 and $359,500 annually, including foregone farebox revenue, additional service requirements, and the cost of collecting fare. This does not include the cost required to address existing capacity issues.
- CyRide's ability to hire and retain operators will be imperative to address existing and anticipated capacity issues on fixed-route service before providing zero-fare service.

EXISTING FARE COSTS AND REVENUE

Transitioning to zero-fare service typically results in a decrease in revenue for the agency; collecting fares directly generates revenue but has ongoing operating and administrative costs, including farebox equipment maintenance, accounting, and other services. Identifying tradeoffs between fare revenue and collection costs is the first step in determining the financial impacts of providing fare free service.

CyRide earned approximately $146,000 in total fare revenue in FY 2022, which accounts for about 2% of annual revenue, as shown in Figure 4-1. CyRide also estimates the annual cost of fare collection at approximately $31,500 per year. A transition to zero-fare service would include both foregoing this $146,000 in farebox revenue and a cost savings of $31,500 by no longer collecting, counting, and reconciling fare revenue. At net, this loss of revenue would require CyRide to make up for a loss of $114,500 annually.

Figure 4-1 CyRide Major Funding Sources in FY 2022

Fare or Collection Type	Revenue	Percent of Total*
ISU Student Government	$5,499,000	59%
City of Ames	$2,027,000	22%
ISU Administration	$894,000	10%
State & Federal Revenue	$828,000	9%
Passenger Revenue	$146,000	2%
Total	**$9,394,000**	**100%**

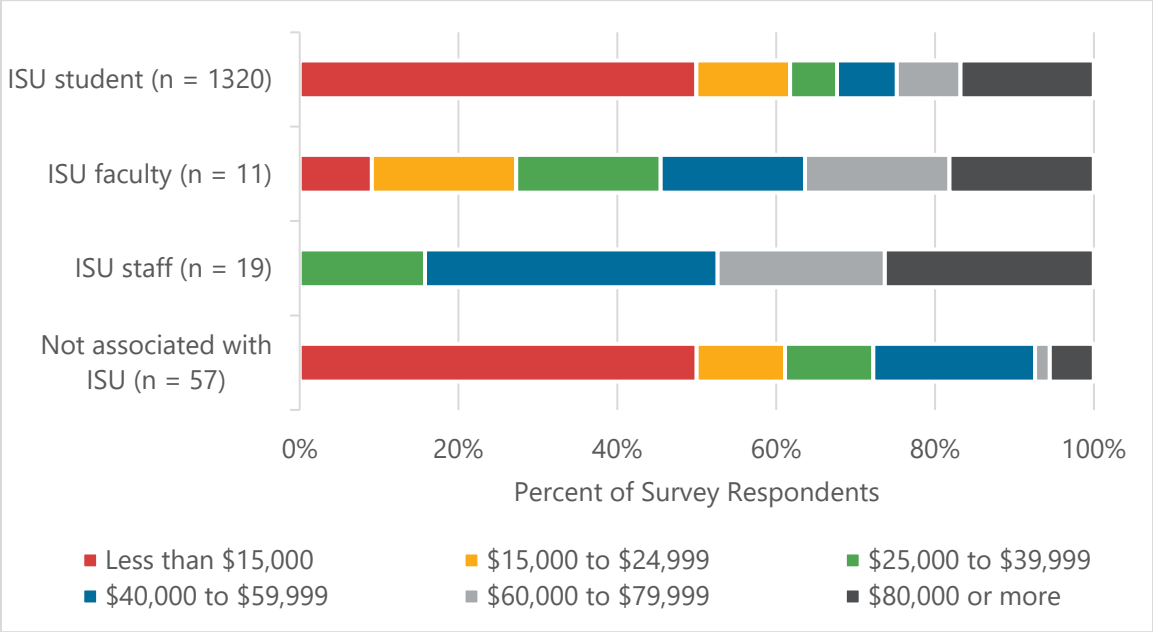
Source: CyRide, 2022

*Percentages may not add up to 100% due to rounding

EQUITY CONSIDERATIONS

Transitioning to zero-fare service has the potential to eliminate barriers for CyRide's low-income passengers and improve equity in the service area. Understanding the income levels of existing ridership is a key factor for determining how fare free service will affect the community. CyRide passengers tend to be lower-income earners, as shown in Figure 4-2. While ISU-affiliated passengers ride with no fares due at the point of service, non-ISU passengers do pay fares to board the bus. Nearly half of CyRide passengers not affiliated with ISU have an annual household income below $15,000 and over 70% have an income below $40,000. This suggests that eliminating fares at point of service and lower barriers to entry for non-ISU affiliated riders may have notable equity implications in Ames.

Figure 4-2 CyRide Passenger Income Distribution by ISU Affiliation



Source: CyRide On-Board Survey, 2017

FIXED-ROUTE RIDERSHIP AND COST IMPLICATIONS

Ridership

Increasing ridership is often a high priority for transit agencies, particularly in the wake of declining ridership following the Covid-19 Pandemic and providing zero-fare service has been shown to consistently and quickly accomplish this goal. Transit ridership is elastic relative to fares – the more fares are reduced, the higher ridership will increase. Based on industry experience reported from several agencies that have done so successfully, transitioning to fare free service can increase transit ridership between 40% and 60%.

However, because 94% of CyRide trips are already made without paying a fare to board the vehicle, these growth rates are only applied to the 6% of trips that do pay a fare at point of service. At a systemwide level, this represents a range of increased fixed-route ridership between 315,000 and 360,000 additional passengers per year (between an 8.6% and 9.8% increase), as shown in Figure 4-3. As transit ridership increases following a transition to zero-fare service, there are several implications including the potential for improved travel times, and increased operating costs.

Figure 4-3 Potential Ridership Growth with Systemwide Zero-Fare Implementation

	Systemwide Ridership	Additional Boardings	Percent Increase
Existing	3,657,000	--	--
Low Growth	3,972,000	315,000	8.6%
High Growth	4,017,000	360,000	9.8%

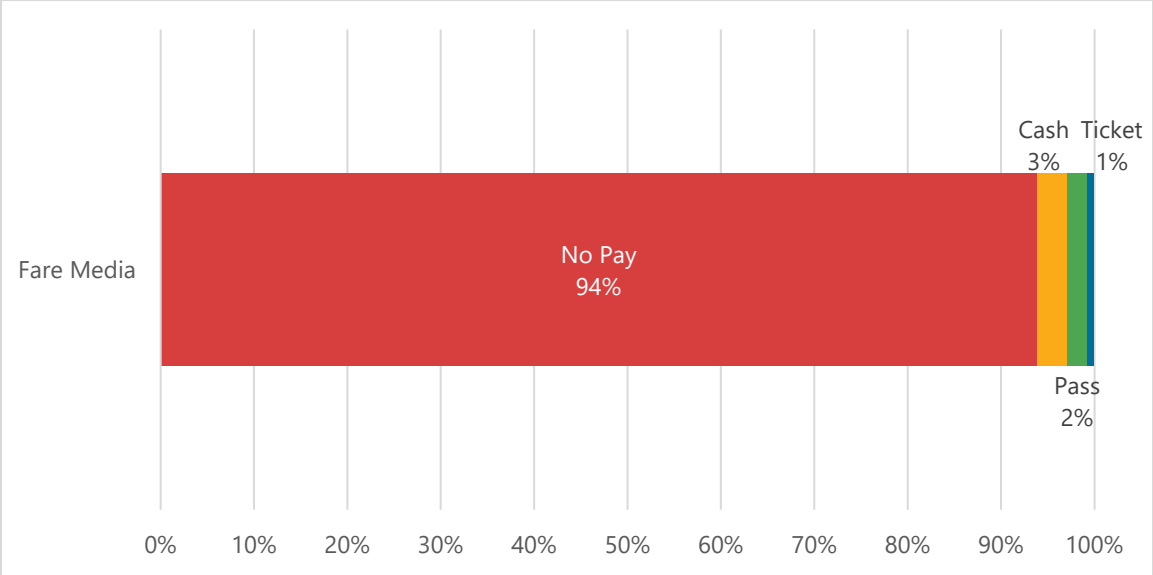
Travel Time Savings

Zero-fare service may reduce dwell time spent at bus stops associated with waiting for passengers to board and pay their fare. Research has shown that it takes passengers on average 4.5 seconds to pay their fare with cash, 2.8 seconds to pay their fare with a smart card, and 1.8 seconds to board without paying a fare.[2] Ridership by fare media, as shown in Figure 4-4, indicates that the vast majority of CyRide passengers ride without paying a fare at

[2] Transit Cooperative Research Program, *Report 165: Transit Capacity and Quality of Service Manual –3rd Edition*, 2017

the point of service. Only about 6% of passengers pay a fare, split between cash, pass products, and single tickets.

Figure 4-4 CyRide Ridership by Fare Media



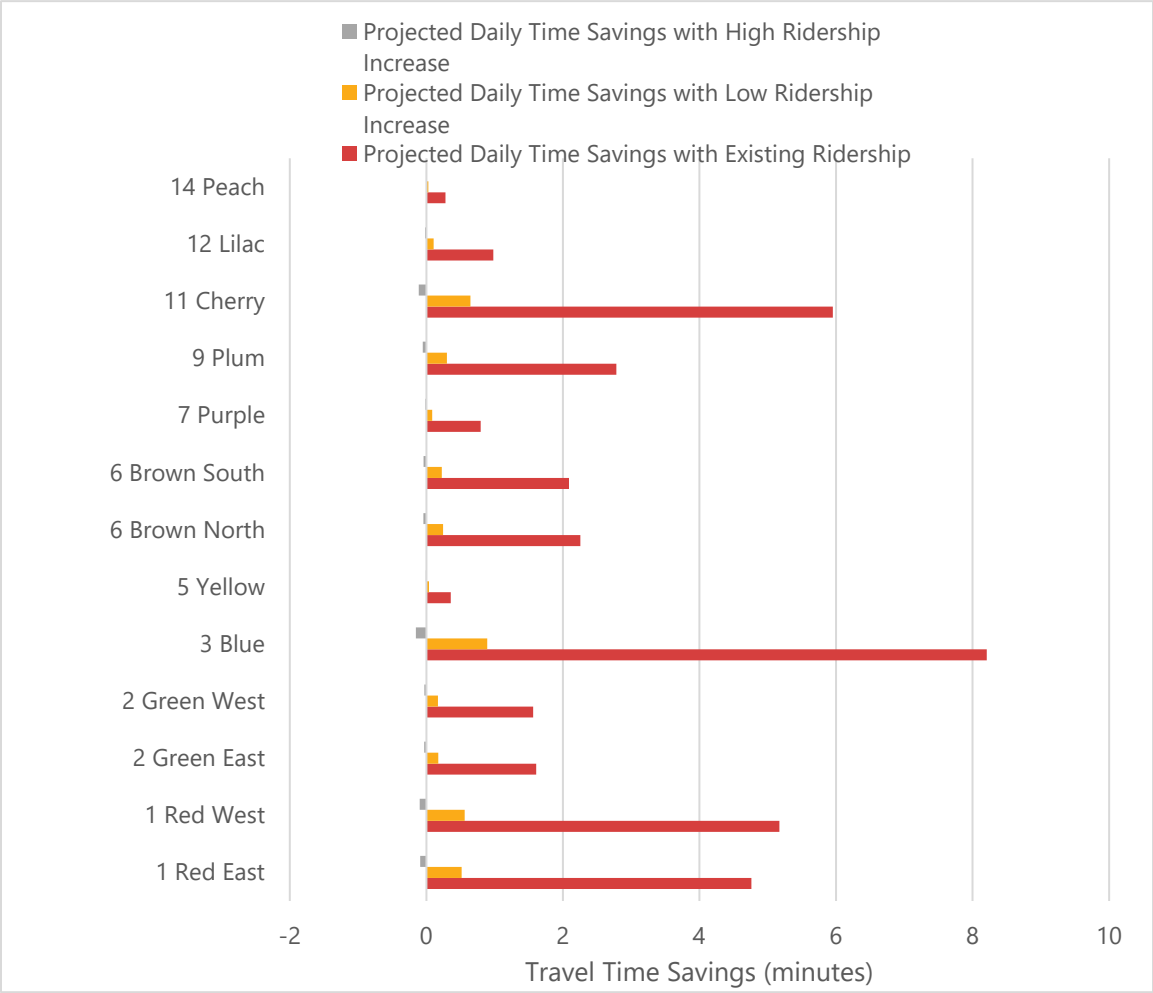
Source: CyRide, 2022

Based on recent experience from Intercity Transit (Olympia, WA), significant travel time savings can be anticipated after implementing zero-fare service, including relief for routes with on-time performance issues. Applying the estimated dwell time savings to the existing ridership and projected increase in ridership yields the average daily travel time savings for each route, as shown in Figure 4-5. Because Routes 21, 23, and 25 already operate without charging a fare, there would be no travel time savings associated with these routes.

Travel time savings at existing ridership levels across the system amount to about 36 minutes per day initially. Initial travel time savings are also likely to degrade over time as more people start riding the bus in response to zero-fare service. As ridership increases, travel time savings are anticipated to become more modest, reducing to about 27 minutes per day with a low ridership increase and about 22 minutes per day with a high ridership increase. On a per trip basis, this corresponds to up to seven seconds of travel time savings per trip initially, decreasing to between zero to three seconds per trip as ridership increases.

Because such a high percentage of existing ridership make trips without paying a fare to board the vehicle, the travel time savings are minimal and will be unlikely to significantly impact operations. In some cases, travel times are anticipated to increase slightly in the high ridership growth scenario, but would amount to less than one second of additional travel time per trip.

Figure 4-5 CyRide Projected Daily Travel Time Savings



Operating Cost Implications

As ridership increases, passenger loads on specific trips or routes may exceed the vehicle's capacity, requiring the agency to provide additional trips to meet this increased demand for service. The existing maximum on-board passenger loads for every trip of each route were used to project the theoretical maximum loads based on the low growth and high growth scenarios.

Existing Capacity Constraints

An evaluation of existing on-board passenger loads and conversations with CyRide staff identified that there are a number of existing trips exceeding the established on-board capacity threshold of 60 passengers. Additionally, agency staff have noted that passengers appear less willing to board a crowded vehicle following the Covid-19 pandemic and that the

pre-pandemic capacity threshold of 60 passengers may be too high and that 50 passengers may be more reflective of current service. With this as context, an evaluation of existing on-board capacity found that 10 trips currently exceed the 60-passenger capacity threshold and 35 trips exceed 50 passengers on-board.

Because systemwide zero-fare service is likely to worsen these existing capacity issues, it is imperative that the existing capacity issues be resolved prior to implementing zero fare service. To alleviate these existing capacity issues, the evaluation assumes that CyRide would need to provide one additional trip before each trip that exceeds the capacity threshold, using 50 passengers and 60 passengers to show a range of potential impacts. The revenue hours required for a round trip on each route that requires additional service was then applied to each trip to determine the cost required to address capacity constraints on existing service levels for weekdays only during the ISU school year, September through April.

CyRide has indicated that many of these trips have additional service included in the existing budget but are not being provided due to a lack of operator availability to operate the trips. While the analysis shows that additional service is needed, the cost to provide much of this service is already included in CyRide's budget and can be done without adding additional costs to the annual budget. Trips exceeding capacity that are included in CyRide's existing budget are identified and additional costs are only applied to unbudgeted trips exceeding capacity. The additional service required to bring existing routes within the established on-board passenger capacity would require an additional cost between $19,000 and $392,000 per year to operate, as shown in Figure 4-6.

Figure 4-6 Additional Service Requirements for Existing Trips Exceeding Capacity

Route	Trip Start Time	Annual Operating Cost (50 Passenger Threshold)	Annual Operating Cost (60 Passenger Threshold)
Route 1 Red East	10:32 am	$19,000	--
	5:32 pm	$19,000	$19,000
Route 1 Red West	10:48 am	$18,500	--
	1:33 pm	$18,500	--
	2:03 pm	$18,500	--
	3:03 pm	Budgeted	Budgeted
	4:18 pm	$18,500	--
Route 3 Blue	7:10 am	Budgeted	Budgeted
	8:20 am	$18,500	--
	9:20 am	Budgeted	Budgeted
	9:30 am	$18,500	--

Route	Trip Start Time	Annual Operating Cost (50 Passenger Threshold)	Annual Operating Cost (60 Passenger Threshold)
	11:35 am	Budgeted	Budgeted
	12:05 pm	$18,500	--
	12:35 pm	Budgeted	Budgeted
	1:50 pm	Budgeted	Budgeted
	2:50 pm	$18,500	--
Route 9 Plum	8:15 am	Budgeted	Budgeted
	2:55 pm	$17,000	--
Route 11 Cherry	7:30 am	$13,000	--
	8:12 am	$13,000	--
	8:19 am	$13,000	--
	9:22 am	Budgeted	Budgeted
	10:22 am	$13,000	--
	11:46 am	$13,000	--
	1:58 pm	$13,000	--
	4:10 pm	$13,000	--
Route 21 Cardinal	7:24 am	$9,000	--
	8:28 am	$9,000	--
	8:36 am	Budgeted	Budgeted
Total		**$362,000**	**$19,000**

In addition to the operating costs necessary to provide these additional trips, CyRide would also need to hire additional operators to drive these trips, something that has proved challenging during the current national transit operator shortage. According to a March 2022 survey conducted by the American Public Transportation Association (APTA)[3], 92% of transit agencies reported difficulty hiring new employees and 66% reported difficulty retaining existing employees. As of result of this staffing shortage, 71% of agencies have reported that they were forced to cut service or delay planned service increases and 43% have reported missed or canceled trips. CyRide has experienced similar staffing issues as those identified in the APTA survey and will continue to face challenges in providing these additional trips without notable improvements in the labor market.

[3] "Workforce Shortages Impacting Public Transportation Recovery" American Public Transportation Association (March, 2022).

Zero-Fare Fixed-Route Service Requirements

Beyond the trips that are currently exceeding CyRide's on-board capacity threshold, the ridership increase anticipated from systemwide zero-fare service would create new capacity issues. The additional ridership anticipated from zero-fare service would result in a range between five to seven additional trips operating above the capacity threshold of 60 passengers. Providing one additional trip per weekday for these trips exceeding the capacity threshold would require between $87,000 and $119,000 in additional annual operating costs, as shown in Figure 4-7.

These additional costs are on top of the $19,000 to $362,000 per year that would be required to address capacity issues on existing CyRide service, bringing the combined fixed-route service requirements to between $106,000 and $481,000 per year. However, only a portion of this cost would be directly related to the ridership growth from systemwide zero-fare service.

Figure 4-7 Additional Service Requirements for Systemwide Zero-Fare Trips Exceeding Capacity

Route	Trip Start Time	Low Growth Operating Cost	High Growth Operating Cost
Route 1 Red East	10:32 am	--	$19,000
Route 1 Red West	10:48 am	$18,500	$18,500
Route 1 Red West	2:03 pm	$18,500	$18,500
Route 3 Blue	8:20 am	$18,500	$18,500
Route 3 Blue	2:50 pm	$18,500	$18,500
Route 11 Cherry	7:30 am	$13,000	$13,000
Route 11 Cherry	8:12 am	--	$13,000
Total		**$87,000**	**$119,000**

PARATRANSIT RIDERSHIP AND COST IMPLICATIONS

Similar to fixed-route service, reducing or eliminating paratransit fares is expected to increase demand for the service. Other agencies, like Mountain Line (Missoula, MT) and Chapel Hill Transit (Chapel Hill, NC), experienced an approximately 30% increase in revenue hours and passenger trips during the first three years of fare free service. The ADA requires paratransit service with comparable travel times as fixed-route service. As ridership increases additional vehicles must be dispatched to serve maintain comparable travel times. Using a similar estimated ridership increase between 20% and 40% would result in ridership growth between 3,000 and 5,000 additional trips per year and would have a range of cost implications.

CyRide's paratransit contract is currently structured with costs per passenger trip applying to trips made on weekdays before 6:00 p.m. and cost per revenue applying to trips taken on weekends and weekdays after 6:00 p.m. Under these contract parameters, the increase in ridership would result in an increased annual operating cost between $55,000 and $109,000, as shown in Figure 4-8.

Figure 4-8 CyRide Paratransit Ridership and Operating Cost Implications

	20% Ridership Increase	40% Ridership Increase
Additional Ridership Increase	3,000	5,000
Annual Paratransit Operating Cost Increase	$55,000	$109,000
Total Annual Paratransit Operating Cost	**$298,000**	**$352,000**

Due to CyRide's paratransit service contract structure, there would be no additional vehicle or staffing requirements for the agency. However, additional capital or staffing needs may be required for the contractor to continue providing a consistent level of service as demand and ridership increase.

Paratransit Policy Considerations

CyRide's paratransit service currently goes above and beyond the ¾ mile range of fixed-route service required under the Americans with Disabilities Act (ADA). Instead, CyRide provides access to paratransit service citywide. Under a systemwide zero-fare policy, only paratransit trips within ¾ mile of fixed-route service would be required to operate with zero-fares.

An evaluation of paratransit origins and destinations found that 81% of existing paratransit trips are included within the ¾ mile complementary ADA zone while 19% are outside of this zone. By limiting zero-fare service to the 81% of trips within the complementary ADA zone,

CyRide may be able to reduce the net increase in paratransit service costs by between $14,000 and $25,000 per year, including accounting for foregone farebox revenue (Figure 4-9). This would also reduce the anticipated ridership increase to between 2,000 and 4,000 additional trips per year and would come with additional administrative burdens by requiring CyRide to continue administering a fare on some services.

Figure 4-9 Cost Differential between Alternative Zero-Fare Paratransit Policies

	Citywide Zero-Fare Paratransit		¾ Mile Zero-Fare Paratransit	
	20% Ridership Increase	40% Ridership Increase	20% Ridership Increase	40% Ridership Increase
Additional Ridership Increase	3,000	5,000	2,000	4,000
Annual Paratransit Operating Cost Increase	$55,000	$109,000	$44,000	$88,000
Foregone Farebox Revenue	$17,000	$17,000	$13,000	$13,000
Net Paratransit Cost Increase	**$72,000**	**$126,000**	**$57,000**	**$101,000**

SYSTEMWIDE FARE FREE TRADEOFFS SUMMARY

Operating zero-fare service includes a range of costs, benefits, and tradeoffs that are important to consider when deciding whether to charge a fare or not, with the primary benefits including increased ridership and reduced dwell times and the largest costs including foregone farebox revenue and increased operating costs. The range of estimated ridership growth and increases to annual operating cost for fixed-route service, paratransit service, and for the entire system are shown below in Figure 4-10.

By operating fare free service, ridership is estimated to grow between 315,000 and 360,000 for fixed-route service and between 3,000 and 5,000 for paratransit service. Due to increased ridership, capacity constraints, and foregone farebox revenue, systemwide net operating cost increases are estimated between approximately $273,500 and $359,500 annually. This would represent between a 2.4% and a 3.1% increase in systemwide operating costs for CyRide. However, an additional $19,000 to $362,000 would be required to address capacity issues on zero-fare service prior to implementation. While this cost is not the result of zero-fare service impacts, it should be addressed prior to zero-fare implementation.

Figure 4-10 Zero-Fare Estimated Ridership and Cost Impacts

	Low-Cost Estimate	High-Cost Estimate
Fixed-Route		
Projected Ridership Increase	315,000	360,000
Additional Annual Operating Costs	$87,000	$119,000
Foregone Farebox Revenue (2022)	$146,000	
Paratransit		
Projected Ridership Increase	3,000	5,000
Additional Annual Operating Costs	$55,000	$109,000
Foregone Farebox Revenue (2022)	$17,000	
Systemwide		
Cost of Fare Collection	($31,500)	
Estimated Additional Annual Cost	**$273,500**	**$359,500**

5 PARTIAL ZERO-FARE SCENARIOS

Partial zero-fare service provides some of the ridership and operational benefits of zero-fare service without all of the increased costs and represents potential intermediate steps prior to implementing full systemwide zero-fare service.

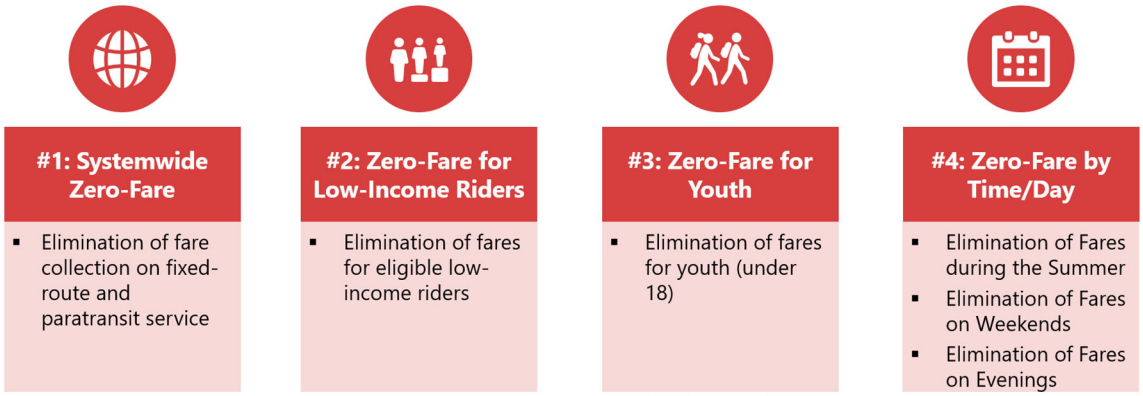
ZERO-FARE PROGRAM ALTERNATIVES EVALUATION

In addition to the systemwide zero-fare scenario (Scenario 1) that was explored in more detail in Chapter 4, three other partial zero-fare scenarios were explored (Figure 5-1). These fare scenarios include:

- Scenario 1: Systemwide Zero-Fare
- Scenario 2: Zero-Fare for Low-Income Riders
- Scenario 3: Zero-Fare for Youth
- Scenario 4: Zero-Fare by Time and/or Day

Scenarios 2 and 4 include several sub-scenarios in which the threshold for determining low-income eligibility is altered between 100%, 150%, and 200% of the Federal Poverty Level and the impacts of zero-fare service are explored during the summer months, on weekends, and during the evening, after 6:00 p.m.

Figure 5-1 Zero-Fare Scenario Alternatives



SCENARIO 1 – SYSTEMWIDE ZERO-FARE

The results of Scenario 1 – Systemwide Zero-Fare have been explored in detail in Chapter 4. This scenario represents the maximum potential ridership gain and revenue loss associated with applying zero-fare service to all passengers on both fixed-route and paratransit service. The range of impacts associated with this scenario include between an 8.7% and 10.0% increase in systemwide ridership (318,000 to 365,000 additional trips per year) and a net increase in operating costs between 2.4% and 3.1% ($273,500 to $359,500), as shown in Figure 5-2.

The specific ridership and revenue impacts attributed to this scenario are shown in Figure 5-3.

Figure 5-2 Systemwide Zero-Fare Ridership and Revenue Impacts

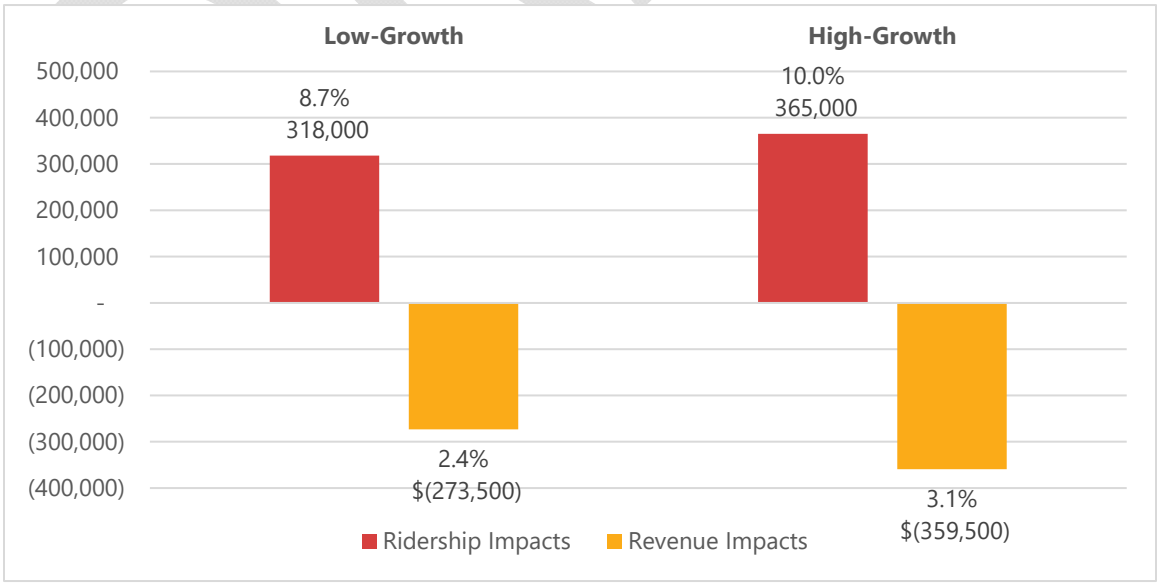


Figure 5-3 Systemwide Zero-Fare Estimated Ridership and Cost Impacts

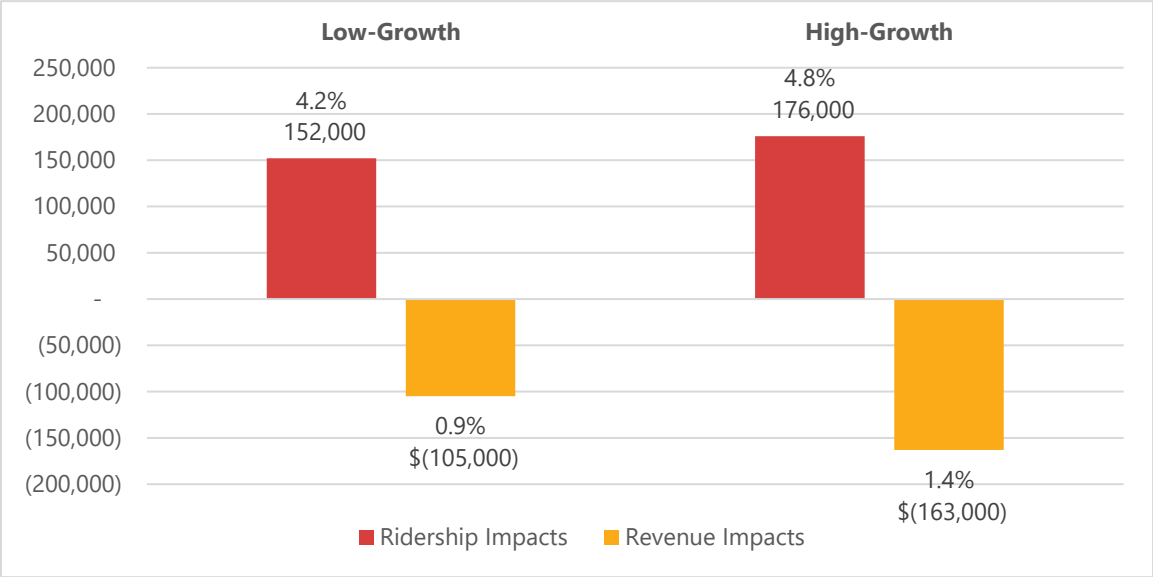
	Low-Cost Estimate	High-Cost Estimate
Fixed-Route		
Projected Ridership Increase	315,000	360,000
Additional Annual Operating Costs	$87,000	$119,000
Foregone Farebox Revenue (2022)	$146,000	
Paratransit		
Projected Ridership Increase	3,000	5,000
Additional Annual Operating Costs	$55,000	$109,000
Foregone Farebox Revenue (2022)	$17,000	
Systemwide		
Cost of Fare Collection	($31,500)	
Estimated Additional Annual Cost	**$273,500**	**$359,500**

SCENARIO 2 – LOW-INCOME ZERO-FARE

As identified previously in this report, nearly half of non-ISU riders are below the Federal Poverty Level, which indicates there may be strong equity considerations for pursuing zero-fare service systemwide or providing zero-fare service specifically for low-income passengers. Policies providing discounted or zero-fare service for low-income riders has been gaining momentum nationally and includes three common eligibility thresholds of 100%, 150%, and 200% of the Federal Poverty Level. This scenario evaluation identifies the anticipated ridership and revenue impacts of implementing a zero-fare policy for low-income passengers below each of these three potential thresholds.

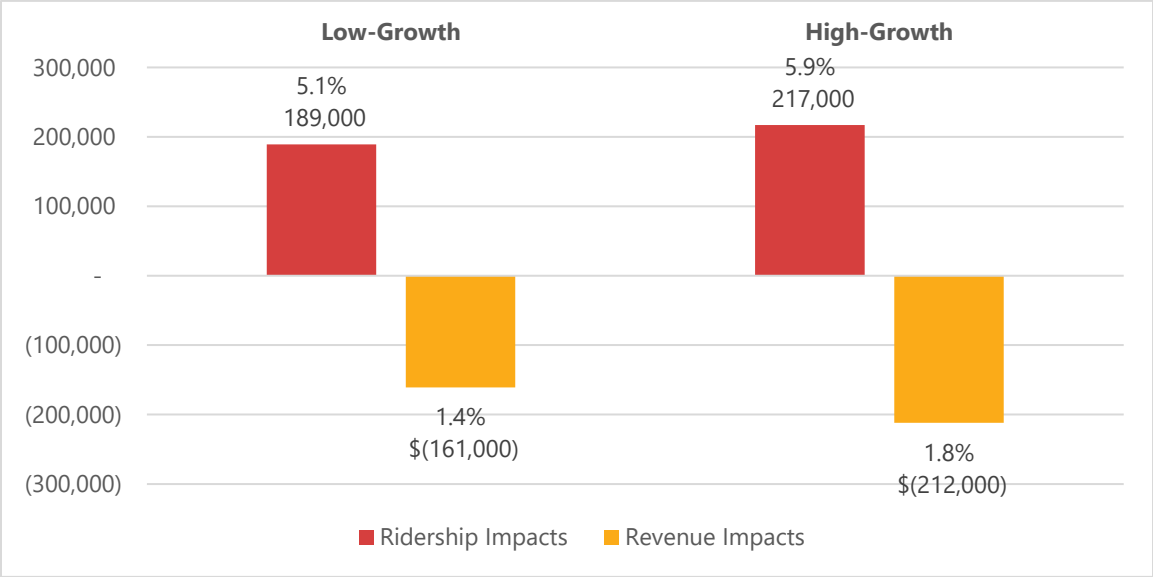
The results of these three evaluations for 100%, 150%, and 200% are shown in Figure 5-4, Figure 5-5, and Figure 5-6, respectively. As is to be expected, the more restrictive the eligibility criteria, the lower the potential ridership gain and the lower the revenue impact. Providing zero-fare service for passengers below 100% of the Federal Poverty Level would increase ridership between 4.2% and 4.8% (151,000 to 176,000 additional trips) and increase net operating costs between 0.9% and 1.4% ($105,000 to $163,000 per year).

Figure 5-4 Low-Income Zero-Fare Ridership and Revenue Impacts at 100% of Federal Poverty Level



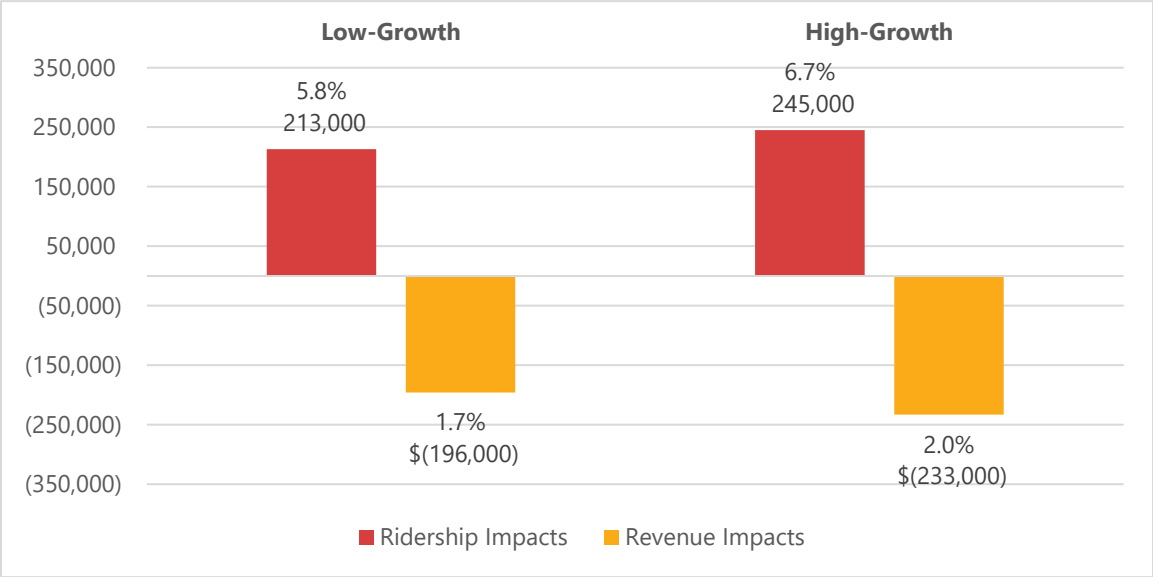
Increasing the threshold to 150% of the Federal Poverty Level would increase the potential ridership gain to between a 5.1% and 5.9% increase (189,000 to 217,000 additional trips) with an increase in net operating costs between 1.4% and 1.8% ($161,000 to $212,000 per year).

Figure 5-5 Low-Income Zero-Fare Ridership and Revenue Impacts at 150% of Federal Poverty Level



Using an eligibility threshold of 200% of the Federal Poverty Level yields the highest potential ridership increase and the largest operating cost impact of these options, including between a 5.8% and 6.7% ridership increase (213,000 to 245,000 additional trips) and an operating cost increase between 1.7% and 2.0% ($169,000 to $233,000 per year).

Figure 5-6 Low-Income Zero-Fare Ridership and Revenue Impacts at 200% of Federal Poverty Level



A side-by-side breakdown of ridership and revenue impacts for this scenario are shown in Figure 5-3. Because fares would continue to be collected on all service types, there would be no cost savings associated with the existing cost of collecting fares.

Policy Considerations

A key policy consideration associated with this scenario is to identify how income eligibility will be verified. Performing income verification in house can become cost prohibitive for small to mid-size agencies. Instead, there may be an opportunity for CyRide to identify local partnerships with non-profits or social service agencies which are already performing income verification. There may still be an additional administrative burden for CyRide to monitor and administer this program but capitalizing on existing income verification practices in the community may help to both minimize costs for the agency and encourage more participants to use the program.

Figure 5-7 Low-Income Zero-Fare Estimated Ridership and Cost Impacts

	100% of Fed Poverty Level		150% of Fed Poverty Level		200% of Fed Poverty Level	
	Low-Cost Estimate	High-Cost Estimate	Low-Cost Estimate	High-Cost Estimate	Low-Cost Estimate	High-Cost Estimate
Fixed-Route						
Projected Ridership Increase	151,00	173,000	187,000	214,000	211,000	241,000
Additional Annual Operating Costs	--	$32,000	$32,000	$50,000	$50,000	$50,000
Foregone Farebox Revenue (2022)	$70,000	$70,000	$87,000	$87,000	$98,000	$98,000
Paratransit						
Projected Ridership Increase	1,000	3,000	2,000	3,000	2,000	4,000
Additional Annual Operating Costs	$26,000	$53,000	$33,000	$65,000	$37,000	$73,000
Foregone Farebox Revenue (2022)	$8,000	$8,000	$10,000	$10,000	$12,000	$12,000
Systemwide						
Cost of Fare Collection	--	--	--	--	--	--
Estimated Additional Annual Cost	**$105,000**	**$163,000**	**$161,000**	**$212,000**	**$196,000**	**$233,000**

SCENARIO 3 – YOUTH ZERO-FARE

Another partial zero-fare program gaining momentum nationally is to provide zero-fare service for youth. There are many benefits to this type of program, notably to provide better access to school and extracurricular activities. There is also potential to generate future ridership by encouraging young members of the community to use transit now, in recognition that they may be more likely to ride transit as adults later.

Providing zero-fare service for youth ages 18 and under would increase ridership between 2.1% and 2.4% (77,000 to 88,000 additional trips) and increase net operating costs between 0.6% and 0.7% ($66,000 to $79,000 per year), as shown in Figure 5-8. A more detailed breakdown of ridership and revenue impacts are shown in Figure 5-9. Because fares would continue to be collected on all service types, there would be no cost savings associated with the existing cost of collecting fares.

Figure 5-8 Youth (18 and Under) Zero-Fare Ridership and Revenue Impacts

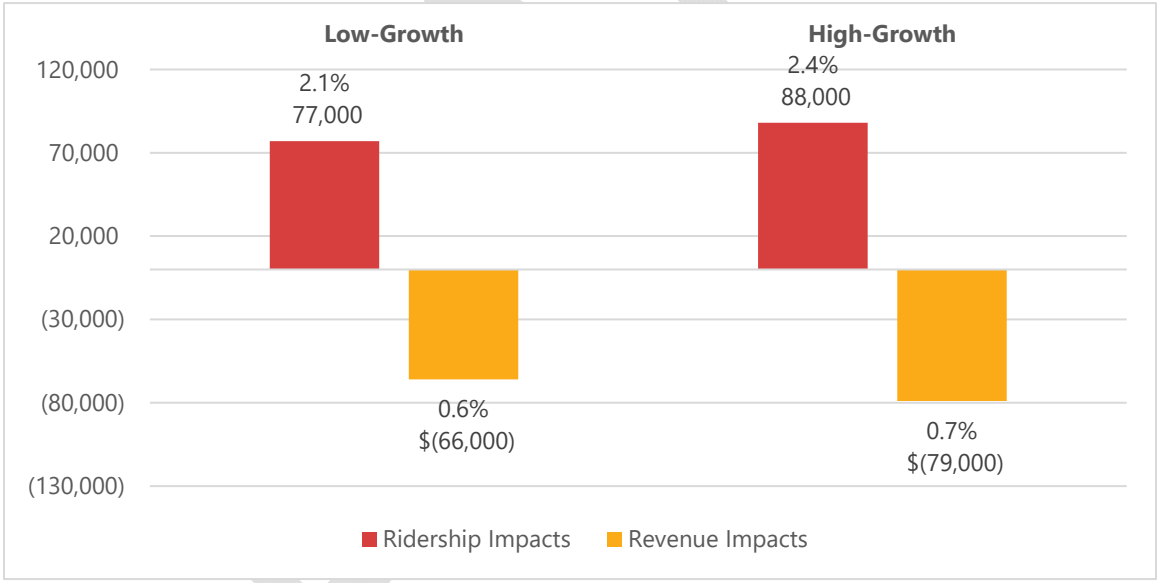


Figure 5-9 Youth Zero-Fare Estimated Ridership and Cost Impacts

	Low-Cost Estimate	High-Cost Estimate
Fixed-Route		
Projected Ridership Increase	76,000	87,000
Additional Annual Operating Costs	$13,000	$13,000
Foregone Farebox Revenue (2022)	$35,000	
Paratransit		
Projected Ridership Increase	1,000	1,000
Additional Annual Operating Costs	$13,000	$26,000
Foregone Farebox Revenue (2022)	$4,000	
Systemwide		
Cost of Fare Collection	--	
Estimated Additional Annual Cost	**$66,000**	**$79,000**

Policy Considerations

Should CyRide consider pursuing a youth zero-fare policy, there may also be an opportunity to improve connectivity to local schools. Providing more direct, consistent service to middle and high schools, either on a permanent basis or using trippers timed around school start and end times, would enable CyRide to better capitalize on the potential ridership increase. Ensuring that service is available to meet the needs of youth and K-12 students in coordination with zero-fare service would encourage additional ridership than the zero-fare policy alone.

SCENARIO 4 – ZERO-FARE BY TIME/DAY

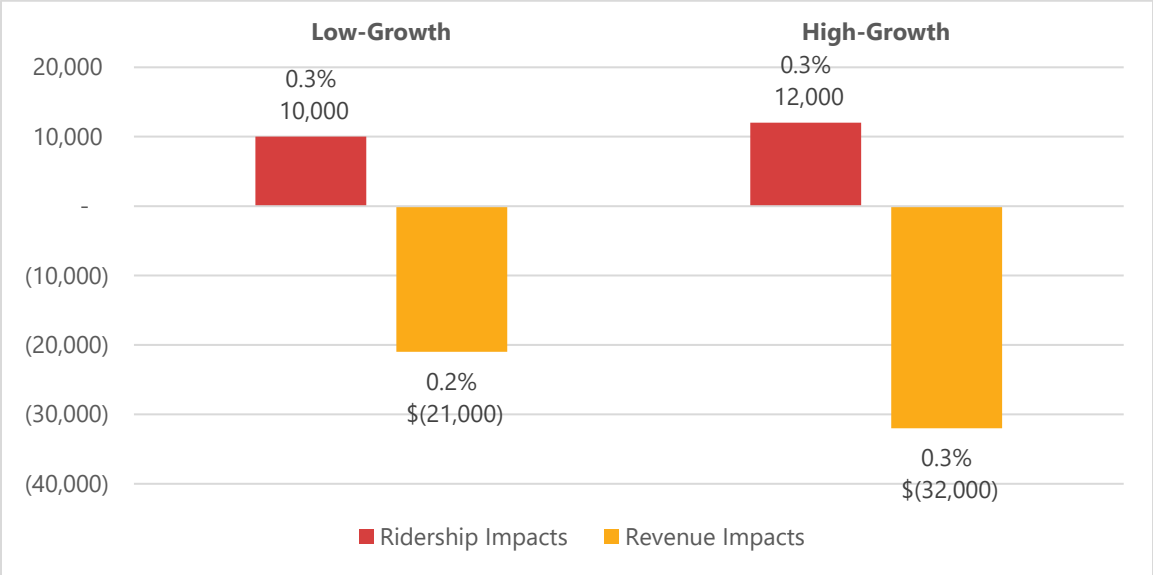
Another approach to partial zero-fare service is to target the policy to apply at specific times or days when ridership is generally lower and there is available capacity on-board vehicles. This approach may be used to encourage additional ridership during off-peak times, making service more productive and avoiding additional operating costs related to trips exceeding on-board capacity thresholds. Through conversations with CyRide staff, three time periods were identified with available on-board capacity that may be strong candidates for partial zero-fare service, including:

- Weekends
- Summers, including the months of May through August (outside of ISU Fall and Winter Semesters)
- Evenings after 6:00 pm

The ridership and revenue implications for these three alternatives are shown individually in Figure 5-10, Figure 5-11, and Figure 5-12, respectively. Because there is available on-board capacity during all three of these time periods, there would be no additional fixed-route operating requirements associated with this scenario.

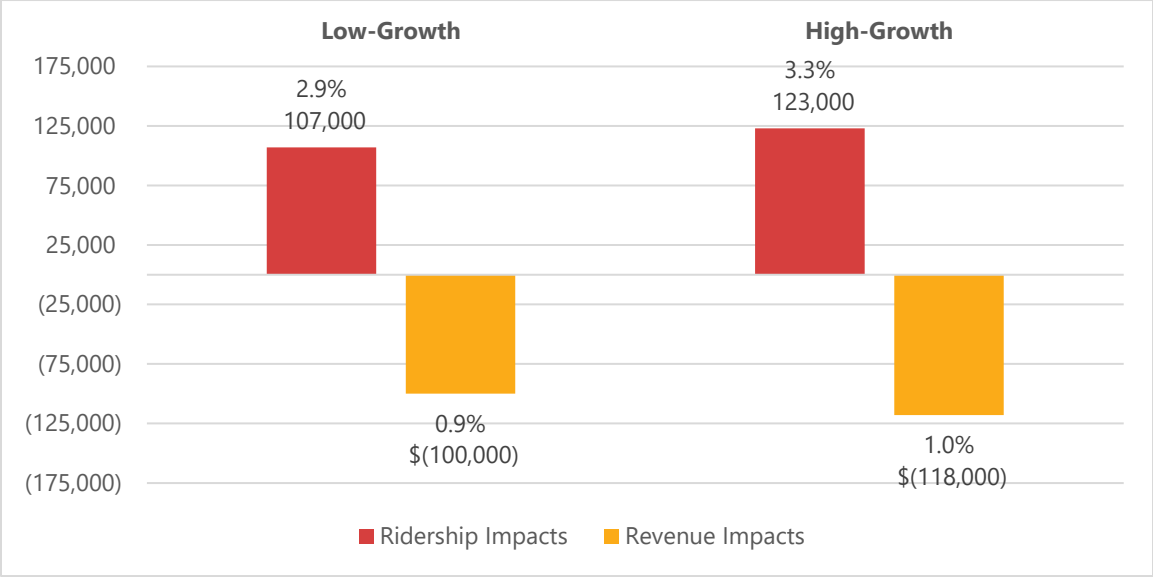
Providing zero-fare service on weekends is anticipated to have a relatively low impact on ridership, including about a 0.3% increase in ridership (between 10,000 and 12,000 additional trips per year) and an increase in operating costs between 0.2% and 0.3% ($21,000 to $32,000 per year). These impacts are relatively small due to low ridership on weekends when ISU students are less likely to travel to campus and service levels are lower than weekdays.

Figure 5-10 Weekend Zero-Fare Ridership and Revenue Impacts



Because such a high percentage of ridership is affiliated with ISU, transit service during the summer months, when ISU enrollment is substantially lower, operates with fewer on-board capacity issues. Providing zero-fare service during the summer months (including the months of May through August), would have the most significant impacts of the alternatives explored in Scenario 4, including between a 2.9% and 3.3% increase in ridership (107,000 to 123,000 additional trips) and between 0.9% and 1.0% increase in operating costs (between $100,000 and $118,000 per year).

Figure 5-11 Summer (May-August) Ridership and Revenue Impacts



Providing zero-fare service on evenings after 6:00 pm would also have relatively minor impacts to ridership and revenue, including between a 0.4% and 0.5% increase in ridership (16,000 to 19,000 trips per year) and about a 0.1% increase in operating costs ($8,000 to $9,000 per year).

While the ridership and revenue impacts of this alternative are generally low, there are potential issues associated with this approach in terms of communicating the policy and how rider behavior will respond. For example, if zero-fare service begins at 6:00 pm, passengers may be more likely to avoid the service between 5:00 pm and 6:00 pm, instead choosing to wait for a later trip that would be zero-fare. There is also potential for increased fare disputes from passengers who board prior to the transition into zero-fare service as some passengers may feel that it was "close enough" to 6:00 pm and that they should have zero-fare service. This should be an additional consideration for CyRide before exploring a policy of zero-fare service in the evenings.

A side-by-side breakdown of ridership and revenue impacts for this scenario are shown in Figure 5-13.

Figure 5-12 Evenings (After 6:00 pm) Zero-Fare Ridership and Revenue Impacts

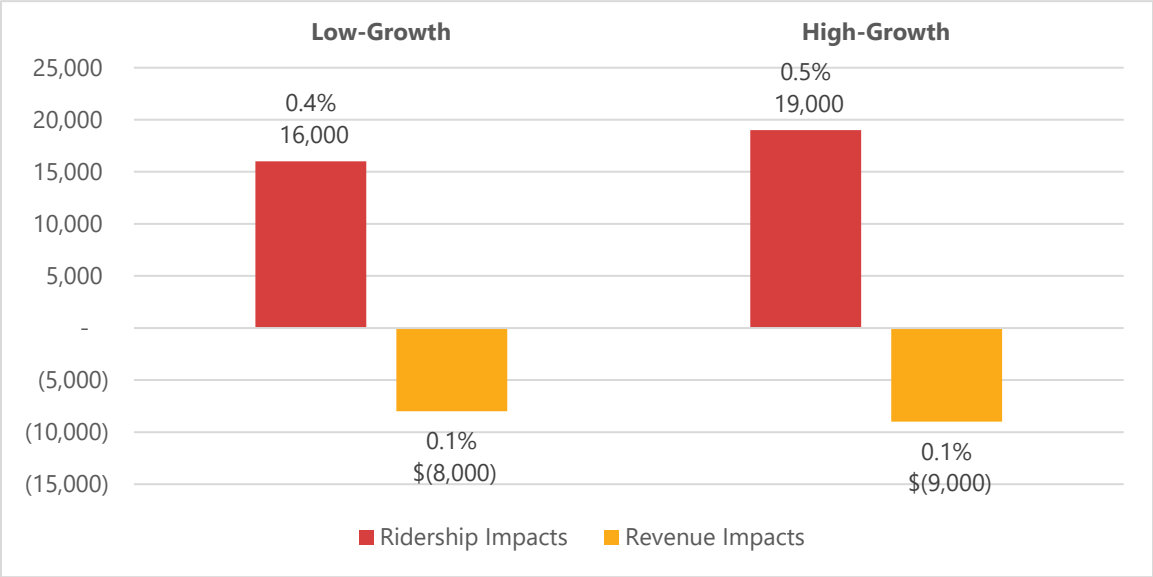


Figure 5-13 Weekend, Summer, and Evening Zero-Fare Estimated Ridership and Cost Impacts

	Weekend		Summer		Evening	
	Low-Cost Estimate	High-Cost Estimate	Low-Cost Estimate	High-Cost Estimate	Low-Cost Estimate	High-Cost Estimate
Fixed-Route						
Projected Ridership Increase	10,000	11,000	106,000	121,000	16,000	19,000
Additional Annual Operating Costs	--	--	--	--	--	--
Foregone Farebox Revenue (2022)	$7,000	$7,000	$76,000	$76,000	$8,000	$8,000
Paratransit						
Projected Ridership Increase	300	600	900	1,700	100	100
Additional Annual Operating Costs	$12,000	$24,000	$18,000	$36,000	--*	$1,000
Foregone Farebox Revenue (2022)	$2,000	$2,000	$6,000	$6,000	--*	--*
Systemwide						
Cost of Fare Collection	--	--	--	--	--	--
Estimated Additional Annual Cost	**$21,000**	**$32,000**	**$100,000**	**$118,000**	**$8,000**	**$9,000**

*Paratransit impacts associated with Evening service are generally low, accounting for less than $1,000 in foregone farebox revenue and less than $1,000 in additional operating costs in the low-cost estimate. This evaluation rounds to the nearest 1,000, thus these are displayed as having no impact.

ZERO-FARE ALTERNATIVES SUMMARY

Zero-fare service has been shown to be an effective approach for quickly and sustainably increasing ridership. However, operationally factors including foregone farebox revenue, increased operating costs, available on-board capacity, and alternative funding sources may complicate the feasibility of systemwide zero-fare service or the specific approach used for partial zero-fare service. To better understand the relative costs and benefits of each scenario explored in this evaluation, Figure 5-14 shows the side-by-side ridership and revenue impacts for all four scenarios and the sub-scenario alternatives. For simplicity, this chart shows the high growth-high cost impacts only, not the low growth-low cost impacts, and represents the maximum anticipated ridership and operating cost impacts for each scenario.

Across all scenarios, ridership impacts range from between a relatively small increase of 12,000 annual trips (0.3% increase) for zero-fare service on weekends, to a much more significant 365,000 annual trips (10.0% increase) for systemwide zero-fare. Zero-fare evening service represents the lowest increase in operating costs at $9,000 per year (0.1% increase) and systemwide zero-fare represents the largest operating cost increase of $360,000 (3.1% increase).

Youth zero-fare service provides a moderate increase in ridership (2.4%) with a relatively low increase in operating costs (0.7%) and represents a strong opportunity for partial zero-fare service as CyRide identifies alternative funding sources and policy implications of systemwide zero-fare service.

Zero-fare service for low-income populations has larger impact on ridership and revenue, between a 4.8% and 6.7% increase in ridership with a 1.4% to 2.0% increase in operating costs. This policy would have positive equity implications as non-ISU CyRide passengers are disproportionately lower income. However, income verification represents a policy hurdle for CyRide that must be addressed prior to implementation.

Zero-fare service on weekends, Summers, and evenings represent relatively low ridership and revenue impacts compared to other scenarios. Similar to zero-fare youth service, these may represent intermediary steps to test zero-fare service on a smaller scale while CyRide identifies alternative funding sources and further evaluates impacts on service quality and operating costs.

Figure 5-14 Zero-Fare Scenario Evaluation Impacts (High Growth – High Cost Only)

NEXT STEPS AND CONSIDERATIONS

This evaluation seeks to identify the specific costs, benefits, tradeoffs, and policy considerations associated with various approaches to providing zero-fare transit service in Ames. It does not provide firm recommendations for which, if any, zero-fare alternative CyRide should pursue. Instead it provides a neutral examination of the anticipated impacts to ridership and revenue, policy considerations associated with each alternative, and sets the stage for decision makers to determine the appropriate path forward for the agency.

While the specific impacts to ridership, operating costs, and foregone farebox revenue are detailed earlier in this chapter and in Chapter 4, there are a number of specific considerations that CyRide must continue to evaluate prior to pursuing any specific approach to zero-fare service. A number of these considerations, particularly additional service improvements and administration related to low-income and paratransit eligibility, will require additional operating costs that are not quantified as a part of this evaluation.

Alternative Funding Sources

In all zero-fare scenarios, including systemwide and partial zero-fare, there is an anticipated increase in net operating costs. There are several alternative funding sources currently available to CyRide as well as best practices identified in Chapter 3 of this report. Potential alternative funding sources already used by CyRide or other peer agencies include:

- Expanding the existing City of Ames property tax levy
- Expanding partnership funding with ISU
- Exploring additional funding partnerships with local businesses, non-profits, and government agencies, similar to Missoula, MT
- Exploring alternative utilities-based funding mechanisms, similar to Corvallis, OR

Workforce Shortage Impacts

Both the short and long-term impacts of the ongoing workforce shortage are key considerations for zero-fare service in Ames. CyRide has already been forced to reduce service levels and is unable to provide budgeted tripper service on trips exceeding on-board capacity because there are not enough operators available to provide the service. As ridership increases in response to zero-fare service, additional service requirements are anticipated for both fixed-route and paratransit service.

CyRide and paratransit contractors must be prepared to meet this increased demand for service before implementing zero-fare service or else service quality may decline as fixed-route services exceed available capacity and paratransit response times worsen. The agency

should closely monitor full time and part-time employee availability and ensure service can be scaled accordingly before implementation.

Prioritizing Service Improvements

A common tradeoff identified by transit agency staff and riders alike is the prioritization of service improvements vs zero-fare service. While zero-fare service reduces barriers to service and has been shown to increase ridership, the available service must still meet the needs of the community. In the 2021 Ames Resident Satisfaction Survey, participants were asked to identify what services would make them consider using CyRide if they don't currently use the service. Of these respondents, 15% selected service to more areas of Ames, 15% selected more frequent service, 8% selected zero-fare service, and 3% selected lower fares. This suggests that while zero-fare service would encourage some residents to use CyRide more often, that service improvements also play a key role in attracting ridership.

CyRide staff have identified several potential service improvements of interest to the community, including improved transfer timing on several routes, including Route 2 Green and Route 1 Red, providing more direct access to local middle and high schools, and exploring potential service expansion to growing areas of Ames. Any expansion of service to new areas, extension of service spans, or frequency improvements would require additional funding and operators to provide the service. In a cost constrained operating environment, there may not be sufficient funding at one time to both make service improvements and provide zero-fare service. Additional public outreach, project identification, and funding availability may be necessary to prioritize these improvements into the future.

Paratransit Eligibility

It is common in the transit industry to periodically review paratransit eligibility and evaluation practices to ensure alignment with other agencies and identified best practices. As CyRide considers pursing zero-fare service, this presents an opportunity to review, modernize, and expand the existing paratransit eligibility and verification practices to align with industry best practices and ensure people are using the transportation mode that is most appropriate for their mobility needs.

One potential paratransit eligibility policy for CyRide to consider is transitioning to in-person evaluations, rather than using paper applications. This is considered a best practice in the transit industry and can be done by partnering with a local hospital, clinic, or rehabilitation center to perform a physical and/or cognitive evaluation prior to granting paratransit eligibility. This approach typically requires an upfront cost to the agency to perform the evaluation and further study would be required to identify the exact costs associated with revising the evaluation and eligibility process.

Another component of updating the paratransit eligibility process is to emphasize providing conditional access to some passengers. Conditional access recognizes that there are certain circumstances in which it is more appropriate for individuals to ride paratransit and other circumstances in which fixed-route service is most appropriate. These can be based on a number of factors including distance, terrain, slope, weather, temperature, and time of day. For example, someone with mobility needs may only be granted paratransit access for trips that would have required over a ¼ mile walk to reach a bus stop. Additionally, someone with a partial vision impairment may be granted conditional access to use paratransit for trips at night when visibility is reduced. Conditional access is a common practice in the transit industry that seeks to best align services with needs in the community.

Low-Income Verification

As CyRide considers exploring partial zero-fare service applied toward low-income passengers, there will be a need to verify income eligibility for those passengers. This is often a costly process for small and mid-size agencies, with some opting not to verify incomes and instead rely on self-certification to reduce the administrative burden and associated costs. There is an opportunity to identify local non-profits or social service providers which are currently performing income verification to contract out this service for CyRide as well. This would still come with a cost to the agency but may be more cost effective than performing this service in house.

Another potential approach to provide cost effective income verification is to utilize existing means tested programs to signify eligibility. For example, the ORCA LIFT low-income fare program in the Puget Sound region sets their income threshold at 200% of the federal poverty level and allows recipients of all relevant benefits programs with the same or stricter income thresholds to qualify automatically. Applicants may show that they are enrolled in these programs and can qualify for a pass without additional verification. CyRide would still be responsible for verifying income of applicants who are not receiving such benefits but would be able to do so at a lower overall cost by reducing the number of verifications.