APPENDIX D: Fare Study Report

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IOWA CITY AREA TRANSIT STUDY

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1 INTRODUCTION

The Iowa City Area Transit Study (ICATS) fare analysis is a comprehensive review of the current fare structure and policies for Iowa City Transit (ICT) and Coralville Transit. The fare analysis includes a review of:

- Existing fare policies
- Relevant fare-related best practices
- Implications of a fare free system for ICT
- Potential impact to ridership and revenue of modeled fare scenarios
- Fare and policy recommendations

Fare recommendations incorporate results from reviewing national best practices, evaluation of fare scenarios, and refining concepts with agency staff.

FARE ANALYSIS GOALS

Specific goals and objectives for the fare study are summarized as follows:

- **Increase Ridership while Balancing Revenue Goals.** ICT is seeking to double ridership in 10 years, and Coralville Transit is similarly hoping for increased ridership. At the same time, maintaining farebox revenue is important.
- **Improve Passenger Experience.** Simplifying fare pricing improves the passenger experience and makes the fare payment process more intuitive. A revised fare policy should help remove barriers and make transit easier to use.
- **Streamline Fare Structures and Policies.** Look for opportunities for fare integration and improved coordination between agencies, including opportunities for mobile ticketing.
- **Make Transit an Affordable Option.** Consider low-income and disadvantaged populations.

REPORT ORGANIZATION

The report is organized into four chapters in addition to this Introduction:

- **Chapter 02 Existing Conditions.** This chapter highlights fare policies, pricing, fare structure, and revenue and ridership trends.
- **Chapter 03 Fare Free Peer Review and Best Practices.** This chapter provides an overview of findings from other agencies operating fare free service.
- **Chapter 04 Fare Free Analysis.** This chapter summarizes the implications of converting ICT to a fare free system.

- **Chapter 05 Fare Scenarios.** This chapter summarizes the fare scenarios that were modeled and highlights the associated ridership and revenue impacts.
- **Chapter 06 Recommendations.** This chapter builds on the fare scenarios by identifying priority outcomes and combining scenarios into a single preferred recommendation. There is additional discussion of policy recommendations for consideration.

2 EXISTING CONDITIONS

This chapter reviews existing fare structure and policies for ICT and Coralville Transit, as well as summarizing revenue trends, fare media usage, other regional fare policies and practices, and rider demographics to determine opportunities for modifications to fare policies and structure.

KEY FINDINGS

- **There is opportunity for better integration of ICT and Coralville Transit passes, and existing pass interoperability is not well advertised.** Both agencies offer several different passes, some of which cannot be used on both systems and can only be used during specific off-peak hours. This information is not clearly communicated on either agency website and may be confusing for passengers.
- **The University of Iowa (UI) U-Pass is the most commonly used pass product and generates the majority of fare revenue** for both ICT and Coralville Transit**.**
- **Farebox recovery ratio is generally high for both ICT and Coralville Transit.** Since 2012, farebox recovery ratio has ranged from 21% to 28% for ICT and from 31% to 39% for Coralville Transit. Farebox recovery ratio for Coralville Transit has been steadily decreasing since 2015.
- **Cash fares are used more often and account for a larger portion of fare revenue on Coralville Transit than ICT.** Cash fares account for 32% of passengers and 31% of fare revenue on Coralville Transit, compared to 21% of passengers and 22% of revenue on ICT.

FARE STRUCTURE

Overview

Transit fares differ across the transit providers. Figure 2-1 compares the fare structure across agencies. Each agency has a unique fare structure and discount policies, which are discussed in greater detail below.

Figure 2-1 ICT and Coralville Transit Fixed-Route Fare Structure

Fare Type	ICT	Coralville
Cash Fares		
Adults	$1.00	$1.00
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	$0.75	$0.75 (between 6:00 p.m. and midnight and all-day Saturday)
Children under 5	FREE	FREE
Passes		
24-hour pass	$2.00	N/A
10-ride pass	$8.50	N/A
20-ride pass	N/A	$20.00
31-Day adult pass	$32.00	$32.00
31-Day youth pass	$27.00	N/A
Youth semester pass	$100	N/A
Elderly low-income monthly pass	$27	N/A
UI student U-Pass (12 months)	$240 ($168 without a University parking permit)	$240 ($168 without a University parking permit)
UI faculty/staff annual pass	$28/month ($15 without a University parking permit)	$28/month ($15 without a University parking permit)
Kirkwood semester pass	$100	N/A
Intermodal Facility Pass	N/A	$50

Pass Products

ICT and Coralville Transit each offer unique pass products, some of which are interoperable and some of which can only be used for a specific agency or at specific times.

Inter-Agency Passes

These passes are valid on both ICT and Coralville Transit service:

- **31-Day Pass** – Magnetic swipe cards that become valid the first time they are used in the farebox and are good for the next 31 days. These passes provide unlimited rides during the 31-day period.
- **31-Day Youth Pass** – Magnetic swipe cards that become valid the first time they are used in the farebox and are good for the next 31 days. Valid only for youth between the ages of 5 and 18. This pass is offered through ICT and accepted on both ICT and Coralville Transit.
- **U-Pass** – The combined category for the UI Annual Student Pass and Faculty/Staff Pass. The U-Pass is an RFID smartcard and provides unlimited rides.

- **Semester Pass** – Semester passes are available to Iowa City Community School District (ICCSD) students and Kirkwood Community College students. The Semester pass is a magnetic strip card that provides unlimited rides over the duration of the semester. These passes are offered through ICT and accepted on both ICT and Coralville Transit.
- **ICT Disabled Off-Peak Pass** – The disabled off-peak pass is an RFID smartcard issued free of charge every two years to individuals with a temporary or permanent disability. The pass provides unlimited rides from 9:00 a.m. to 3:30 p.m. and after 6:30 p.m. on weekdays, as well as all day on Saturday. This pass is offered through ICT and accepted on both ICT and Coralville Transit.
- **ICT Senior and Senior Low-Income Off-Peak Pass** – ICT offers senior citizens who are residents of Iowa City a magnetic swipe card that provides a 50% discount on fares during off-peak service. The senior off-peak low-income pass operates the same way as the senior off-peak pass except it allows the pass holder to ride for free during off-peak service. To qualify for the senior low-income off-peak pass, the customer must be at least 60 years of age, an Iowa City resident, and have proof from Social Security or Department of Human Services (DHS) of low-income status. These passes are offered through ICT and accepted on both ICT and Coralville Transit.
- **Coralville Intermodal Facility Pass** – The Coralville Intermodal Facility offers a park-and-ride commuter program which includes a parking space and unlimited bus trips for $50 per month. This pass is offered through Coralville Transit and accepted on both Coralville Transit and ICT.
- **Coralville Senior and Disabled Pass** – These magnetic swipe card passes are free to Coralville residents 65 and older or with a temporary or permanent disability. This pass can be used on Coralville Transit anytime and on ICT during the off-peak hours of 9:00 a.m. to 3:30 p.m. and after 6:30 p.m. on weekdays, as well as Saturdays.

Iowa City Transit Passes

These passes are valid only on ICT service and cannot be used as payment for Coralville Transit service. ICT exclusive passes include the 24-hour pass, 10-ride pass, and strip tickets.

- **10-Ride Pass** – The 10-ride pass is a magnetic swipe card encoded with 10 single trips for use on ICT service.
- **Strip Tickets** – Orange strip tickets are individual tear-off paper tickets that are sold or donated by ICT to local social service agencies. Each ticket is good for one ride.

Coralville Transit Passes

These passes are valid only on Coralville Transit service and cannot be used as payment for ICT service. The only Coralville Transit exclusive pass is the 20-ride pass.

- **20-Ride Pass** – The 20-ride pass is a magnetic swipe card encoded with 20 single trips and is only valid on Coralville Transit service.

Rider Information and Communication

The primary source of public information for fares, pass products, and discounts are the agency websites. While most pass products are accepted by both ICT and Coralville Transit, neither agency makes this particularly clear. The Coralville Transit website marks each pass product that

is honored by ICT with an asterisk, and ICT does not provide any information on interagency passes. The lack of clarity on pass product availability and interoperability may be confusing to passengers and create a barrier for using the service. Clearly indicating passes that are accepted by both agencies and those that are exclusive to specific agencies would make the systems easier to understand for passengers and improve the customer experience. In the future, there is opportunity to better integrate and streamline pass offerings.

Pass Multipliers

Pass multipliers are the number of single trips that a rider must purchase to "break even" on the cost of a given pass product. For example, a day pass with a 2x multiplier means that a passenger would need to ride transit twice in a day to break even. Pass multipliers can be adjusted to make passes more attractive fare options for riders or to raise additional revenue for the agency. ICT and Coralville Transit pass products and multipliers are shown in Figure 2-2.

ICT offers day passes, monthly passes, and discounted monthly youth and low-income passes. Coralville Transit only offers monthly passes. The 31-day monthly passes are priced consistently between the two agencies. There is an opportunity to further improve consistency between the agencies by standardizing other pass products.

Figure 2-2 Agency Pass Multipliers

	Iowa City Transit		Coralville Transit	
	Fare	Multiplier	**Fare**	Multiplier
Base Fare	**$1.00**		**$1.00**	
Day Pass	**$2.00**	2	***n/a***	*n/a*
Monthly Pass	**$32.00**	32	**$32.00**	32
Monthly Youth Pass	**$27.00**	27	***n/a***	*n/a*
Monthly Low-Income Pass	**$27.00**	27	***n/a***	*n/a*

Discount Policies

Discount policies vary between ICT and Coralville Transit, as shown in Figure 2-3. Generally, there is an opportunity to standardize discount policies by aligning the discounts offered for youth, seniors, and people with disabilities.

Youth

Both ICT and Coralville Transit currently offer free rides for children under age 5. Both agencies offer 25% discounted fares for youth. However, ICT defines youth as ages 5-18 while Coralville Transit defines youth as ages 5-15. Additionally, on Coralville Transit service, youth fare discounts are only valid during off-peak times, between 6:00 p.m. and midnight and all-day Saturday.

Disabilities

Both agencies offer free service for people with disabilities. Free service for people with disabilities on ICT is only offered during off-peak times—weekdays between 9:00 a.m. to 3:30 p.m., weekdays after 6:30 p.m., and Saturdays. Free service for people with disabilities is available at all times on Coralville Transit service.

Seniors

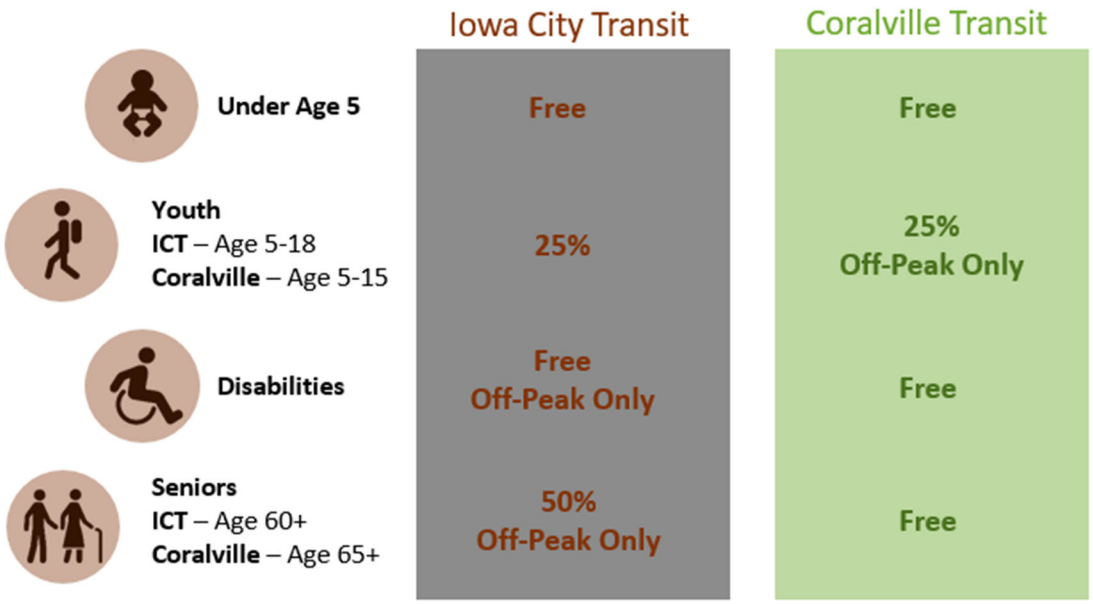
ICT offers 50% discounts for seniors age 60 and older during off-peak periods only, weekdays between 9:00 a.m. to 3:30 p.m., weekdays after 6:30 p.m., and Saturdays. Coralville Transit offers free service to seniors age 65 and older at all times.

Other Discounts

There are a number of other discount policies that are unique to ICT and Coralville Transit, including:

- **ICT Saturday Family Fare** – Entire families may ride ICT services for a fare of $1 on Saturdays. This discount is not offered on Coralville Transit service.
- **ICT Elderly Low-Income Discount** – In addition to the 50% off-peak discount offered to seniors on ICT service, seniors with low incomes are eligible for free service during off-peak service.
- **Medicare Cardholders** – Medicare cardholders are eligible for a 50% discount during off-peak periods on both ICT and Coralville Transit.
- **SEATS Cardholder** – Passengers who qualify for ADA paratransit service provided by Johnson County SEATS receive a 50% discount on ICT during off-peak times and ride for free on Coralville Transit.

Figure 2-3 Available Fare Discounts



Interagency Transfers

Due to the differences in fare structure and eligibility requirements, transfers between agencies must follow different sets of rules:

- ICT riders may transfer for free between ICT routes. Transfers are available when it is necessary to use two routes to complete a trip. To receive a transfer, the rider must inform the driver when they pay their fare upon boarding the first bus.
- Coralville Transit riders may transfer for free between Coralville Transit routes.
- Riders can transfer for free between ICT and Coralville and vice versa when they have paid a cash fare. Some of each agency's passes are valid on the other system, while some are not.
- Riders eligible for Johnson County SEATS paratransit service may transfer to ICT for free during off-peak periods and to Coralville Transit for free at any time.

Pass Distribution

The existing pass distribution network (Figure 2-4) varies by pass type and agency. The ICT 24-hour pass is only available on-board vehicles. The 31-day passes for both ICT and Coralville Transit are available at respective city halls and Hy-Vee stores. U-Pass and Kirkwood semester pass are available at university locations. The remaining pass products are only available at city hall locations. There is an opportunity to develop a consistent pass distribution network which offers the same passes at the same locations for both agencies. Such a distribution network would enhance the customer experience by allowing for purchase of all pass types in a greater variety of locations.

Figure 2-4 Existing Pass Distribution Network

Agency	Fare Type	Onboard	Transit/ Government Building*	University Building	Hy-Vee Stores
Iowa City Transit	24 Hour Pass	✓			
	10-Ride Pass		✓		✓
	31-Day Pass		✓		✓
	U-Pass			✓	
	Kirkwood Semester Pass			✓	
	Youth Semester Pass		✓		
Coralville Transit	20-Ride Pass		✓		
	31-Day Pass		✓		✓

*Government Buildings include Coralville City Hall, Coralville Library, Coralville Recreation Center, Iowa City City Hall, and Iowa City Parking

Other Regional Services

CAMBUS

CAMBUS services are fare free and available to the general public. UI's specialized transportation service for persons with disabilities, Bionic Bus, is also fare free and available to disabled students, faculty, and staff within most areas of Iowa City and Coralville.

Johnson County SEATS Paratransit

The basic cost for a one-way ride is $2.00 for any rural, Iowa City, University Heights, Coralville, and North Liberty trip (Figure 2-5). SEATS also offers a 10-punch card.

Figure 2-5 SEATS Paratransit Fare Structure

Fare Type	SEATS
Standard Cash Fare	$2.00
10-Punch Card	$20.00

FARE MEDIA AND TECHNOLOGY

ICT and Coralville Transit fare media are a combination of cash, paper tickets, magnetic strip cards, and RFID smartcards. Passengers interact with the farebox in a variety of ways:

- Passengers using the UI Faculty/Staff Pass, UI Student Pass, ICT Disabled Off-Peak Pass, Coralville/Research Park Bus Pass, or Coralville Senior & Disabled Pass pay with an RFID smartcard pass.
- Passengers paying with a 31-Day pass, ICT Semester pass, ICT Senior and Low-Income pass, ICT 10-Ride pass, Coralville 20-Ride pass, swipe a magnetic card at the farebox.
- Paper tickets are used for transfers, and single-ride strip tickets are circulated to local social services agencies.
- Passengers can pay with cash or coins at the farebox.
- When paying a cash fare, if more money than required is inserted, a change card is issued for the remaining balance. Change cards are valid toward the fare on future bus rides.

The majority of ICT and Coralville Transit fare passes are magnetic strip passes that are swiped through the farebox upon boarding. Currently, only the Student and Faculty/Staff U-Passes and the Disabled Passes are enabled with RFID technology.

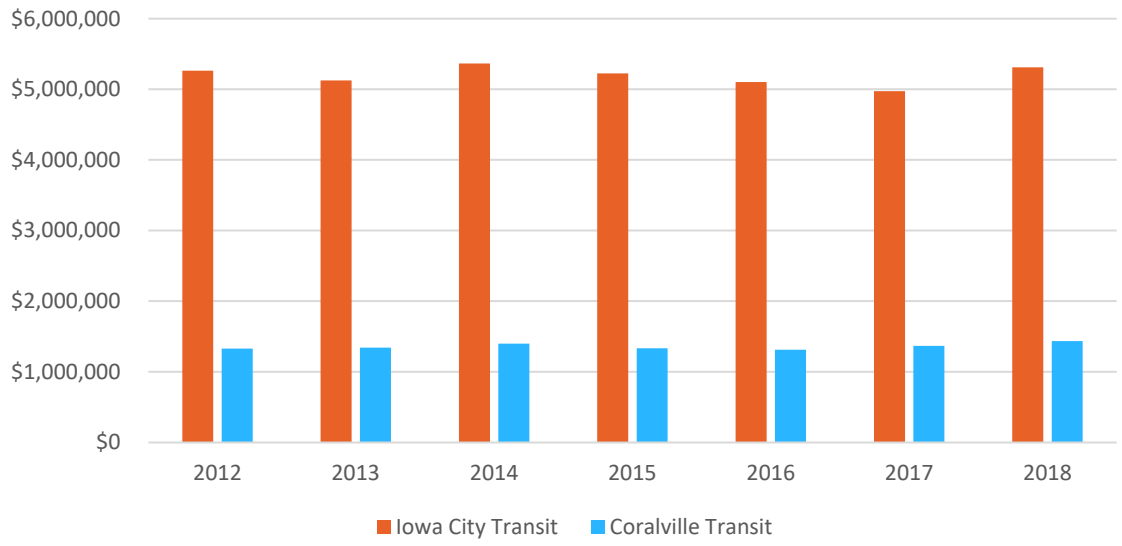
Figure 2-6 Coralville Transit Fare Media

REVENUE TRENDS

Operating Cost

Figure 2-7 shows the total annual operating expenses for ICT and Coralville Transit. From 2012 to 2018, ICT operating expenses have been more than $5 million per year—significantly higher than Coralville Transit. From 2012 to 2018, operating expenses have not significantly changed for either agency.

Figure 2-7 Annual Operating Expense by Agency, 2012-2018

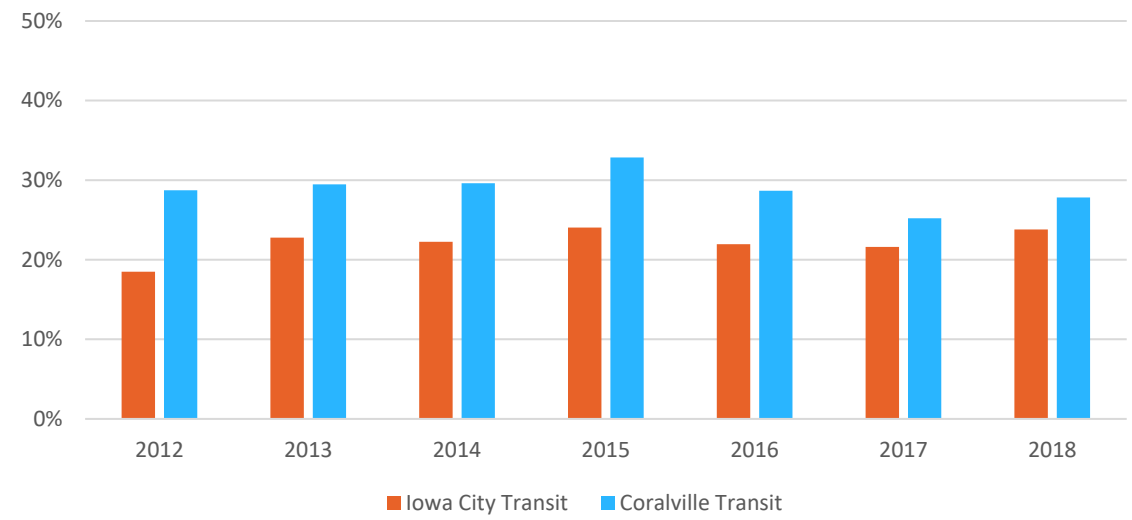


Source: NTD 2012-2018

Farebox Recovery

Farebox recovery is a ratio of farebox revenues to operating expenses and is used to estimate the proportion of a transit agency's operations funded by rider fares. From 2012 to 2018, farebox recovery rates peaked in 2015 for both Coralville Transit and ICT and declined for two years before recovering in 2018. Because operating costs are not significantly increasing for these agencies, the decline in farebox recovery ratio may be due to falling ridership.

Figure 2-8 Farebox Recovery Ratio by Agency, 2012-2018



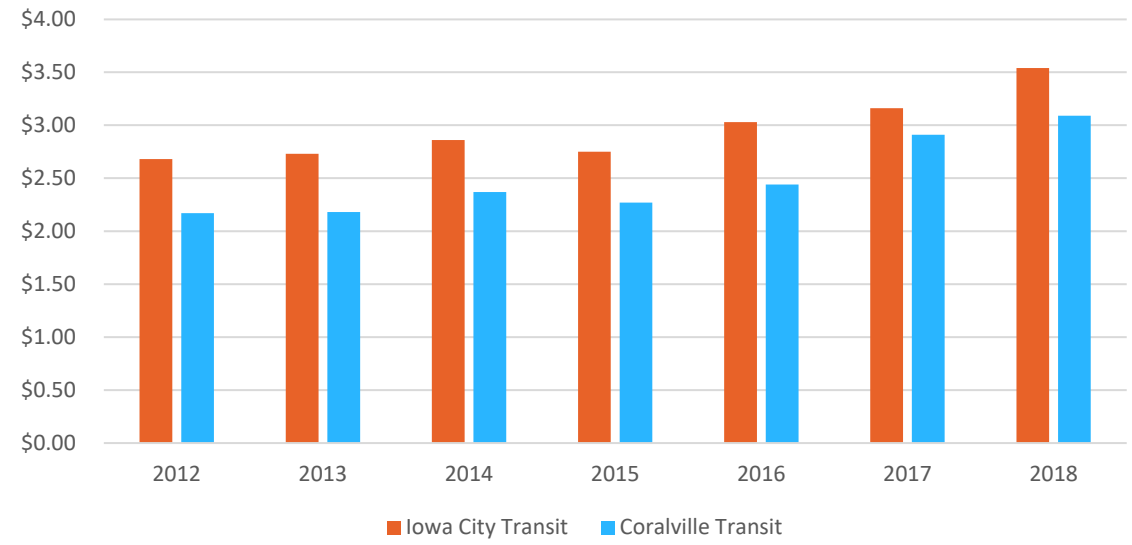
Source: NTD 2012-2018

Operating Cost per Trip

Operating cost per passenger trip is a common measure of a transit agency's cost of providing service. From 2012 to 2018, operating expense per passenger trip increased significantly for all three agencies (Figure 2-9). During the seven-year study period, ICT has typically had the higher cost per passenger trip.

From 2012 to 2018, Coralville Transit's cost per passenger trip increased by 42%, and ICT's cost per passenger trip increased by 32%. Because the amount of service offered by the agencies has not significantly increased, this is likely driven by ridership losses.

Figure 2-9 Operating Expense per Passenger Trip by Agency, 2012-2018

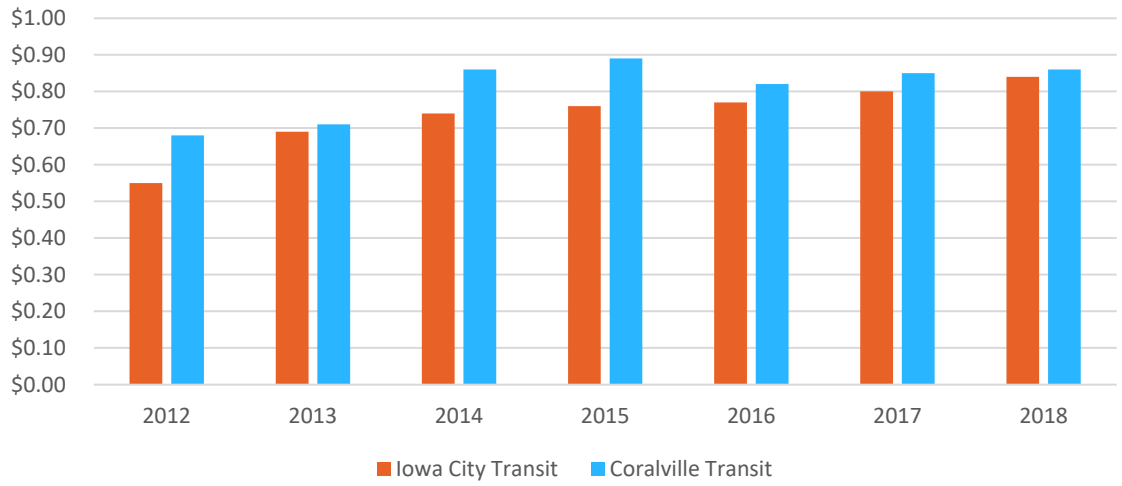


Source: NTD 2012-2018

Average Fare

Due to discount policies, fare discounts, and fare evasion, the full base fare for service is not always paid for every trip—instead, the average fare paid is often lower. From 2012 to 2018, the average fare paid by riders peaked for Coralville Transit in 2015 and declined afterwards (Figure 2-10). The average fare paid by riders on ICT increased steadily from 2012 to 2018.

Figure 2-10 Average Fare by Agency, 2012-2018

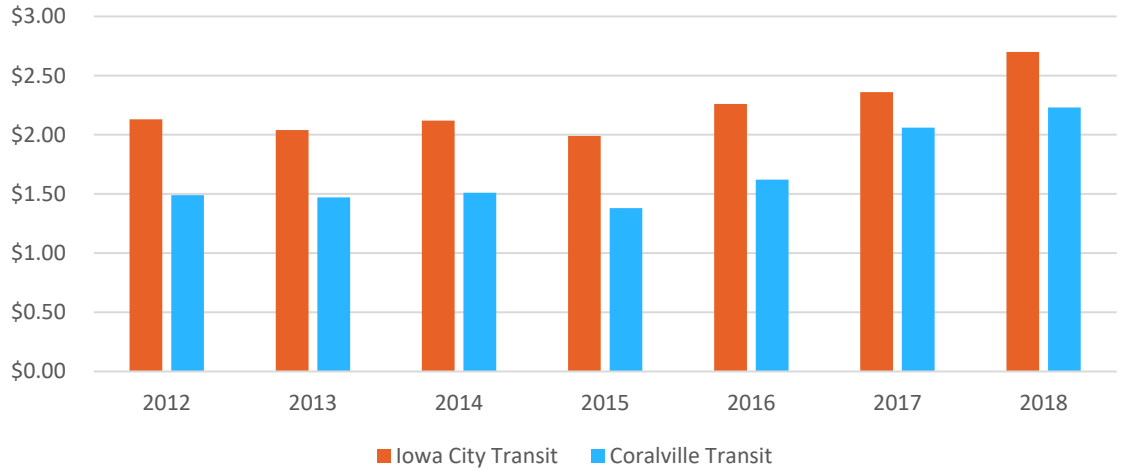


Source: NTD 2012-2018

Subsidy per Trip

The subsidy per trip measures the operating cost per trip paid for by the transit agency (operating cost per trip minus average fare). ICT's subsidy per trip has hovered around $2.25 but has been increasing since 2015. Coralville Transit's per-trip subsidy has increased about $0.75 in the past seven years.

Figure 2-11 Average Subsidy per Trip by Agency, 2012-2018



Source: NTD 2012-2018

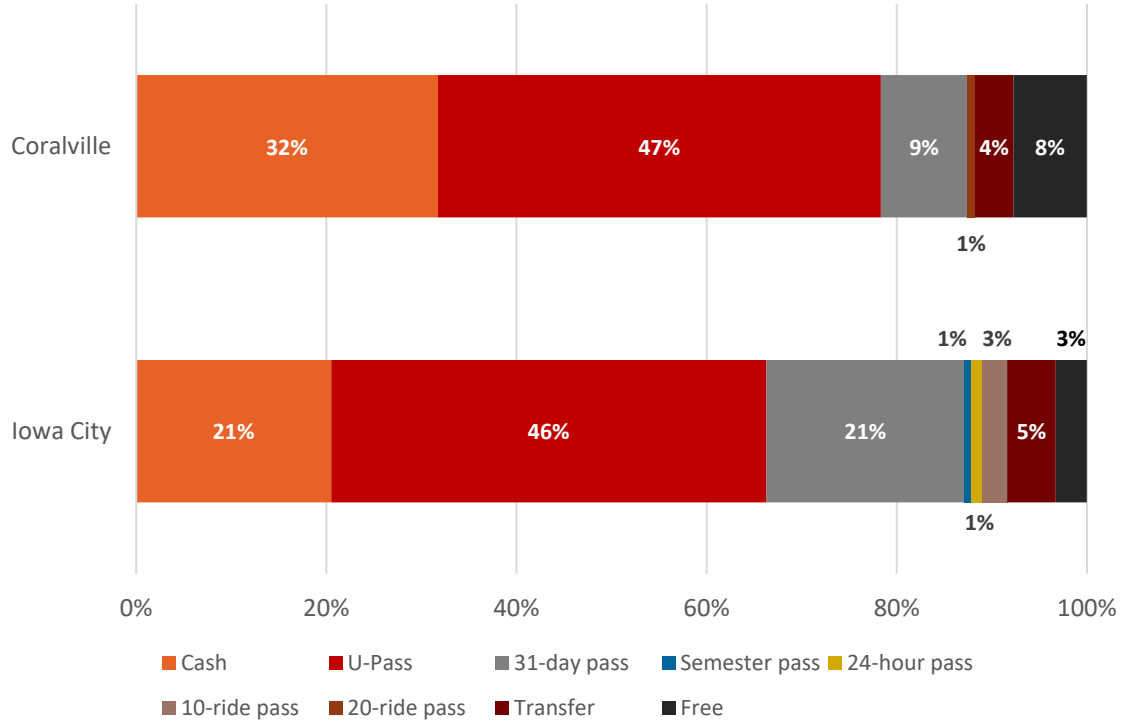
FARE MEDIA USE

A breakdown of ridership and revenue by fare media type for ICT and Coralville Transit provides insight into how riders are currently paying for their transit trips and how much revenue each pass product is generating for the agency.

Passengers on both ICT and Coralville Transit service predominantly use pass products to pay their fare (Figure 2-12). Cash boardings account for 21% of ICT passengers, while U-Passes account for 46% of ICT passengers. Cash payments are made by 32% of Coralville Transit passengers—more than 10% higher than for ICT passengers. U-Passes account for 47% Coralville Transit passengers, a similar breakdown as ICT.

An additional 21% of passengers on ICT paid their fare with a 31-day pass, compared to only 9% percent of Coralville Transit. Transfers, 10-ride passes, 20-ride passes, semester passes, and 24-hour passes are relatively underutilized fare media for both agencies.

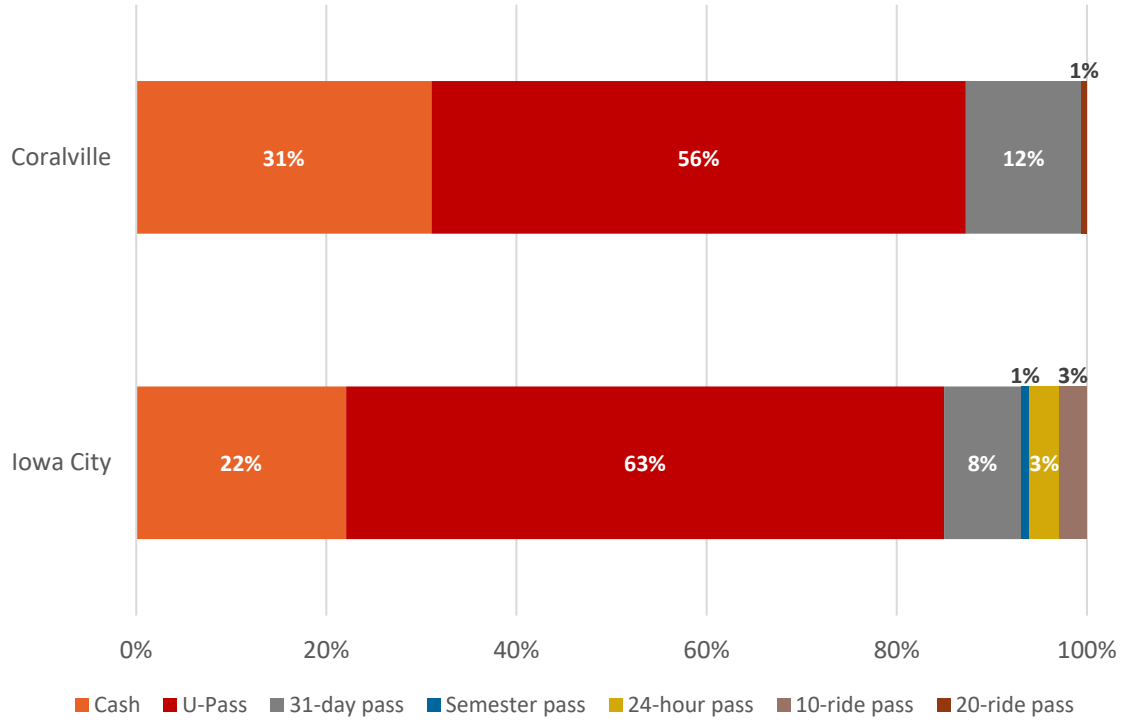
Figure 2-12 Ridership by Fare Media Type



Source: ICT 2018, Coralville Transit 2018

The majority of fare revenue for both ICT (63%) and Coralville Transit (56%) is generated by the U-Pass program, as shown in Figure 2-13. Cash revenue for ICT (22%) and Coralville Transit (31%) is generated proportionately with ridership for both agencies. 31-day passes account for 8% of ICT revenue, despite being used by 21% of passengers. On Coralville Transit, 31-day passes are used by 9% of passengers but account for 12% of revenue. Semester passes, 10-ride passes, 20-ride passes, and 24-hour passes each generate between 1% and 3% of fare revenue for the agencies.

Figure 2-13 Revenue by Fare Media Type



Source: ICT 2018, Coralville Transit 2018

3 FARE FREE PEER REVIEW AND BEST PRACTICES

Successes with fare free transit in Corvallis, Chapel Hill, and Missoula indicate it can be a transformative way to increase public transit use. This memo explores findings from recent interviews regarding fare free transit with three peer agencies: Chapel Hill Transit (Chapel Hill, NC), Corvallis Transit System (Corvallis, OR), and Missoula Urban Transportation District (Missoula, MT).

Key lessons learned from interviews with the three agencies include:

- The agencies used various funding techniques to replace fare revenue in going fare free, including property taxes, university fees, utility service fees, and community partnerships.
- Ridership increased by 30-100% for each agency's fixed-route system. Productivity also increased for all three agencies.
- Increased ridership leads to more frequent stops, which may negate the dwell time savings gained from faster boarding. All door boarding and bus stop consolidation are solutions to consider for reducing dwell time.
- Each agency experienced greater staffing needs than anticipated. Staffing should be indexed to any increases in revenue hours.
- Ridership, revenue hours, and staffing increases for paratransit service should also be anticipated. Additional local partnerships and demand response eligibility are important considerations for managing demand.
- Going fare free has been a largely positive experience and success for each peer agency, including the following benefits:
  - Simplified administration
  - Ridership and productivity increases
  - Travel time and dwell time savings
  - Achievements in livability and public health objectives
  - More repeat riders and mode share shifts
  - Increase in community recognition and pride

Peer Overview

Chapel Hill Transit (CHT), Chapel Hill, NC. CHT transitioned from charging fares to operating with a "prepaid fare" in 2002, funded through an agreement with the Town of Chapel Hill, Town of Carrboro, and University of North Carolina (UNC). Shortly after this change, annual ridership began to increase and ultimately doubled in 10 years. CHT credits this growth in part to its decision to operate fare free.

Corvallis Transit System (CTS), Corvallis, OR. CTS began operating with prepaid fares in 2011, funded through a Transit Operations Fee (TOF) on utility services. The change was linked to a 43% increase in ridership within the first two months with no increase in service hours.

Missoula Urban Transportation District (Mountain Line), Missoula, MT. In January of 2015, all fares on Mountain Line were eliminated for a three year zero-fare demonstration project funded by community partners. After community investment replaced fare revenue, ridership increased about 30-40%. Mountain Line continues to gather data and study the benefits and challenges of the zero-fare demonstration project.

Funding

The agencies used various funding techniques to replace fare revenue in going fare free, including property taxes, university fees, utility service fees, and community partnerships.

Chapel Hill Transit. The decision to go fare free started as a handshake agreement between the Town of Chapel Hill, Town of Carrboro, and UNC. UNC had already been contributing funding to the agency through a university pass agreement, making fares free for the majority of riders. In order to simplify fare payment, the decision was made to make the system to be prepaid for everyone. To make up funding gaps from fares, the Towns of Chapel Hill and Carrboro raised property taxes, and UNC has increased contributions through student and employee fees.

Corvallis Transit System. The idea for prepaid fares was promoted by the Corvallis Sustainability Coalition as a strategy to make the city more livable. This strong local champion helped establish a new utility services fee on water bills to provide dedicated funding not subject to fluctuations in the economy, unlike CTS's former funding through the city's property-tax funded general fund.

The TOF is tied to fuel prices with a floor of $2.75 per household, allowing the agency to earn additional revenue as fuel prices increase. This new funding stream was made possible because Oregon law allows transit to be taxed and treated as a public utility. 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 increase 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. Of the three peer agencies we reviewed, the TOF funding strategy is the simplest.

Mountain Line. Community investment from numerous partners, along with the City of Missoula, replaced the majority of fare revenue. Prior to the zero-fare demonstration project, the agency contracted with University of Montana to provide free rides to students, faculty, and staff. Annual partner revenue is approximately $500,000, which replaces about $465,000 in fare revenue. As of March 2019, the agency had 24 funding partners, with a goal of 40. The growing list of community partners includes public schools, senior services organizations, government organizations, downtown associations, and medical centers. Major partners are the University of Montana, City of Missoula, and two hospitals. The City of Missoula's contribution is separate from other levies, so funding is guaranteed.

Partnership with the agency is a big benefit to local organizations because their name is associated with something so popular. To broaden the types of agencies that are able to participate, Mountain Line offers a tiered contribution structure that allows non-profits and other groups to participate (Figure 3-1). Mountain Line asks for a three-year commitment from partners, which allows for everyone to re-convene every three years to see if the structure still makes sense for the community.

Figure 3-1 Mountain Line Partner Pricing and Benefits Structure

Initial Challenges

The three agencies experienced a few initial challenges, including marketing coordination and confusion about funding.

- **Chapel Hill Transit** continued to order buses with fareboxes until 2012 (10 years after going fare free). Now the agency intentionally orders the buses without fareboxes, which sends a clear message about the agency's intent to continue operating fare free.

- **Corvallis Transit System** provided refunds for passes purchased in advance of the fare free change. They defined a time limit for people to turn in coupons and bus passes to receive a refund. This involved an outreach campaign and an update to all marketing materials about the change.
- **Mountain Line** rolled out zero fare and service improvements at the same time, causing public confusion about how the changes were paid for. The service improvements were funded by a mill levy, but zero fare was funded through partnerships.

Value Proposition

The agencies use value propositions to clarify the reasoning behind going fare free and continue demonstrating program benefits to the public.

- **Chapel Hill Transit** promotes the idea that a citizen's freedom is a huge benefit compared to having to worry about fares.
- **Corvallis Transit System** promotes the value proposition at every tabling event they go to, including the many sustainability events in town. Fare free education is mostly for new residents and OSU students.
- For **Mountain Line**, articulating the value proposition is essential for expanding partnerships. The agency is constantly trying to collect stories from people about how their lives are better because of zero fares, as well as how zero fare contributes to a reduced need for parking, reduced traffic, and improved air quality.

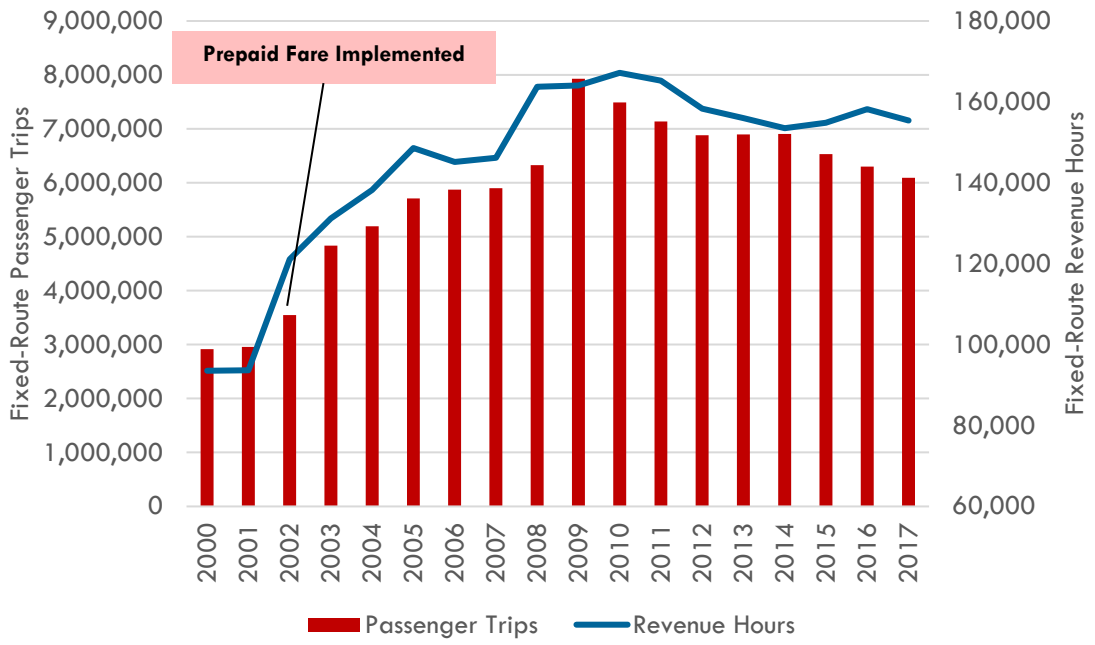
Fixed-Route Service

Ridership and Productivity

Ridership increased dramatically for all three agencies after going fare free. Additionally, each agency saw notable improvements to productivity (Figure 3-5, Figure 3-6, and Figure 3-7).

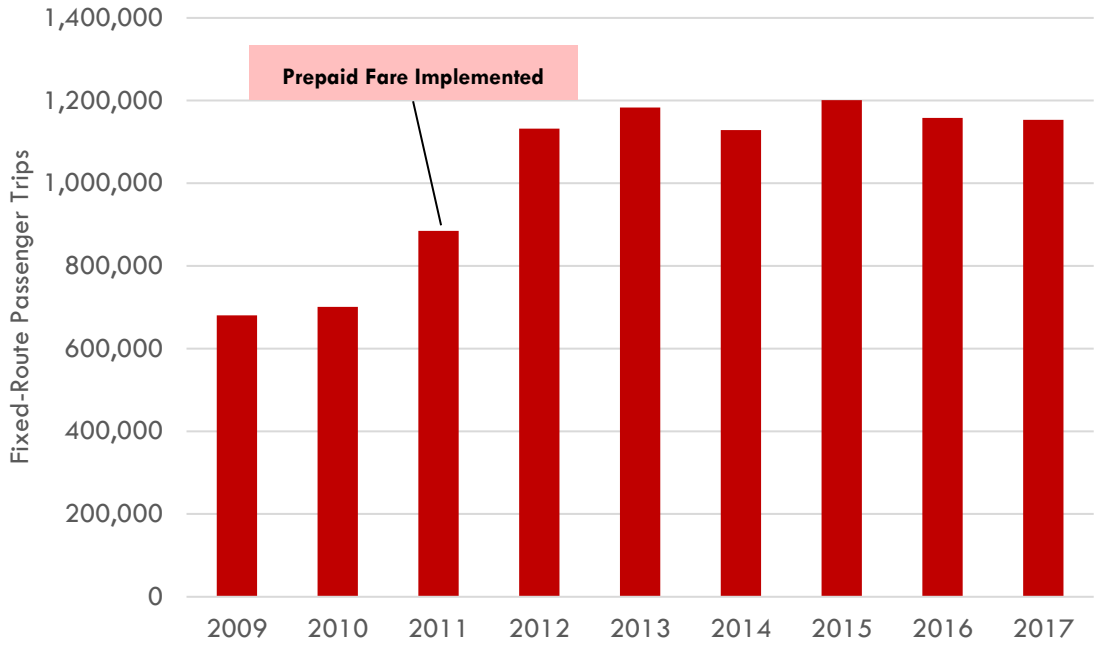
- **Chapel Hill Transit** ridership increased by 56% between 2002 and 2003 when fare free was implemented and continued to increase steadily in the years following the switch to fare free. Between 2002 and 2012, ridership doubled (from approximately 3.5 million to nearly 7 million). As a result, CHT increased service to accommodate new ridership demand (Figure 3-2).
- **Corvallis Transit System** ridership increased 39% in the first year and continued to climb for another two to three years before leveling off (Figure 3-3). New service is expected to continue increasing ridership.
- With no additional service, **Mountain Line** ridership has seen a 70% increase, far surpassing the anticipated 40% increase over three years (Figure 3-4). As of March 2019, fixed-route ridership has leveled off.

Figure 3-2 Chapel Hill Transit Fixed-Route Passenger Trips and Revenue Hours (2000-2017)



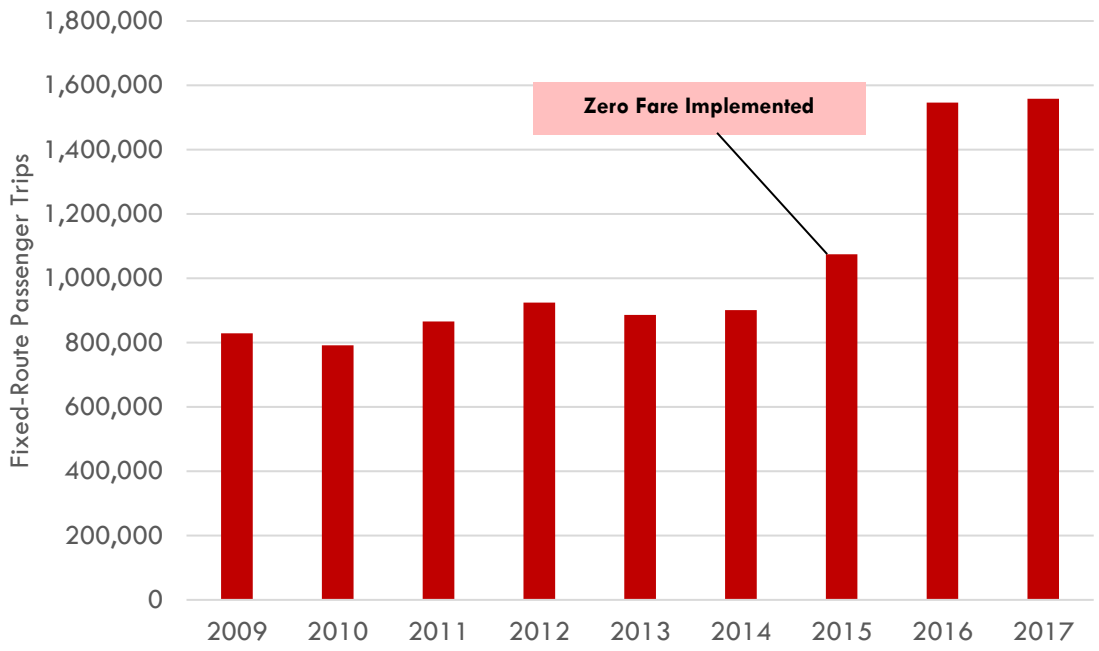
Source: National Transit Database

Figure 3-3 Corvallis Transit System Fixed-Route Passenger Trips (2009-2017)



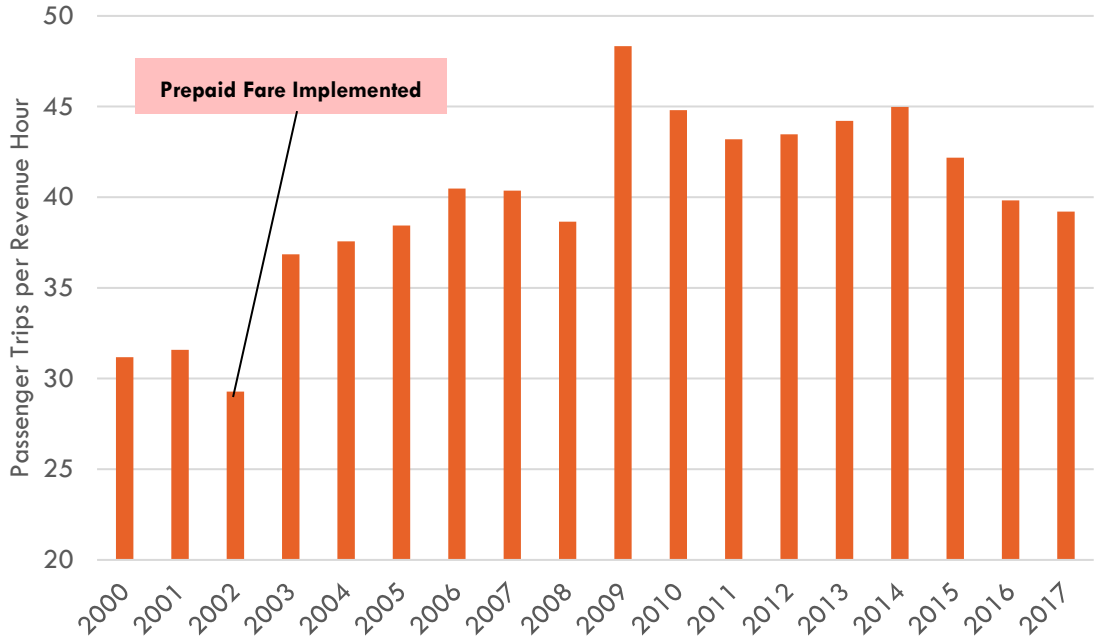
Source: National Transit Database

Figure 3-4 Mountain Line Fixed-Route Passenger Trips



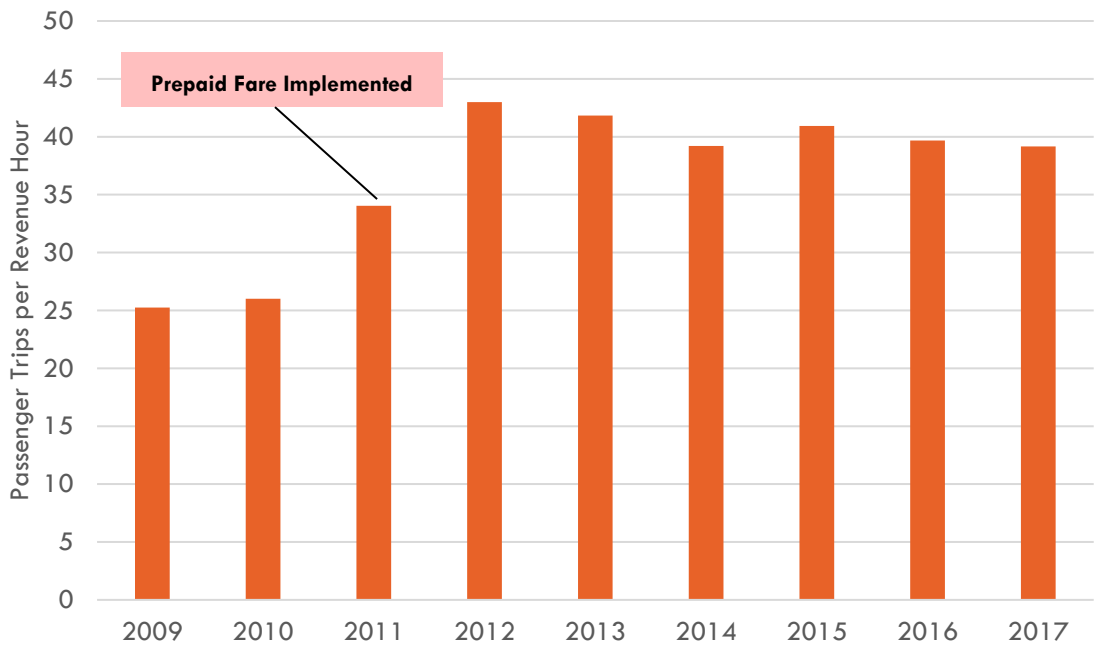
Source: National Transit Database

Figure 3-5 Chapel Hill Transit Passenger Trips per Revenue Hour



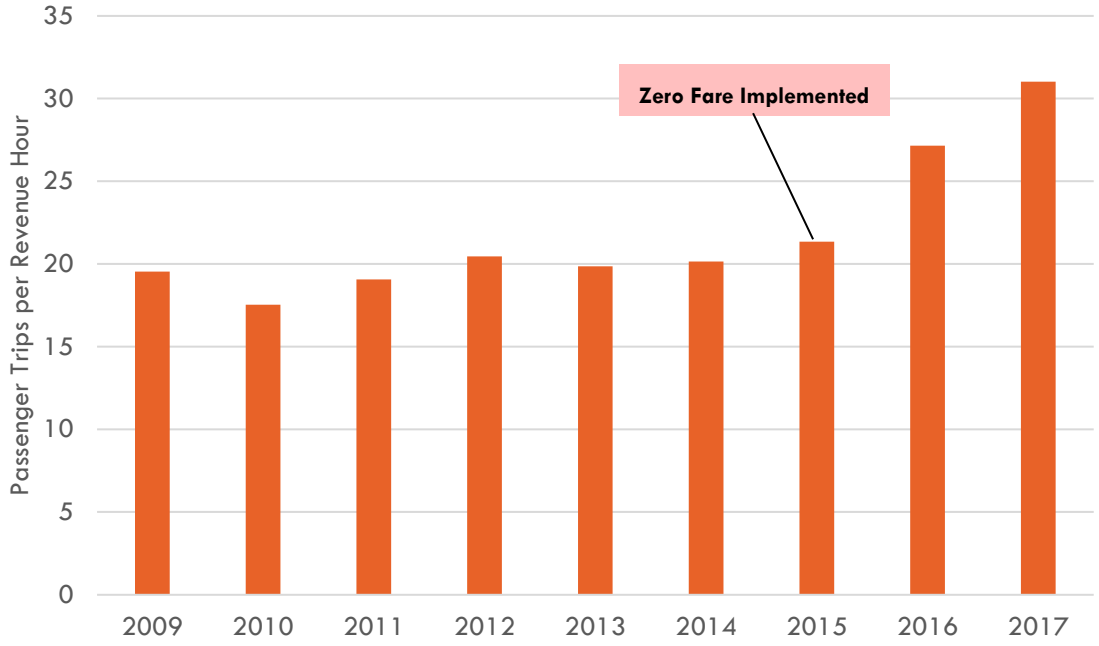
Source: National Transit Database

Figure 3-6 Corvallis Transit System Passenger Trips per Revenue Hour



Source: National Transit Database

Figure 3-7 Mountain Line Passenger Trips per Revenue Hour



Source: National Transit Database

Dwell Time Savings

Increased ridership as a result of fare free operations can also lead to more frequent stops, which can potentially negate dwell time savings from passengers not paying a fare. Impacts to each agency's dwell times as a result of going fare free are outlined below.

- **Chapel Hill Transit.** While buses do stop more frequently with more riders, CHT recognizes they would need to re-build their schedules if they started collecting fares again to allow for additional running time.
- **Corvallis Transit System.** CTS has seen a travel time savings from not collecting fares, though now buses stop at almost every stop, which has impacted on-time performance.
- **Mountain Line.** While the agency has found that dwell time is lower, time savings are likely balanced out by the increase in ridership.

Bus Stop Consolidation

Because increased ridership can lead to more frequent stops, agencies looking to go fare free can consider consolidating bus stops, including evaluation of existing stop spacing, removing stops that are too close together while still providing adequate access to riders, and setting standards for future stop spacing. For the three peer agencies, bus stop consolidation was a separate process from going fare free.

- **Chapel Hill Transit** did not conduct a bus stop consolidation analysis as part of their system change.
- **Corvallis Transit System** felt bus stop consolidation was challenging to implement at the same time as fare free implementation. While a few stops were removed on a case-by-case basis, CTS felt it was not palatable to give riders a new incentive to use the bus, while also telling them the stop closest to them was being eliminated. The agency did conduct a consolidation study in conjunction with expanding service in September 2019.
- **Mountain Line** is addressing stop consolidation as part of their bus stop master plan update, but that has been approached as a process unrelated to fare free implementation.

All-Door Boarding

An additional way to reduce dwell time is to implement all-door boarding policies. Because no fare payment is needed, riders can quickly board the bus at all available entrances, reducing the potential for queues at the front door. To implement, APCs are required on both the front and back doors to maintain accurate ridership counts.

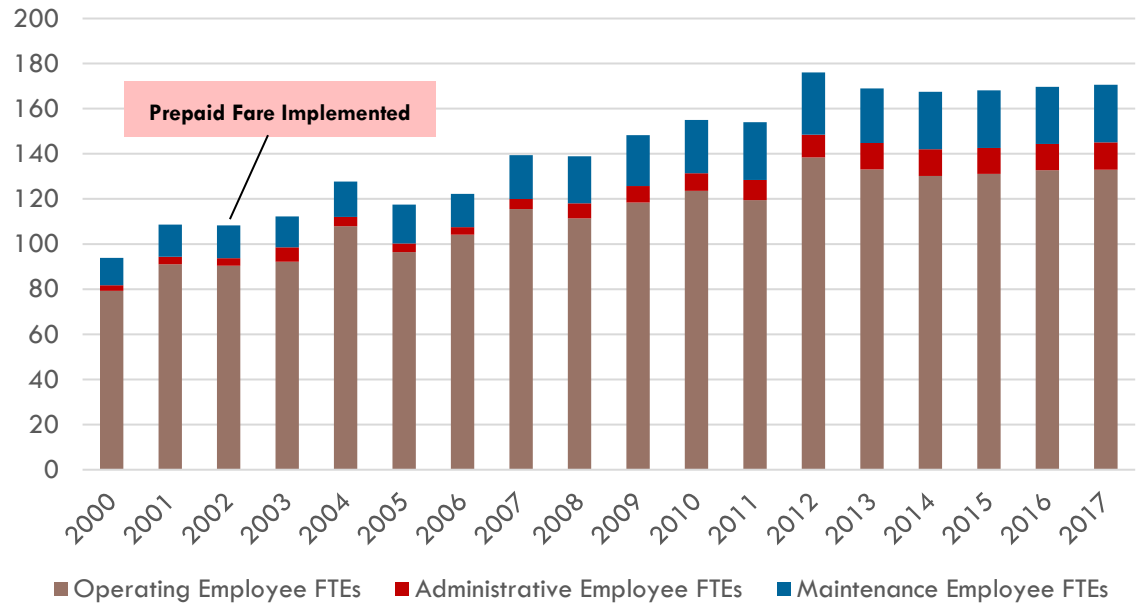
- **Chapel Hill Transit** has recently adopted all door boarding as part of an effort to reduce dwell time and improve on-time performance. As a result, the customer experience has improved. Operators, however, have safety concerns about not being able to check passengers at the front boarding door.
- **Corvallis Transit System** still requires front door boarding because they have APCs that only count boardings through the front door. The agency also feels that it is a safety issue to have passengers board through the back door.
- **Mountain Line** did not adopt a policy on all-board boarding, but some drivers do allow riders to get on at all doors, especially when snow build-up requires it.

Increased Staffing

Upon going fare free, each agency has experienced increasing staffing needs. It is essential to consider the need for expanded staffing levels as part of fare free implementation.

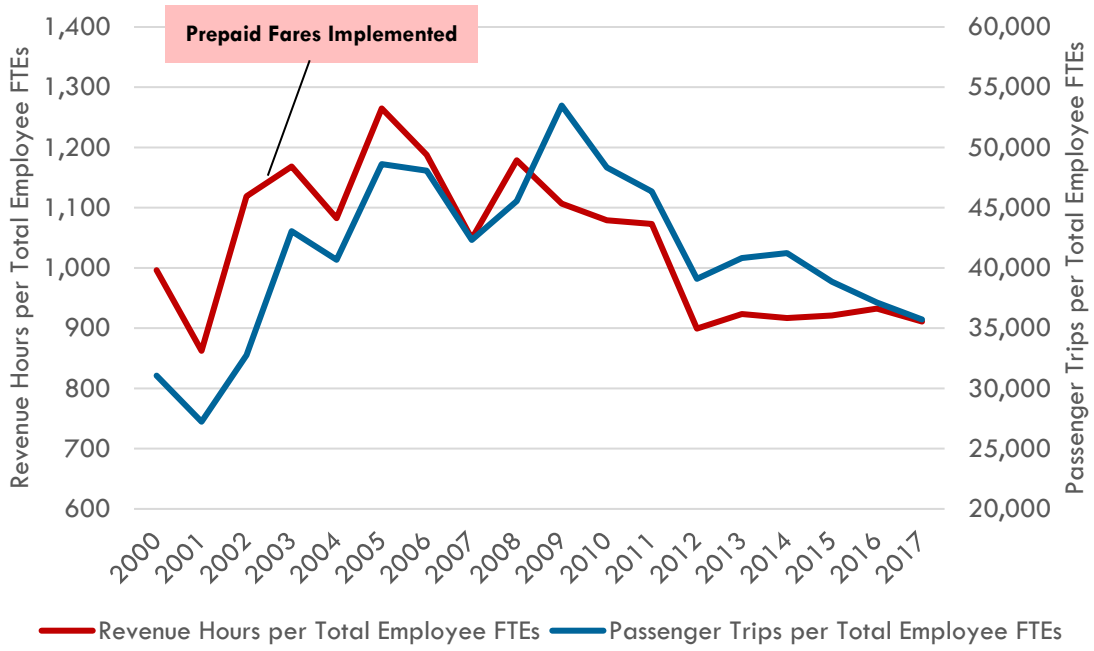
- **Chapel Hill Transit** did not plan well for this, and staffing did not keep pace with revenue hour and ridership increases. It took the agency approximately 10 years to increase staffing to be in line with levels prior to fare free implementation (Figure 3-8 and Figure 3-9).
- **Corvallis Transit System** notes that they were able to save administrative time by not selling group passes, fare media, and counting fares. However, the agency is still short-staffed and was unable to complete some planning efforts as a result. CTS is hoping to hire new staff with additional funding.
- **Mountain Line** has doubled the number of supervisors and in March 2019 was recruiting for more paratransit schedulers (Figure 3-10). There has been pushback from older operators who were used to low-ridership routes and have had to become accustomed with dealing with more people. The agency notes that it has been difficult to hire new staff given the strong economy.

Figure 3-8 Chapel Hill Transit Fixed-Route Employee FTEs



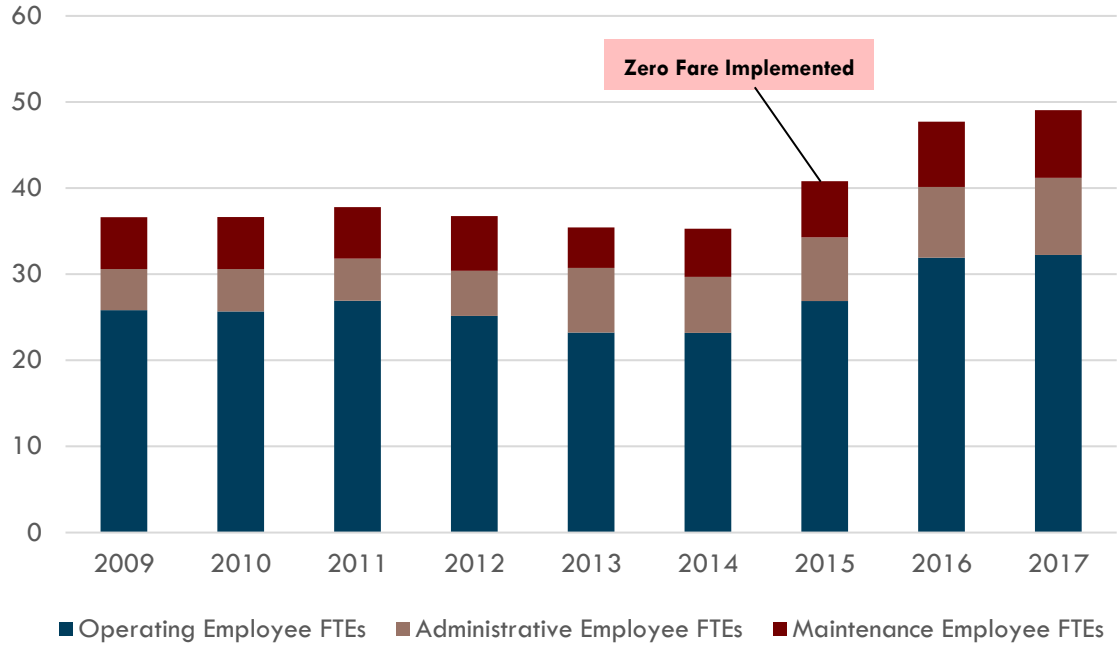
Source: National Transit Database

Figure 3-9 Chapel Hill Transit Revenue Hours and Ridership per Employee FTEs



Source: National Transit Database

Figure 3-10 Mountain Line Fixed-Route Employee FTEs



Source: National Transit Database

Passenger Disturbances

With increased ridership comes the potential for increased passenger disturbances. Agency policies such as origin-to-destination policies can reduce the potential for on-board passenger disturbances.

- **Chapel Hill Transit** has worked to mitigate disturbances by allowing passengers a maximum of one complete round-trip ride. This is enforced by the operator but is rarely an issue, and as such, the rule has been removed from the agency literature. Overall, there has been no significant increase in passenger disturbances in relation to fare free implementation.
- **Corvallis Transit System** has a similar origin-to-destination policy for their riders. The agency has empowered drivers to do something if they feel there is an issue with a particular passenger. Drivers have noticed that the prepaid fare has eliminated conflicts that can occur with paying the fare. The agency also installed cameras on the buses, which they reported have helped cut down on the investigation process about 80%.
- **Mountain Line** has strict policies about passengers loitering at transit centers. There are several policies in place that existed before zero fare, such as a "one-trip" policy and strict policies about weapons and behavior. The agency feels that the problems do not seem to be any worse, there are just more people on the buses overall, which makes more work for the operators than in the past.

Paratransit

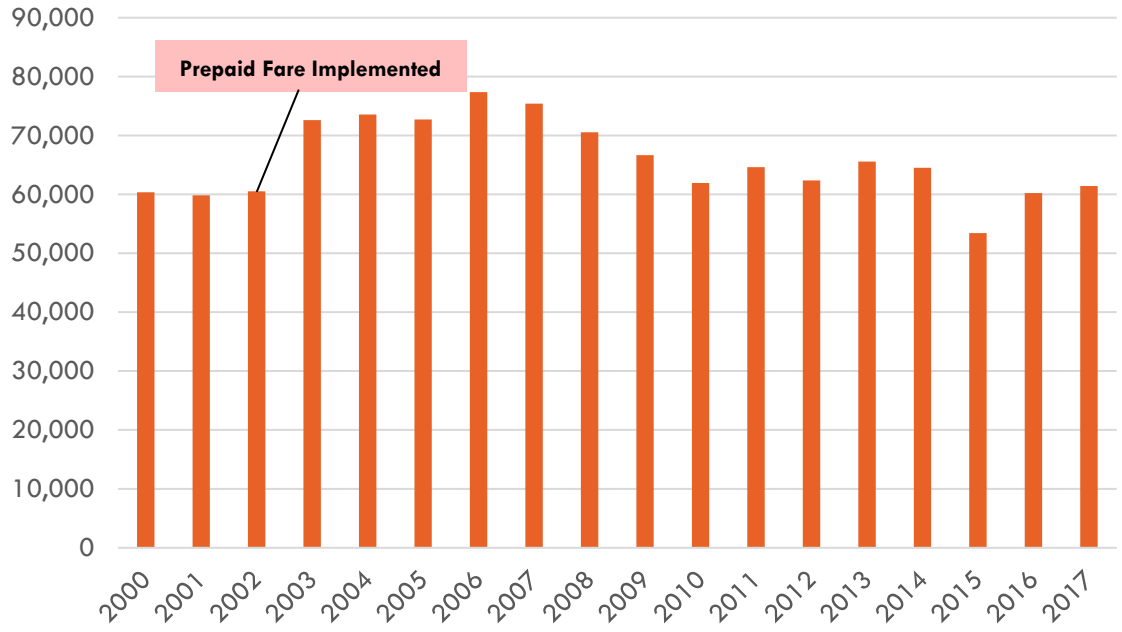
Ridership increases for demand response service should also be anticipated. Agencies studying going fare-free are often concerned that paratransit costs could increase due to increased demand for free service. By law, 100% of demand for paratransit service must be met, regardless of cost. In a fare-free system, this can result in high costs to the transit provider. Fare-free paratransit is attractive and can become costly to provide. Each agency has varying strategies for managing paratransit growth. These strategies are outlined below.

- **Chapel Hill Transit.** Paratransit ridership saw a 20% increase within one year, and paratransit revenue hours also saw an initial increase but have since flattened. Until 2010, the agency allowed rides outside of the ¾ mile zone required by the ADA. The agency had to cut back to a ¾ mile boundary for paratransit rides to reduce paratransit service hours. As a result, ridership decreased, and people were not able to move as freely. More recently, CHT relaxed some certification policies at direction of leadership, which came at a moderate cost. As a result of increased ridership and revenue hours, the agency has hired additional operating, administrative, and maintenance employees for paratransit service (Figure 3-13).
- **Corvallis Transit System.** Paratransit has seen a 30% increase in ridership since implementing prepaid fares. As of April 2019, the agency had not implemented any specific strategies to deal with this increase.[1]
- **Mountain Line.** Demand response trips and revenue hours have increased steadily since the agency went fare free and continued to increase into 2019 (Figure 3-14 and Figure 3-15). To prepare for the increase in ridership, the agency tightened up eligibility

[1] Comparable data from the National Transit Database was not available for CTS demand response service and is not included in this section.

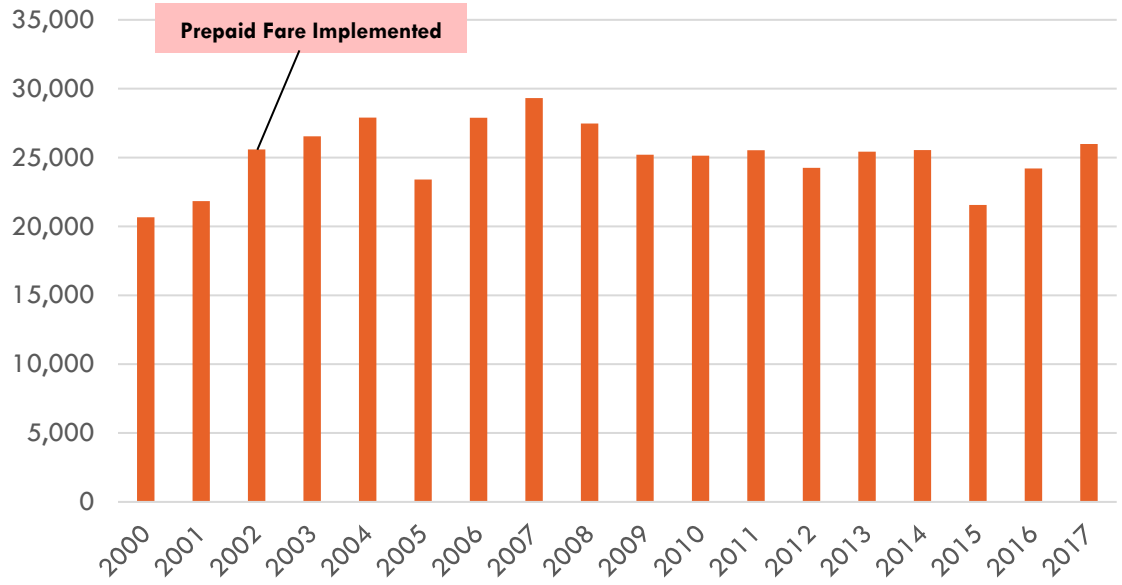
before implementing fare free service. They are currently planning to make a marketing push to promote fixed-route service for those who can use it in an effort to reduce paratransit ridership. To handle the additional service and ridership, the agency increased their demand response staffing, primarily in operations.

Figure 3-11 Chapel Hill Transit Demand Response Passenger Trips



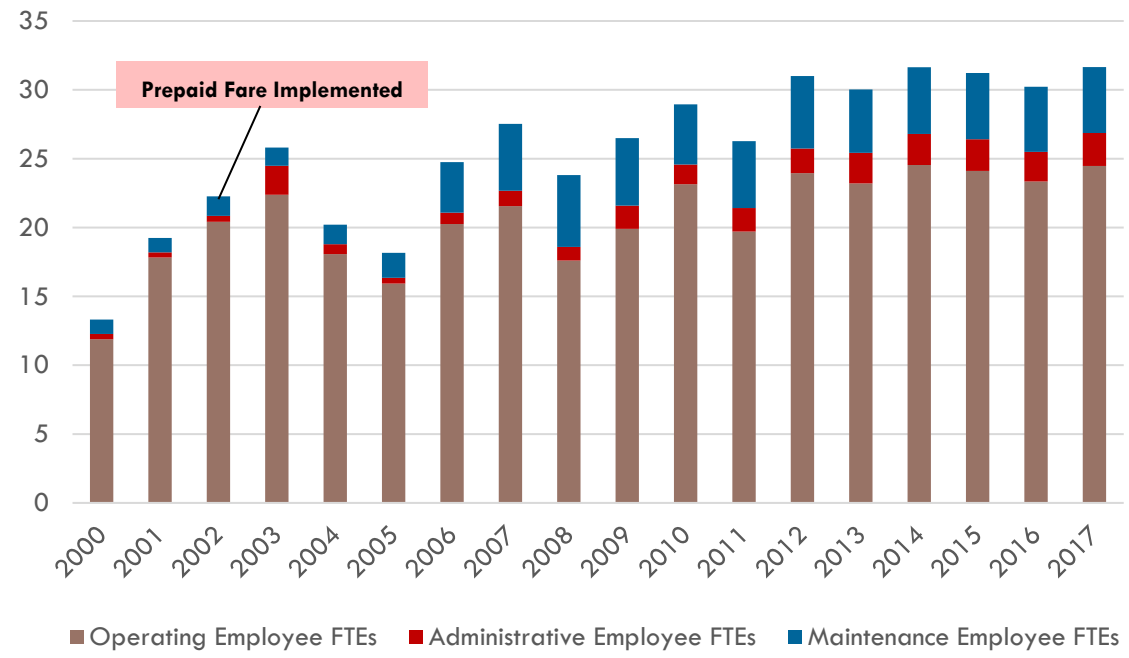
Source: National Transit Database

Figure 3-12 Chapel Hill Transit Demand Response Revenue Hours



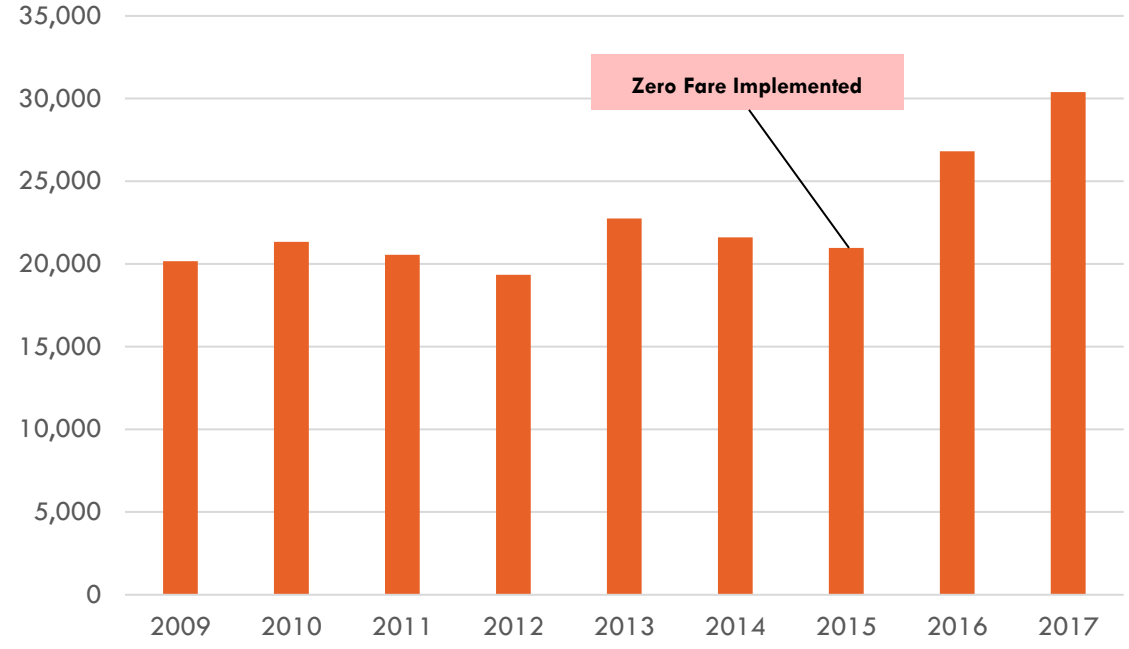
Source: National Transit Database

Figure 3-13 Chapel Hill Transit Demand Response Employee FTEs



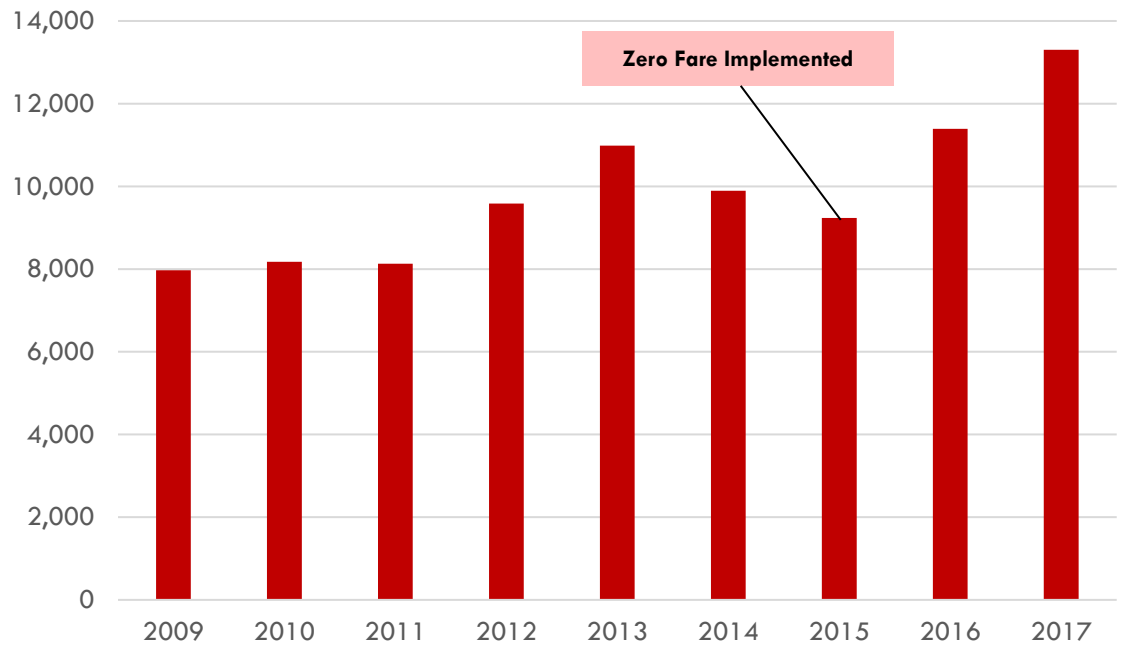
Source: National Transit Database

Figure 3-14 Mountain Line Demand Response Passenger Trips



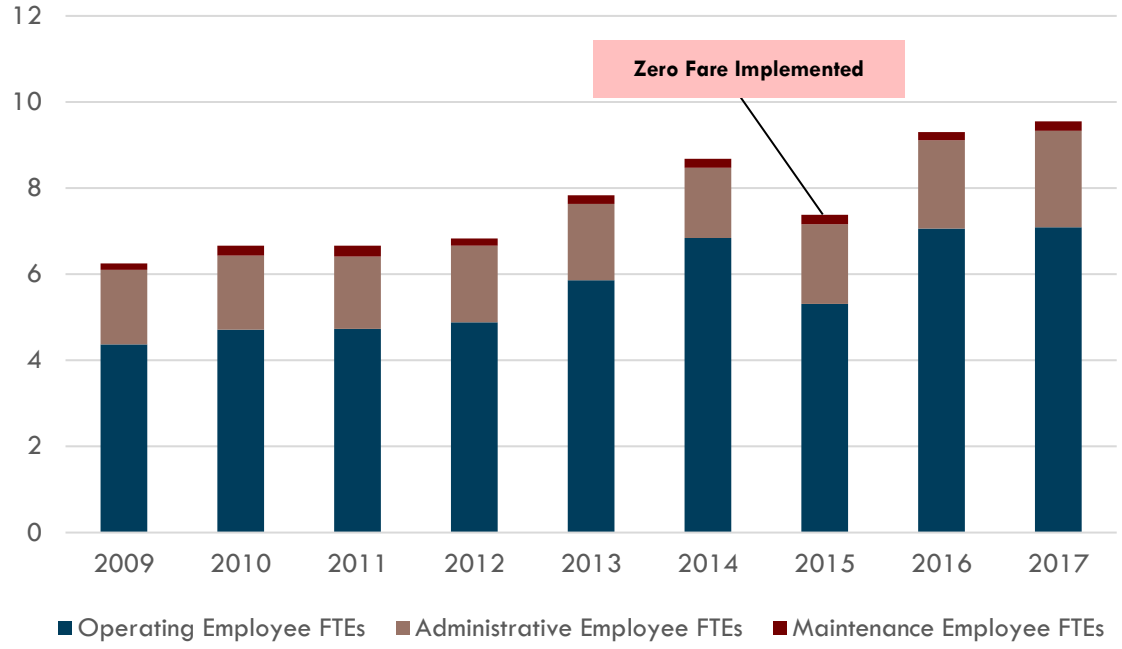
Source: National Transit Database

Figure 3-15 Mountain Line Demand Response Revenue Hours



Source: National Transit Database

Figure 3-16 Mountain Line Demand Response Employee FTEs



Source: National Transit Database

Outcomes

Overall, the shift to fare free has been a positive experience for all three peer agencies.

- **Chapel Hill Transit's** funding partners and the public are not interested in returning to charging fares.
- **Corvallis Transit System** has had overwhelming support from social service agencies, students, and environmentalists. They cannot imagine going back to a paid fare system. The agency was able to anticipate most of what was going to happen, and most of what went wrong was not substantial.
- Going fare free has transformed **Mountain Line** into the best transit system in Montana. Zero fare has improved community connectivity for those who use Mountain Line service. Additionally, the ridership increases bumped the agency into a higher tier of systems for grants. Grants received include "no-low" emissions and bus/bus facilities grants. In the last few years, they have brought in roughly $3 million in grant funding.

Words of Wisdom

Some words of wisdom from the three agencies for other agencies looking to implement a fare free system include:

- **A fare free system benefits the whole community.** Mountain Line has seen that free fares lead to greater community mobility and improve affordability for households that may now need one less car. Everyone participates in the economy regardless of how much money they have, and zero fare service frees up people's money for other things.
- **Community input is extraordinarily important.** CTS warns of backlash from a small group of people resulting in having to undo the program. There must be overwhelming support for this type of service for it to go over well.
- **Properly communicate changes and how they are happening.** Mountain Line recommends implementing zero fare separately from other improvements so it's clear who's paying for it and how it's happening. CHT recommends presenting the change as "prepaid" rather than "fare free" to remind people that they do pay for the service, just not at the farebox.

4 FARE FREE ANALYSIS

Charging a fare—or not charging a fare—encompasses a wide range of costs and benefits. Some of the key benefits associated with collecting a fare include generating revenue, reducing reliance on federal and state funding, and supporting the perception that the public helps pay for public transportation services.

At the same time, there are costs associated with charging a fare. Operating fare free is less complex because it simplifies accounting systems and reduces the need for secure storage of cash; additionally, management and distribution of fare media are not required. Additional benefits include the potential for increased ridership and enhanced operating efficiency.

KEY FINDINGS

- **If ICT intends to double ridership in 10 years, adopting a fare free policy is recommended** as the most cost-effective way to achieve that goal.
- Eliminating on-board fares for ICT could:
  - **Increase ridership** between 40% (700,000 passengers) and 60% (1,000,000 passengers).
  - Require **adding between five and nine additional trips** per day.
  - **Increase annual operating costs** in the range of $1.3 million to $1.4 million.
  - Depending on actual ridership increases, would **require adding two to four vehicles** to the fleet at an estimated capital cost of $1 million to $2 million.
  - Require an **additional one to three full-time employees** (FTEs).
- Eliminating on-board fares for ICT could also impact affiliated service on Johnson County SEATS Paratransit (SEATS) service:
  - **Increase ridership** on SEATS by 20% (19,000 passengers) to 40% (39,000 passengers).
  - **Require adding two and six additional vehicles** to the fleet at an estimated capital cost of $300,000 to $900,000.
  - **Increase annual operating costs** by between $745,000 and $872,000.
  - Require an **additional one to two FTEs**.

EXISTING FARE COSTS AND REVENUE

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

ICT earned approximately $1.3 million in total fare revenue for Fiscal Year (FY) 2019, as shown in Figure 4-1. The estimated annual cost of collecting fares for ICT, as shown in Figure 4-2, is approximately $85,000 per year.

Figure 4-1 Iowa City Transit Fare Revenue by Source (FY2018-FY2019)

	FY2018	FY2019
Bus Fares (Cash)	$268,254	$391,577
Bus Passes	$920,466	$916,655
Bus Stored Rides	$35,063	$31,311
Misc. Bus Rides	$1,905	$797
Total	**$1,225,688**	**$1,340,339**

Source: Iowa City Transit

Figure 4-2 Iowa City Transit Estimated Annual Fare Collection Costs

Estimated Annual Fare Collection Costs	
Supervisory Staff Time (Fare Counting)	$16,596
Supervisory Staff Time (Farebox Maintenance)	$17,406
Forgone Revenue	$15,120
Fare Media Production Costs plus Parts and Maintenance	$22,570
Armored Car Service	$3,500
Customer Service Rep Staff Time	$2,659
Night Maintenance Time	$7,064
Total	**$84,915**

Source: Iowa City Transit

Farebox recovery is the ratio fare revenue compared to total operating expenses. This metric is widely used in the transit industry to identify the percentage of operating costs that are paid for directly by passenger fares. ICT fare revenues account for 22% of annual operating expenses, as shown in Figure 4-3. represents a significant revenue loss that would need to be replaced by alternative funding mechanisms.

Figure 4-3 Iowa City Transit Farebox Recovery (FY2016-FY2017)

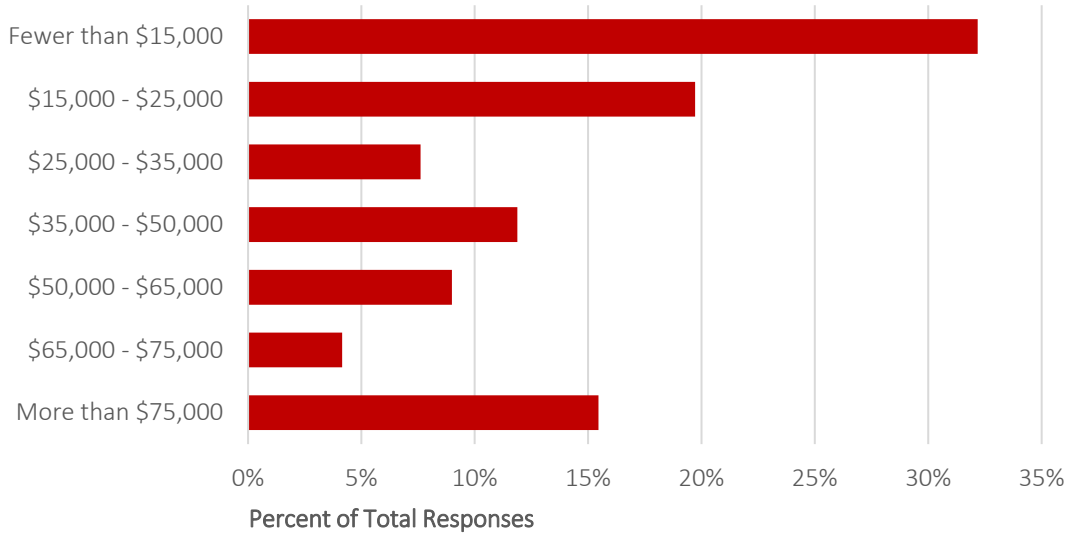
	FY2016	FY2017
Passenger Fare Revenue	$1,467,138	$1,426,395
Total Operating Expenses	$6,687,991	$6,601,336
Farebox Recovery Ratio	**22%**	**22%**

Source: NTD 2017

EQUITY CONSIDERATIONS

Transitioning to fare free service has the potential to eliminate barriers for low-income passengers and improve equity in the service area. Understanding the income levels and combined housing and transportation costs of the region is a key factor for determining how fare free service will affect the community. ICT riders are disproportionately lower-income earners, as shown in Figure 4-4. Over half of transit riders have an annual household income below $25,000, and more than 30% of riders have an annual household income below $15,000.

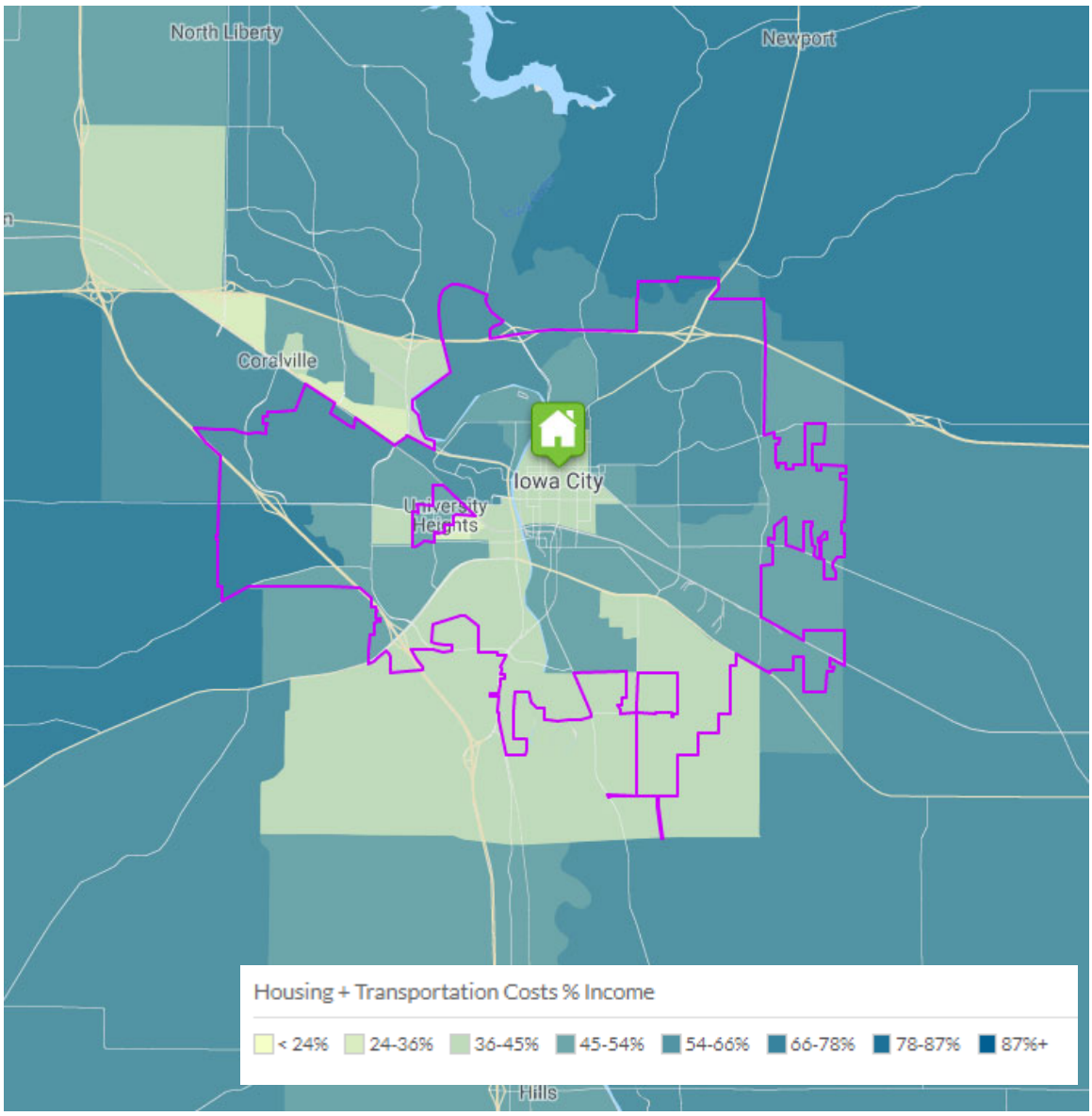
Figure 4-4 Iowa City Transit Ridership by Income Level



Source: 2019 Iowa City Transit On-Board Survey

Additionally, many Iowa City residents are considered housing and transportation burdened. Over half of Iowa City households spend more than 45% of income on housing and transportation costs, as shown in Figure 4-5. The average annual transportation cost for Iowa City residents is $11,549, and approximately 4% of workers in Iowa City take transit to work. Eliminating fares on ICT would reduce this transportation burden for some of the lowest-income households in the service area.

Figure 4-5 Iowa City Housing and Transportation Costs as a Percent of Income



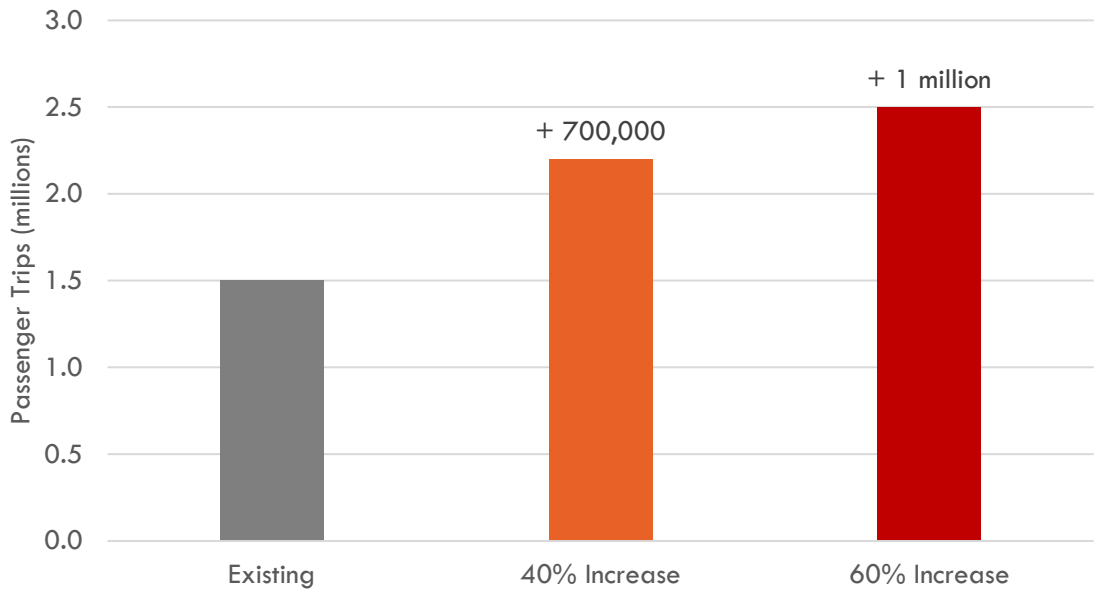
Source: Housing and Transportation Index (H+T Index), Center for Neighborhood Technology (CNT)

FIXED-ROUTE RIDERSHIP AND COST IMPLICATIONS

Ridership

Increasing ridership is often a high priority for transit agencies, and providing fare free 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 the experience reported from peer agencies, transitioning to fare free service can increase transit ridership between 40% and 60%. For ICT, this represents a range of increased ridership between 700,000 and 1 million additional passengers per year, as shown in Figure 4-6. As transit ridership increases following a transition to fare free service, there are several implications including the potential for improved travel times, increased operating costs, and increased capital costs.

Figure 4-6 Iowa City Transit Projected Fixed-Route Ridership Increase

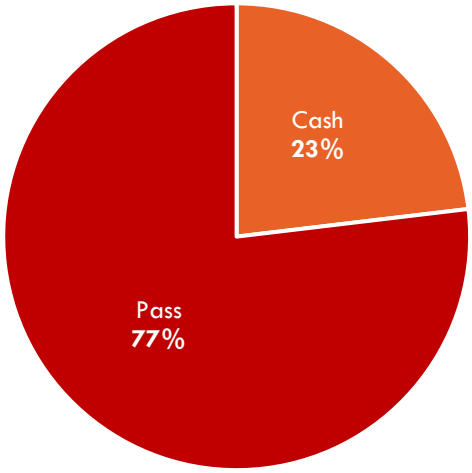


Source: NTD 2017

Travel Time Savings

Fare free service may reduce dwell time spent at bus stops waiting for passengers to board and pay their fare. Research has shown that it takes passengers on average about 3.9 seconds to pay their fare with cash, 3.7 seconds to pay their fare with a swipe card pass, and 2.0 seconds to board without paying a fare.[1] Ridership by fare media, as shown in Figure 4-7, indicates that the majority of ICT passengers pay their fare with pass products.

Figure 4-7 Iowa City Transit Ridership by Fare Media



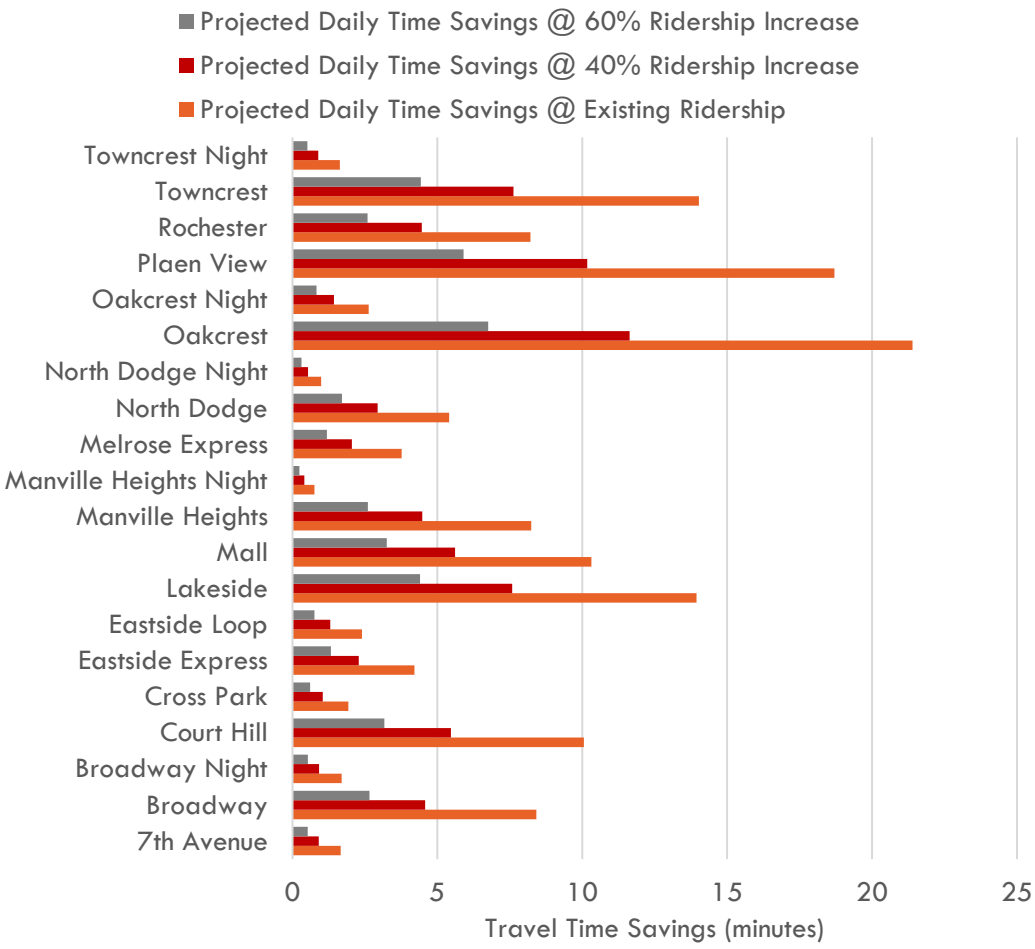
Source: 2019 Iowa City Transit On-Board Survey

Based on recent experience from Intercity Transit (Olympia, WA), significant travel time savings can be anticipated after implementation of zero-fare service, including relief for routes with previous 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 4-8. Travel time savings at existing ridership levels amount to more than 2.3 hours per day. Oakcrest, the route with the most significant travel time savings, is expected to save over 20 minutes of travel time per day. Initially, ICT should be prepared to adjust scheduled runtimes after implementing fare free service to account for these travel time savings.

However, initial travel time savings are 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 relatively modest—the route with the highest projected travel time savings is estimated to save approximately 12 minutes of travel time per day with a 40% increase in ridership and approximately six minutes of travel time per day with a 60% increase in ridership. Systemwide, transitioning to fare free would result in between 0.7 and 1.3 hours of travel time savings per day.

[1] Transit Cooperative Research Program, *Report 100: Transit Capacity and Quality of Service Manual – 2nd Edition*, 2017

Figure 4-8 Iowa City Transit Projected Daily Time Savings



Source: Iowa City Transit

Operating Cost Implications

As ridership increases, vehicles on specific trips or routes may exceed capacity, requiring the agency to provide additional trips. The existing maximum on-board passenger loads for every trip of each route were used to project the theoretical maximum loads based on a 40% and 60% increase in ridership. It is assumed that projected maximum on-board loads exceeding 50 passengers would require an additional trip. The results of this analysis, shown in Figure 4-9, suggest that ICT would need to operate between five and nine additional trips per day depending on the anticipated ridership increase. Specific impacts include:

- One to two additional trips on Eastside Loop
- Three additional trips on Oakcrest
- Up to three additional trips on Plaen View
- One additional trip on Towncrest

Figure 4-9 Iowa City Transit Additional Trips Required

Route	Direction	Full Trip Time*	40% Ridership Increase	60% Ridership Increase
Eastside Loop	IB	7:35 AM	Add one AM trip	Add on AM trip
		8:30 AM		
	OB	3:05 PM	--	Add one PM trip
Oakcrest	IB	7:44 AM	Add one AM roundtrip	Add on AM roundtrip
		8:44 AM		
		9:14 AM	Add second AM roundtrip	Add second AM roundtrip
	OB	5:00 AM	Add on PM roundtrip	Add one PM roundtrip
Plaen View	IB	6:45 AM	--	Add one AM roundtrip
		7:45 AM	--	
		5:15 PM	--	Add one PM roundtrip
Towncrest	IB	7:15 AM	--	Add one AM roundtrip
	OB	4:30 PM	Add one PM roundtrip	Add one PM roundtrip
		5:00 PM		

*Trips with >50 passenger max load with projected ridership increase

Operating costs associated with the additional trips necessary to accommodate increased ridership are shown in Figure 4-10. The low estimate results in an increased annual operating cost of $62,000, and the high estimate results in an increased annual operating cost of $147,000. Combining these increased operating cost estimates with the foregone annual farebox revenue and the estimated annual fare collection costs results in a total annual operating cost increase of between $1.3 million and $1.4 million.

Figure 4-10 Iowa City Transit Projected Operating Cost Increase

Operating Costs	40% Ridership Increase	60% Ridership Increase
Additional Annual Revenue Hours Needed	681	1,619
Annual Operating Cost Increase	$62,000	$147,000
Forgone Farebox Revenue*	$1,340,000	$1,340,000
Existing Annual Fare Collection Costs	*($85,000)*	*($85,000)*
Total Annual Operating Cost	**$1,317,000**	**$1,402,000**

*Iowa City Transit provided farebox revenue for 2019

Capital Cost Implications

Adding peak trips to accommodate increased ridership results in a capital cost component for ICT, as shown in Figure 4-11. The low estimate for ridership increase would require the agency to operate two additional peak vehicles, and the high estimate would require four additional peak vehicles. This results in additional capital expenditures between $1,000,000 and $2,000,000. While these capital expenditures appear as one-time line items, they would need to be replaced on an ongoing basis along the same timelines as the existing vehicle fleet.

Figure 4-11 Iowa City Transit Additional Peak Vehicles Required

Capital Costs	40% Ridership Increase	60% Ridership Increase
Additional Peak Vehicles Needed	2	4
Total Cost*	**$1,000,000**	**$2,000,000**

*Assumes $500,000 per vehicle

Staffing Levels

As revenue hours increase to accommodate higher demand for transit service, it may be required to hire additional FTEs to operate vehicles, provide maintenance vehicles, or perform administrative functions for the higher level of service and additional riders. Projecting the hiring needs for an agency is less straightforward than projecting the required revenue hour increases. The observed trends for increasing revenue hours and FTEs for Chapel Hill Transit and Mountain Line are discussed in greater detail in Chapter 3.

A summary of observed and estimated trends for fare free impacts to FTEs for fixed-route service is shown in Figure 4-12. For every additional 1,000 revenue hours, Chapel Hill Transit and Mountain Line hired between one and three additional FTEs. Assuming a similar ratio of new FTE's to increased revenue hours, ICT would need to hire an additional 1 to 5 FTEs, a 2% to 9% increase in their workforce.

Figure 4-12 Peer Agency Fare Free Impacts Summary

Agency	Revenue Hours Change (% Change)	FTE Change (% Change)	New FTEs per 1,000 Additional Revenue Hours
Chapel Hill Transit	61,762 (66%)	62 (57%)	1.00
Mountain Line	5,096 (12%)	14 (39%)	2.55
Iowa City Transit (Estimate)	**681 (1%) – 1,619 (3%)**	**1 (2%) – 5 (9%)**	**1.00 – 3.00**

PARATRANSIT RIDERSHIP AND COST IMPLICATIONS

Johnson County SEATS is the paratransit provider for both the ICT and Coralville Transit service areas. Transitioning to fare free fixed-route service means that complementary paratransit service must also be provided fare free. If ICT transitions to fare free service and Coralville Transit continues to charge an on-board fare, only SEATS trips within the ICT service area would be fare free.

Similar to fixed-route service, reducing or eliminating paratransit fares is expected to increase demand for the service. Peer agencies experienced an approximately 30% increase in revenue hours and passenger trips during the first three years of fare free service. A similar increase in demand for paratransit services in the ICT service area alone would result in approximately 31,000 new passenger trips, 11,000 additional revenue hours, and $595,000 in additional operating costs.

An estimated ridership increase between 20% and 40% would result in a range of cost implications. Annual revenue hours would be expected to increase by between 9,500 and 11,800 hours, resulting in an increased annual operating cost between $531,000 and $658,000. Accounting for forgone fare revenue, transitioning to fare free service would increase total annual operating costs for SEATS service by between $745,000 and $872,000, shown in Figure 4-13.

Figure 4-13 Paratransit Operating Cost Implications

	20% Ridership Increase	40% Ridership Increase
Additional Ridership Increase	19,000	39,000
Additional Annual Revenue Hours Needed	9,500	11,800
Annual Operating Cost Increase	$531,000	$658,000
Forgone Farebox Revenue	$214,000	$214,000
Total Annual Operating Cost	**$745,000**	**$872,000**

The increase in demand for paratransit service would require the agency to purchase between two and six additional vehicles at a cost of $300,000 to $900,000, shown in Figure 4-14 and hire one to two additional estimated FTEs.

Figure 4-14 Paratransit Capital Cost Implications

	20% Ridership Increase	40% Ridership Increase
Additional Vehicles Needed	2	6
Total Cost ($150,000 each)	**$300,000**	**$900,000**

5 FARE SCENARIOS

The purpose of this section is to revisit the key findings from existing conditions and national best practices and introduce a range of fare concepts for further analysis and review. These scenarios are preliminary; options in some scenarios carried through to be part of the final recommendations while others did not.

Fare scenarios combine select concepts that can be compared against one another. This chapter describes the ridership and revenue impacts of six specific scenarios. Chapter 6 provides additional detail about fare structure and policy recommendations for ICT and Coralville Transit.

APPROACH AND ASSUMPTIONS

The fare model developed for this project is based on existing ridership and revenue data (FY 2018) and assumptions on average fare per passenger for each fare product. This information is then used as a baseline to understand order of magnitude changes to fare revenues and ridership as a result of pricing or structural changes.

Consumption of transit, like other goods and services, reacts to cost. Significant research over time has examined the sensitivity of transit ridership to fare increases. In transit, the standard measurement of sensitivity to fare changes means that for every 10% increase in fares, ridership will decrease by 3% (and vice-versa).

As such, elasticity factors are common in fare modeling, as they define the price sensitivity of riders to fare changes. An elastic factor suggests a larger change in ridership relative to a fare change. An inelastic factor suggests a relatively small change in ridership relative to a fare change. The model accounts for three elasticity factors[1]:

- A relatively inelastic factor (-0.33), which is consistent with industry standards for regular fares
- A "reduced" elasticity factor (-0.21) to account for observations associated with student, elderly, and disabled patrons
- A "fare free" elasticity factor (-0.36) to account for observations associated with free fare categories, including youth, elderly, and disabled riders

Using these elasticity factors, ridership changes (on a fare product basis) are determined from the proposed fare increase or decrease. A new average fare for each fare product is also calculated from the percentage change in the fare product price. Finally, multiplying the new ridership estimate by the new average fare produces a revenue estimate for that fare product.

It should be cautioned that any estimation model is an approximation based on a set of assumptions and is highly dependent on accurate data inputs to ensure quality outputs. The fare

[1] Source: TCRP Report 95, Chapter 12, *Transit Pricing and Fares.*

model bases ridership and revenue changes strictly on price variation. Qualitative factors such as customer simplicity or other factors are not considered here but are certainly factors in reality that influence ridership and revenue levels. Based on the perceived simplicity gains, it is likely that ridership benefits in each alternative are understated. As a result, the findings from this analysis are simply estimates but offer a valuable means to compare different alternatives against one another.

EXISTING FARE AND PASS STRUCTURE

This section summarizes ICT and Coralville's existing fare and pass structure, as well as the transfer compatibility between agencies for the various payment types. The fare model analysis did not look at making changes to the pass programs with University of Iowa or the Kirkwood Community College.

Figure 5-1 ICT and Coralville Transit Fixed-Route Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	$0.75	$0.75 (between 6:00 p.m. and midnight and all-day Saturday)	Yes
Children under 5	FREE	FREE	Yes
Saturday Family Fare	$1 per family	N/A	No
Disabled/low-income elderly	FREE (off-peak only)+	FREE	Yes+
Senior/Elderly (Age 60+ = ICT, Age 65+ = Coralville)	$0.50 (off-peak only)+	FREE	Yes+
Medicare Card	$0.50 (off-peak only)+	$0.50 (off-peak only)+	Yes
SEATS card holder	FREE (off-peak only)+	FREE	Yes+
Passes			
24-hour pass	$2.00	N/A	No
10-ride pass	$8.50	N/A	No
20-ride pass	N/A	$20.00	No
31-Day adult pass	$32.00	$32.00	Yes
31-Day youth pass	$27.00	N/A	Yes
Youth semester pass	$100	N/A	Yes
Elderly low-income month pass	$27	N/A	Yes

+ Off-peak hours include weekdays between 9:00 a.m. to 3:30 p.m., after 6:30 p.m., and all-day Saturday.

FARE SCENARIOS

Six different initial scenarios for fare structure and pricing changes were developed to evaluate potential impacts to ICT and Coralville Transit ridership and revenue. These fare scenarios are described below.

- Scenario 1: Simplify discount categories
- Scenario 2: Coralville match ICT fare structure
- Scenario 3: ICT match Coralville Structure
- Scenario 4: Optimize fare structure to emphasize simplicity
- Scenario 5: Offer inter-agency transfers for all fare types
- Scenario 6A, 6B, and 6C: Expand low-income fare program at 100%, 150%, and 200% of Federal Poverty Level (FPL)

Initial Fare Scenario Results Summary

The relative ridership and revenue changes for each scenario for ICT are shown in Figure 5-2, Figure 5-3, Figure 5-4. The relative ridership and revenue changes for each scenario for Coralville Transit are shown in Figure 5-5, Figure 5-6, and Figure 5-7. Impacts reported in this chapter are for fixed-route service only.

The fare structure and resulting ridership and revenue impacts for each scenario are described in further detail in the remainder of this chapter.

Figure 5-2 Initial Fare Scenarios Ridership and Revenue Change - ICT

	Change in Ridership	Ridership % Change	Change in Revenue	Revenue % Change
1: Simplify discount categories	15,000	1.0%	-$49,000	-3.9%
2: Coralville match ICT fare structure	-	-	-	-
3: ICT match Coralville Structure	9,000	0.6%	-$31,000	-2.5%
4: Optimize fare structure to emphasize simplicity	16,000	1.1%	-$49,000	-3.9%
5: Offer inter-agency transfers for all fare types	-	-	-$1,000	-0.1%
6A: Expand low-income fare program at 100% of Federal Poverty Level	11,000	0.8%	-$35,000	-2.8%
6B: Expand low-income fare program at 150% of Federal Poverty Level	13,000	0.9%	-$40,000	-3.2%
6C: Expand low-income fare program at 200% of Federal Poverty Level	15,000	1.0%	-$47,000	-3.7%

Figure 5-3 Initial Fare Scenarios Ridership and Revenue Net Change – ICT

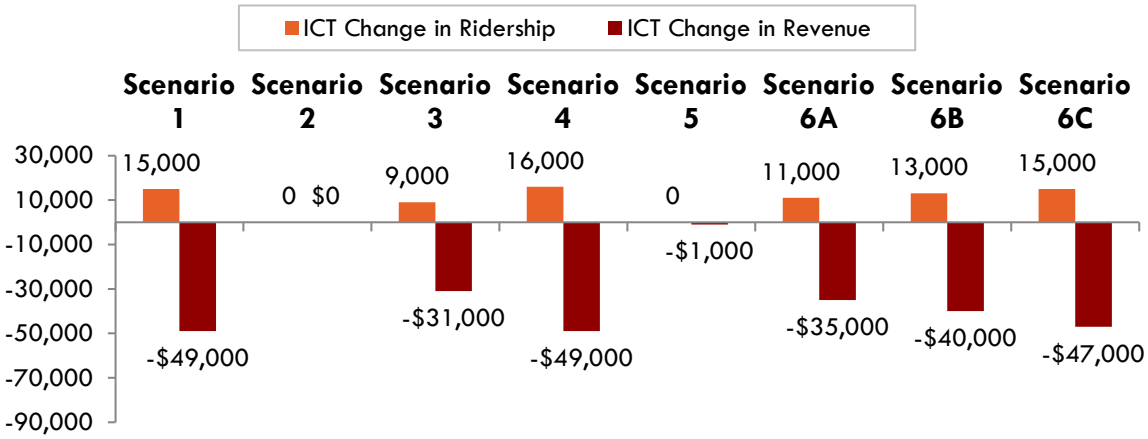


Figure 5-4 Initial Fare Scenarios Ridership and Revenue % Change – ICT

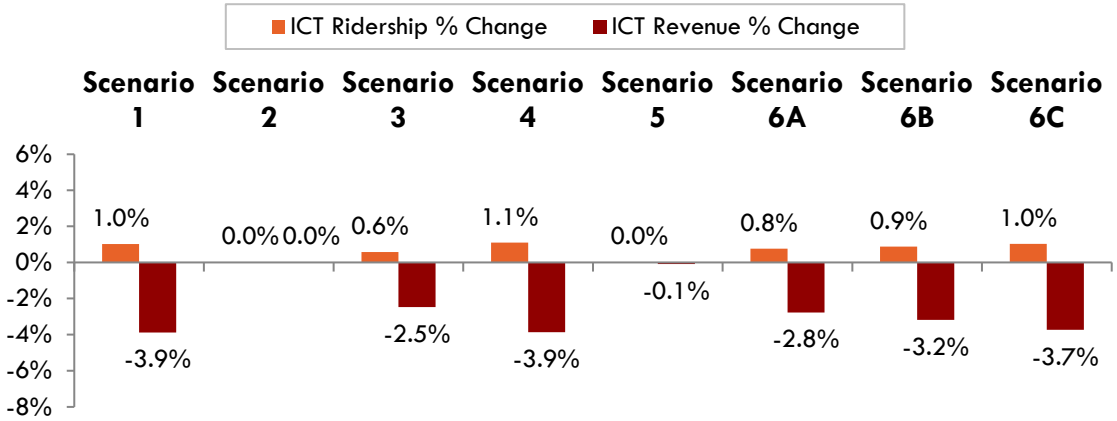


Figure 5-5 Initial Fare Scenarios Ridership and Revenue Change – Coralville Transit

	Change in Ridership	Ridership % Change	Change in Revenue	Revenue % Change
1: Simplify discount categories	-1,000	-0.2%	$2,000	0.5%
2: Coralville match ICT fare structure	-3,000	-0.7%	$11,000	2.7%
3: ICT match Coralville Structure	-	-	-	-
4: Optimize fare structure to emphasize simplicity	200	<0.1%	-$300	-0.1%
5: Offer inter-agency transfers for all fare types	-	-	-$1,000	-0.2%
6A: Expand low-income fare program at 100% of Federal Poverty Level	8,000	1.7%	-$18,000	-4.5%
6B: Expand low-income fare program at 150% of Federal Poverty Level	8,000	1.7%	-$18,000	-4.5%
6C: Expand low-income fare program at 200% of Federal Poverty Level	9,000	1.9%	-$21,000	-5.1%

Figure 5-6 Initial Fare Scenarios Ridership and Revenue % Change – Coralville Transit

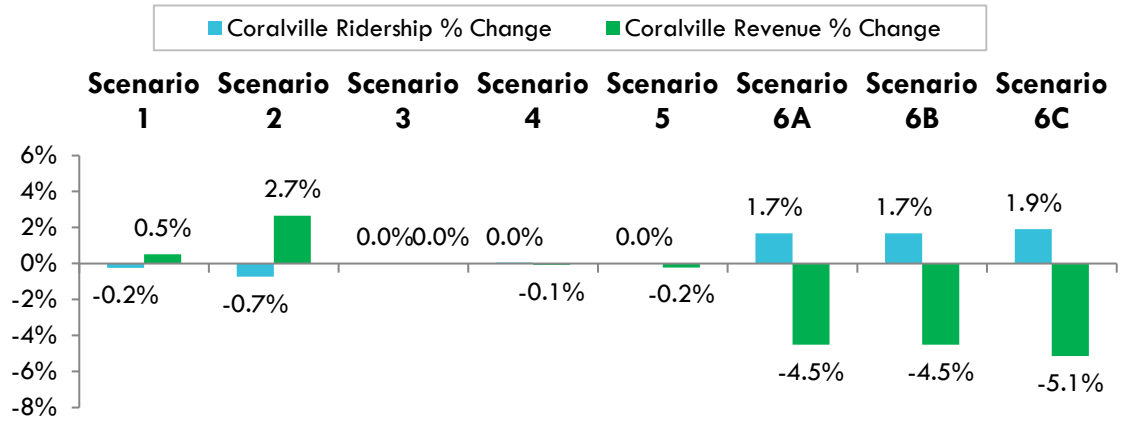
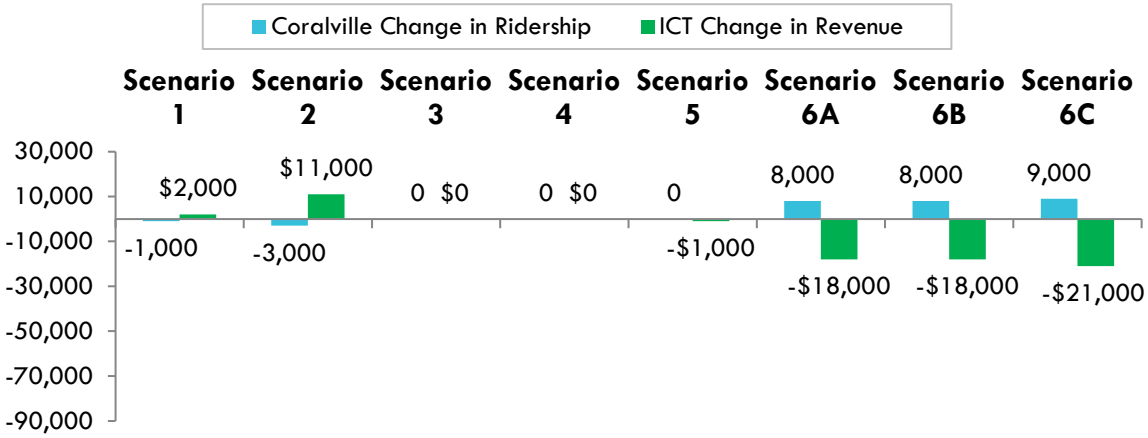


Figure 5-7 Initial Fare Scenarios Ridership and Revenue Net Change – Coralville Transit



Scenario 1: Simplify discount categories

This scenario evaluated the ridership and revenue impacts of simplifying the discount categories within the ICT and Coralville fare structures. This involved making transit fare free for disabled, elderly/senior low-income, Medicare card holders, and SEATS eligible riders at all times of day and providing a 50% for youth and elderly/senior riders at all times of day. Currently, ICT offers various discounts during off-peak hours to eligible riders, but charges those same riders full fare during peak hours. Coralville services are currently fare free for seniors and the disabled all day, but youth riders only have a discounted fare in the evenings and on Saturday.

The revision of the discount categories is estimated to result in:

- ICT: 15,000 (1%) ridership gain and $49,000 (-3.9%) revenue loss
- Coralville Transit: 1,000 (-0.2%) loss in ridership and $2,000 (0.5%) gain in revenue

A comparison of the existing fare structure and proposed fare structure for Scenario 1 is provided in Figure 5-8. Changes from existing are highlighted in **bold** text.

Figure 5-8 Scenario 1 Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	**$0.50**	**$0.50**	Yes
Children under 5	FREE	FREE	Yes
Saturday Family Fare	$1 per family	N/A	No
Disabled/low-income elderly	**FREE**	FREE	**Yes**
Senior/Elderly (Age 60+ = ICT, Age 65+ = Coralville)	**$0.50**	FREE	No
Medicare Card	**FREE**	**FREE**	**Yes**
SEATS card holder	**FREE**	FREE	**Yes**
Passes			
24-hour pass	$2.00	N/A	No
10-ride pass	$8.50	N/A	No
20-ride pass	N/A	$20.00	No
31-Day adult pass	$32.00	$32.00	Yes
31-Day youth pass	$27.00	N/A	Yes
Youth semester pass	$100	N/A	Yes
Elderly low-income month pass	**FREE**	N/A	Yes

Scenario 2: Coralville match ICT fare structure

This scenario evaluated the ridership and revenue impacts of simplifying the regional fare structure by modifying Coralville Transit fares to match ICT more closely. This involved adding off-peak only discounts, a 24-hour pass, a 10-ride pass, a wider youth fare eligibility, new youth monthly and semester passes, and an elderly low-income monthly pass.

The revision of the Coralville Transit fare structure is estimated to result in a 3,000 (-0.7%) ridership loss and $11,000 (2.7%) revenue gain.

A comparison of the existing fare structure and proposed fare structure for Scenario 1 is provided in Figure 5-9. Changes from existing are highlighted in **bold** text.

Figure 5-9 Scenario 2 Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	$0.75	**$0.75**	Yes
Children under 5	FREE	FREE	Yes
Saturday Family Fare	$1 per family	N/A	No
Disabled/low-income elderly	FREE (off-peak only)+	**FREE (off-peak only)+**	**Yes**
Elderly (Age 60+ = ICT, Age 65+ = Coralville)	$0.50 (off-peak only)+	**$0.50 (off-peak only)+**	**Yes**
Medicare Card	$0.50 (off-peak only)+	$0.50 (off-peak only)+	Yes
SEATS card holder	FREE (off-peak only)+	**FREE (off-peak only)+**	**Yes**
Passes			
24-hour pass	$2.00	**$2.00**	**Yes**
10-ride pass	$8.50	**$8.50**	**Yes**
20-ride pass	N/A	**N/A**	**N/A**
31-Day adult pass	$32.00	$32.00	Yes
31-Day youth pass	$27.00	**$27.00**	Yes
Youth semester pass	$100	**$100**	Yes
Elderly low-income month pass	$27	N/A	Yes

+ Off-peak hours include weekdays between 9:00 a.m. to 3:30 p.m., after 6:30 p.m., and all-day Saturday.

Scenario 3: ICT match Coralville Structure

This scenario evaluated the ridership and revenue impacts of simplifying the regional fare structure by modifying ICT fares to match Coralville more closely. This involved adding a fare free Senior/Elderly/Disabled Pass and a 20-ride pass, while eliminating the Saturday Family Fare, 24-hour pass, 10-ride pass, 31-day youth pass, and youth semester pass.

The revision of the ICT fare structure is estimated to result in a 9,000 (0.6%) ridership gain and $31,000 (-2.5%) revenue loss.

A comparison of the existing fare structure and proposed fare structure for Scenario 3 are provided in Figure 5-10. Changes from existing are highlighted in **bold** text.

Figure 5-10 Scenario 3 Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	$0.75 (between 6:00 p.m. and midnight and all-day Saturday)	$0.75 (between 6:00 p.m. and midnight and all-day Saturday)	Yes
Children under 5	FREE	FREE	Yes
Saturday Family Fare	**N/A**	N/A	No
Disabled/low-income elderly	**FREE**	FREE	**Yes**
Elderly (Age 60+ = ICT, Age 65+ = Coralville)	**FREE**	FREE	**Yes**
Medicare Card	$0.50 (off-peak only)+	$0.50 (off-peak only)+	Yes
SEATS card holder	**FREE**	FREE	**Yes**
Passes			
24-hour pass	$2.00	N/A	No
10-ride pass	**N/A**	N/A	No
20-ride pass	**$20.00**	$20.00	No
31-Day adult pass	$32.00	$32.00	Yes
31-Day youth pass	**N/A**	N/A	Yes
Youth semester pass	**N/A**	N/A	Yes
Elderly low-income month pass	**FREE**	N/A	Yes

Scenario 4: Optimize fare structure to emphasize simplicity

This scenario evaluated the ridership and revenue impacts of simplifying the regional fare structure for both transit agencies by emphasizing simplicity for customer service and operations. This involved creating a consistent discounted youth cash fare and pass, a transferable discounted 10-ride pass, a fare free Senior/Elderly/Disabled pass, as well as eliminating the youth semester pass.

The revision of the fare structure simplification is estimated to result in:

- ICT: 16,000 (1.1%) ridership gain and $49,000 (-3.9%) revenue loss
- Coralville Transit: 200 (<0.1%) ridership gain and $300 (-0.1%) revenue loss

A comparison of the existing fare structure and proposed fare structure for Scenario 4 are provided in Figure 5-11. Changes from existing are highlighted in **bold** text.

Figure 5-11 Scenario 4 Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	**$0.50**	**$0.50**	Yes
Children under 5	FREE	FREE	Yes
Saturday Family Fare	**N/A**	N/A	No
Disabled/low-income elderly	**FREE**	FREE	**Yes**
Senior/Elderly (Age 60+ = ICT, Age 65+ = Coralville)	**FREE**	FREE	**Yes**
Medicare Card	**FREE**	**FREE**	Yes
SEATS card holder	**FREE**	FREE	**Yes**
Passes			
24-hour pass	$2.00	N/A	No
10-ride pass	$8.50	**$8.50**	**Yes**
20-ride pass	N/A	**N/A**	**N/A**
31-Day adult pass	$32.00	$32.00	Yes
31-Day youth pass	$27.00	**$27.00**	Yes
Youth semester pass	**N/A**	N/A	Yes
Elderly low-income month pass	**FREE**	N/A	Yes

Scenario 5: Offer inter-agency transfers for all fare types

This scenario evaluated the revenue impacts of allowing inter-agency transfers for all fare types between ICT and Coralville Transit. According to the 2019 On-Board Survey, of those who transfer between agencies, the majority pay with an adult cash fare, 31-day pass, or a University of Iowa pass. All three pass types currently allow for a free transfer between agencies. Because only a small proportion of riders pay for a transfer between agencies, there would only be a small revenue loss for both agencies. This scenario does not assume a ridership increase due to the simplified transfers, but the agencies should expect to see a minor ridership increase.

The revision of the transfer policy is estimated to result in:

- ICT: $1,000 (-0.1%) revenue loss
- Coralville Transit: $1,000 (-0.2%) revenue loss

A comparison of the existing fare structure and proposed fare structure for Scenario 5 are provided in Figure 5-12. Changes from existing are highlighted in **bold** text.

Figure 5-12 ICT and Coralville Transit Fixed-Route Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	$0.75	$0.75 (between 6:00 p.m. and midnight and all-day Saturday)	No
Children under 5	FREE	FREE	Yes
Saturday Family Fare	$1 per family	N/A	**Yes**
Disabled/low-income elderly	FREE (off-peak only)+	FREE	**Yes**
Senior/Elderly (Age 60+ = ICT, Age 65+ = Coralville)	$0.50 (off-peak only)+	FREE	**Yes**
Medicare Card	$0.50 (off-peak only)+	$0.50 (off-peak only)+	Yes
SEATS card holder	FREE (off-peak only)+	FREE	**Yes**
Passes			
24-hour pass	$2.00	N/A	**Yes**
10-ride pass	$8.50	N/A	**Yes**
20-ride pass	N/A	$20.00	**Yes**
31-Day adult pass	$32.00	$32.00	Yes
31-Day youth pass	$27.00	N/A	Yes
Youth semester pass	$100	N/A	Yes
Elderly low-income month pass	$27	N/A	Yes

+ Off-peak hours include weekdays between 9:00 a.m. to 3:30 p.m., after 6:30 p.m., and all-day Saturday.

Scenario 6: Expand low-income fare program at 100%, 150%, and 200% of Federal Poverty Level

Finally, this scenario evaluated the ridership and revenue impacts of expanding the low-income fare program in the region. Offering a low-income fare category is another method for making transit a more affordable transportation option. This scenario analyzes the impacts of offering a discount to eligible adults making up to 200%, 150%, and 100% FPL. This scenario assumes that 35% of eligible riders would actually use the low-income fare program—the observed usage rate for the ORCA Lift low-income fare program in Seattle, WA.

Offering a low-income discount program with a threshold at 200% FPL is the current industry standard (although 150% FPL is also being used) and has the largest impacts to ridership and revenue. These thresholds coincide with eligibility for a number of other public benefit programs and may reduce administrative costs through streamlined income verification.

The expansion of the low-income fare program is estimated to result in:

- ICT:
  - 100% - 11,000 (0.8%) ridership gain and $35,000 (-2.8%) revenue loss
  - 150% - 13,000 (0.9%) ridership gain and $40,000 (-3.2%) revenue loss
  - 200% - 15,000 (1%) ridership gain and $37,000 (-3.7%) revenue loss
- Coralville Transit:
  - 100% - 8,000 (1.7%) ridership gain and $18,000 (-4.5%) revenue loss
  - 150% - 8,000 (1.7%) ridership gain and $18,000 (-4.5%) revenue loss
  - 200% - 9,000 (1.9%) ridership gain and $21,000 (-5.1%) revenue loss

A comparison of the existing fare structure and proposed fare structure for Scenario 6 are provided in Figure 5-13. Changes from existing are highlighted in **bold** text.

Figure 5-13 Scenario 6 Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Low-income cash	**$0.50**	**$0.50**	**Yes**
Youth (Age 5-18 = ICT, Age 5-15 = Coralville)	$0.75	$0.75 (between 6:00 p.m. and midnight and all-day Saturday)	Yes
Children under 5	FREE	FREE	Yes
Saturday Family Fare	$1 per family	N/A	No
Disabled/low-income elderly	FREE (off-peak only)+	FREE	No
Senior/Elderly (Age 60+ = ICT, Age 65+ = Coralville)	$0.50 (off-peak only)+	FREE	No
Medicare Card	$0.50 (off-peak only)+	$0.50 (off-peak only)+	Yes
SEATS card holder	FREE (off-peak only)+	FREE	No
Passes			
24-hour pass	$2.00	N/A	No
10-ride pass	$8.50	N/A	No
20-ride pass	N/A	$20.00	No
31-Day adult pass	$32.00	$32.00	Yes
31-Day low-income pass	**$16.00**	**$16.00**	**Yes**
31-Day youth pass	$27.00	N/A	Yes
Youth semester pass	$100	N/A	Yes
Elderly low-income month pass	$27	N/A	Yes

+ Off-peak hours include weekdays between 9:00 a.m. to 3:30 p.m., after 6:30 p.m., and all-day Saturday.

6 RECOMMENDATIONS

This chapter culminates the findings from the existing conditions analysis, peer review and best practices, and fare modeling effort to establish a set of fare policy, pricing, and product recommendations for ICT and Coralville Transit. The recommendations in this section are divided into two categories:

- **Fare Structure Recommendations**: Recommendations to specific fare products offered to the riding public and pricing of those products.
- **Fare Policy Recommendations:** Recommendations related to internally-adopted policies or procedures such as fare collection.

FARE RECOMMENDATIONS SUMMARY

Fare recommendations for ICT and Coralville Transit are comprised of fare structure changes and policy recommendations.

Figure 6-1 provides a summary of recommendations developed as part of the fare analysis.

Figure 6-1 Fare Recommendations Summary

Type	ICT Recommendations	Coralville Recommendations
Fare Structure Recommendations	▪ **Adjust discount eligibility and pricing** – Reduce youth cash fare to $0.50 – Lower 31-day youth pass to $16 – Adopt Senior/Disabled pass that allows seniors, people with disabilities, Medicare card holders, and SEATS card holders to ride for free at all times of day – Raise senior eligibility to 65 years or older – Eliminate peak/off-peak fare distinction ▪ **Consolidate regional transit passes** – Eliminate Saturday Family Fare and Youth Semester Pass	▪ **Adjust discount eligibility and pricing** – Reduce youth cash fare to $0.50 at all times of day – Adopt 31-day youth pass at $16 – Raise youth eligibility limit to 18 years – Allow Medicare card holders to ride for free at all times of day – Eliminate peak/off-peak fare distinction ▪ **Consolidate regional transit passes** – Transition from 20-ride pass to 10-ride pass at $8.50
Policy Recommendations	▪ **Offer inter-agency transfers for all fare types** ▪ **Implement mobile ticketing** ▪ **Consider adopting fare free policy**	

FARE STRUCTURE RECOMMENDATIONS

The recommended fare structure considers experience across the transit industry, fare study goals, as well as fare pricing at peer agencies. The recommended fare structure incorporates the following changes to both agency's existing structure:

ICT

- Adjust discount eligibility and pricing
  - Reduce youth cash fare to $0.50
  - Lower 31-day youth pass to $16
  - Adopt Senior/Disabled pass that allows seniors, people with disabilities, Medicare card holders, and SEATS card holders to ride for free at all times of day
  - Raise senior eligibility to 65 years or older
  - Eliminate peak/off-peak fare distinction
- Consolidate regional transit passes
  - Eliminate Saturday Family Fare and Youth Semester Pass

Coralville Transit

- Adjust discount eligibility and pricing
  - Lower youth cash fare to $0.50 at all times of day
  - Adopt ICT 31-day youth pass at $16
  - Raise youth eligibility limit to 18 years
  - Allow Medicare card holders to ride for free at all times of day
  - Eliminate peak/off-peak fare distinction
- Consolidate regional transit passes
  - Transition from 20-ride pass to 10-ride pass at $8.50

The recommended fare structure is provided in Figure 6-2.

Figure 6-2 Recommended Fare Structure

Fare Type	ICT	Coralville	ICT to Coralville Transfer Compatibility?
Cash Fares			
Adults	$1.00	$1.00	Yes
Youth (Age 5-18)	$0.50	$0.50	Yes
Children under 5	FREE	FREE	Yes
Passes			
24-hour pass	$2.00	$2.00	Yes
10-ride pass	$8.50	$8.50	Yes
31-Day adult pass	$32.00	$32.00	Yes
31-Day youth pass	$16.00	$16.00	Yes
Senior/Disabled pass	FREE	FREE	Yes

Ridership and Revenue Impacts

As discussed in Chapter 5, consumption of transit—like other goods and services—reacts to cost. Significant research over time has examined the sensitivity of transit ridership to fare increases. In transit, the standard measurement of sensitivity to fare changes means that for every 10% increase in fares, ridership will decrease by 3% (and vice-versa). As such, elasticity factors are common in fare modeling and can help determine anticipated ridership and revenue changes from the proposed fare increase or decrease, and the fare modeling effort conducted as part of this study helped identify anticipated impacts of the suggested fare structure.

The ridership and revenue impacts for ICT and Coralville are shown in Figure 6-3 and Figure 6-4. Fare structure recommendations are estimated to result in:

- ICT: 19,000 (1.3%) ridership gain and $55,000 (-4%) revenue loss
- Coralville Transit: 1,000 (-0.2%) ridership loss and $2,000 (1%) revenue gain

Figure 6-3 Total Ridership and Revenue Impacts of Recommended Fare Structure

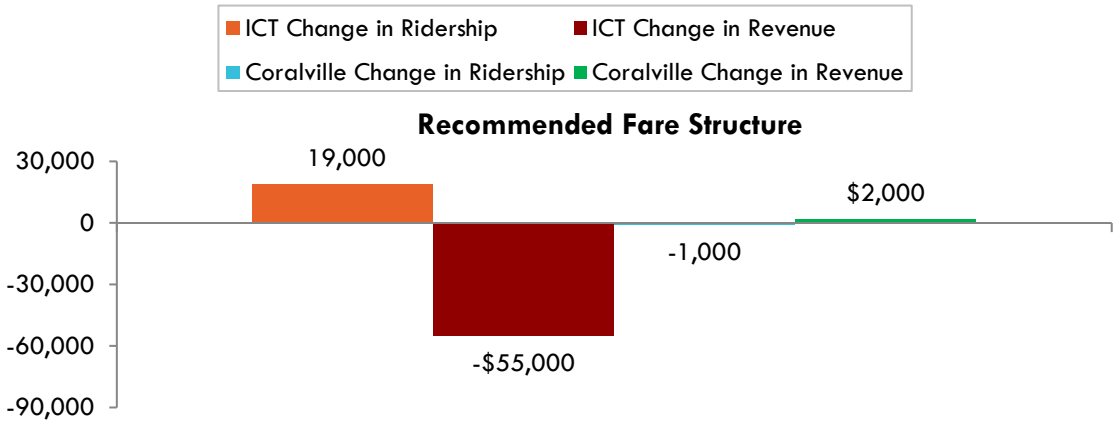
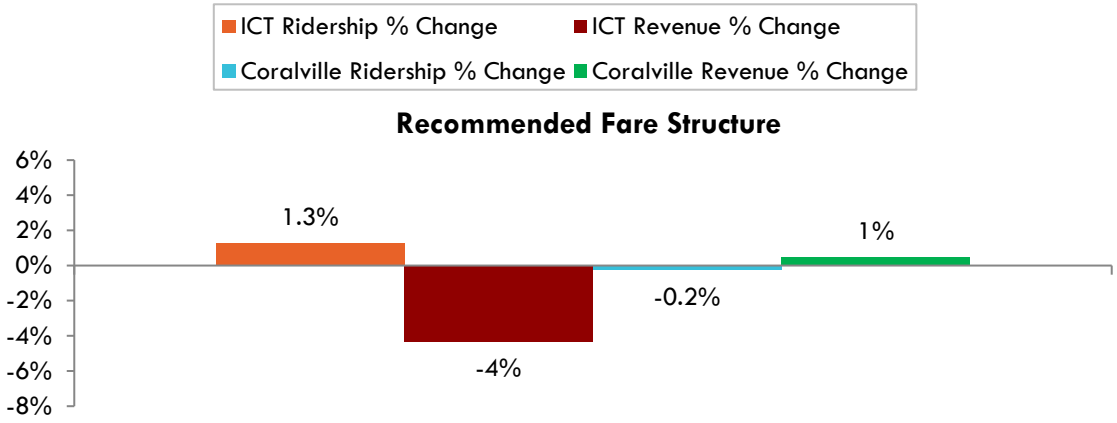


Figure 6-4 Percent Ridership and Revenue Impacts of Recommended Fare Structure



POLICY RECOMMENDATIONS

In conjunction with fare structure recommendations, it is recommended that ICT and Coralville Transit formalize inter-agency transfer policies and pursue implementation of mobile ticketing. Additionally, ICT should consider adopting a fare free policy to help meet local goals for ridership growth.

Offer Inter-Agency Transfers for All Fare Types

To allow for seamless transfers between the two agencies and encourage regional transit ridership, ICT and Coralville should offer free transfers between agencies with proof of cash payment or with a valid transit pass. As discussed in the Scenario 5 section of Chapter 5, only a small proportion of current riders pay for a transfer between agencies, which would result in a minor revenue loss for both agencies.

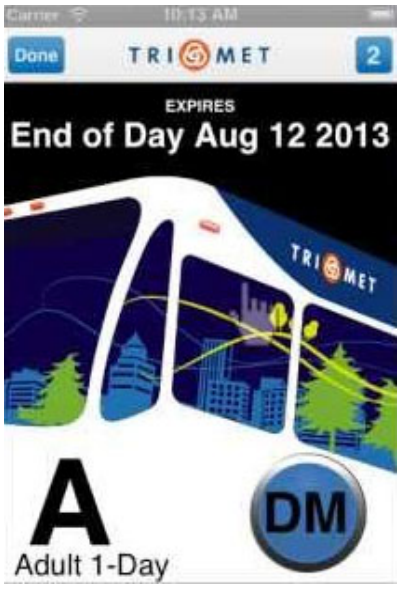
To ensure there is not a disproportionate impact to either agency, both agencies could consider tracking the number of transfers between agencies for each pass type. In the case that there is a disproportionate impact, the agencies may want to discuss an exchange of revenue equal to the estimated revenue impact in the future.

Implement Mobile Ticketing

Mobile ticketing is an emerging technology option that is rapidly being adopted by transit agencies of all sizes. Mobile ticketing can make the experience of boarding and paying for transit seamless and can lower the barrier of entry for new transit users. Start-up mobile ticketing companies such as Token Transit and HopThru offer a product that can be ready to launch within weeks.

The simplest form of mobile ticketing is to allow riders to use their phone as a "flash pass," an animated ticket that is visually validated by the bus operator when they board the bus. This strategy does not require any additional hardware to be installed and can be implemented with few other hurdles. The primary drawback is that this method requires additional attention of the operator to validate fare media.

The example at right is from the TriMet system in Portland, which has launched a mobile payment app using a flash pass. Once a pass has been activated, the smartphone app uses colors, animation, and a date stamp to indicate the pass has been activated.



Source: TriMet

It is recommended that both ICT and Coralville Transit pursue the same vendor and mobile ticketing platform to facilitate regional integration.

Consider Adopting Fare Free Policy

The Iowa City Climate Action and Adaptation Plan calls for the city to reduce emissions by 80% over the next 30 years. By 2050, this includes replacing 55% of vehicle trips with sustainable

transportation options, such as public transportation, bicycle, pedestrian, or clean vehicles. As part of this initiative, ICT plans to double ridership from 2018 to 2028.

If ICT intends to double ridership in 10 years, adopting a fare free policy is recommended as the most effective and cost-efficient way to achieve that goal.