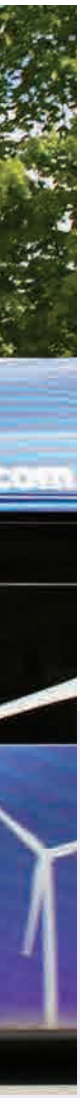


Recommendations for Transit Optimization

Guiding Principles

In developing the recommendations for this Transit Optimization Study, the project team began from a set of Guiding Principles. These principles represent a summation of all of the analysis, public outreach, and coordination with staff and the DART Commission that occurred prior to and throughout the course of this project.

1. The **fixed route network is largely productive**, with the largest service investments deployed in areas of greatest transit propensity

2. DART's **highest ridership routes** will be the **"backbone" of the system**

3. In low density areas, **MOD** can provide **flexible mobility** and **connect workers to jobs**

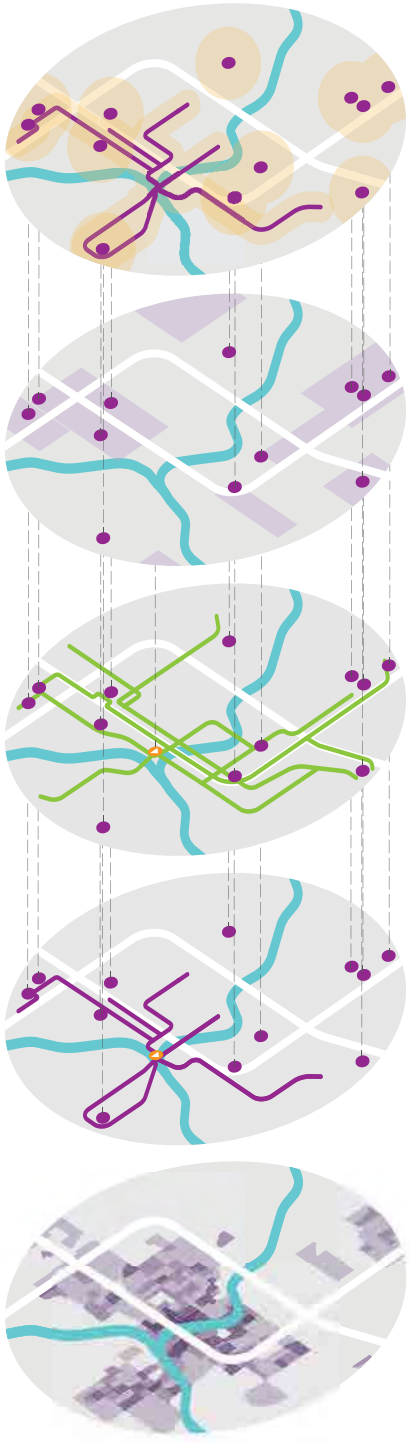
4. To integrate new forms of mobility, DART must offer passengers a **seamless travel experience**

5. DART must be a **good steward of limited resources,** but **the public strongly supports greater investment**

6. **Customers are satisfied** with DART but want **longer hours, non-downtown connections, and frequent all day service**

Design Principles

The Recommendations of the Transit Optimization Study each represent a component of a comprehensive transit network intended to enhance mobility and access throughout the region, and to respond to the priorities articulated by both riders and non-riders through DART's extensive outreach efforts. To be most effective, each component of the system must be viewed as a part of a larger whole, in which **complementary fixed route and on-demand services; supporting infrastructure; seamless trip planning tools**; and **supportive land uses** are integrated. The graphic below visually depicts the design principles that frame the way that these different components fit together and reinforce one another.



Deploy **MOD** to extend the reach of the DART system and provide **flexible travel options**, especially for those **seeking jobs beyond the frequent local fixed route network**

Provide **non-downtown connections** through expanded **feeder corridors** and **crosstown service**

Expand service hours where possible to run an **all-day, everyday network**

Enhance DART's **priority corridors** with **frequent service** and **on-street infrastructure investments** to provide **more reliable and faster service**

Work with member communities to drive **transit-supportive land use and development patterns** to maximize the benefits of transit for residents, workers, and businesses

Develop **mobility hubs** where DART services interconnect, providing a comfortable and **seamless travel experience**

Transit-supportive development increases transit propensity over time

Updated DART Service Categories and Performance Targets

The DART system is built around a framework for categorizing and evaluating different types of service. The following updated service categories may be applied to DART's existing service as well as future services as they are developed. Some existing routes may be transitioned to different categories in the future.

Service Description	Passengers per Revenue-Hour	Operating Cost per Customer	Headways	Span of Service
Priority Corridors Highest-frequency, 7-day corridor service intended to serve areas with the most supportive land uses, and carry large numbers of transfers from other routes. Enhance with supporting infrastructure investments	25	$5.00	• 15 minute weekdays (aspirational goal) • 30 minute nights and Saturday/Sunday	• 5:00 am to 11:00 pm weekdays • 6:00 am to 11:00 pm Saturdays • 6:00 am to 8:00 pm Sundays
Key Corridors 7-day, frequent corridor service intended to serve dense areas; lower priority for supporting infrastructure	20	$7.00	• 15 minute weekdays • 30-60 minute nights and Saturday/Sunday	• 5:00 am to 11:00 pm weekdays • 6:00 am to 11:00 pm Saturdays • 6:00 am to 8:00 pm Sundays
Supporting Corridors Corridor service in lower-density travel markets, 5-day service with weekend service only where appropriate. Where practical, may be operated as an extension of a higher-frequency Corridor route.	15	$10.00	• 30-60 minute weekday all day, less where appropriate • Weekend service where appropriate	• 5:00 am to 10:00 pm weekdays • Weekend hours where appropriate
Commuter Express Nonstop travel between specific higher-density locations and mobility hubs; limited service hours tailored to ridership demand	10	$15.00	Span and headway should be determined based on markets served. Particularly if reverse commute trips are intended to be served, service should be designed in coordination with employers based on shift times	
Feeder Local travel in lower-density travel markets to serve short trips and transfers to Corridor and Commuter Express routes. Where practical, may be operated as an extension of a higher-frequency Corridor or Commuter Express route.	10	$20.00	• 30-60 minute weekday all day • Weekend service where warranted	• 6:00 am to 9:00 pm weekdays • Where appropriate, similar hours on weekends • Some routes may operate during peak hours only
Shuttle Specific high-density local markets with an emphasis on circulation in dense, walkable areas. These routes tend to facilitate very short trips and rely less on connectivity to the full transit network.	15	$6.00	• 15 minutes	• Varies

Service Description	Passengers per Revenue-Hour	Operating Cost per Customer	Headways	Span of Service
Microtransit/On Call In low-density areas, agency-operated on-demand shared ride service for short trips and transfers to the fixed route network. Can also serve some current paratransit trips to boost productivity.	3.5	$25.00	20-minute maximum wait for 90% of microtransit trips	• 5:00 am to 10:00 pm weekdays • Weekend service as appropriate
Flex Connect In small markets with specific mobility needs, TNC-operated on-demand service for short trips and transfers to the fixed route network; may operate at all times or as a fixed route substitute during low-demand hours to expand access to the DART network	Up to 2.5. Above this threshold DART should consider transitioning to Microtransit or fixed route.	Varies by service area size	20-minute maximum wait for 90% of trips	Hours tailored to the market being served

Performance Monitoring and Service Modifications

DART's Service Standards and Performance Monitoring Guidelines provide more detail on how DART monitors service performance in a routine, consistent, and equitable manner and how services are modified accordingly. Routes that consistently underperform relative to Service Standards may require corrective action to improve performance or reallocation of resources to more effective service options.

Universal service design principles

DART lays out its transit system around certain universal design principles based around reasonable walking distances, as most DART customers begin and end their trips as pedestrians.

- ½ mile spacing between parallel bus routes
- ¼ mile typical spacing between local bus stops. Express routes will operate closed-door segments with no stops, while shuttles may have stops spaced more closely. If DART pursues Bus Rapid Transit (BRT) in the future, typical stop spacing on a BRT route may be ½ mile or more, especially if local service with more frequent stops operates on the same corridor.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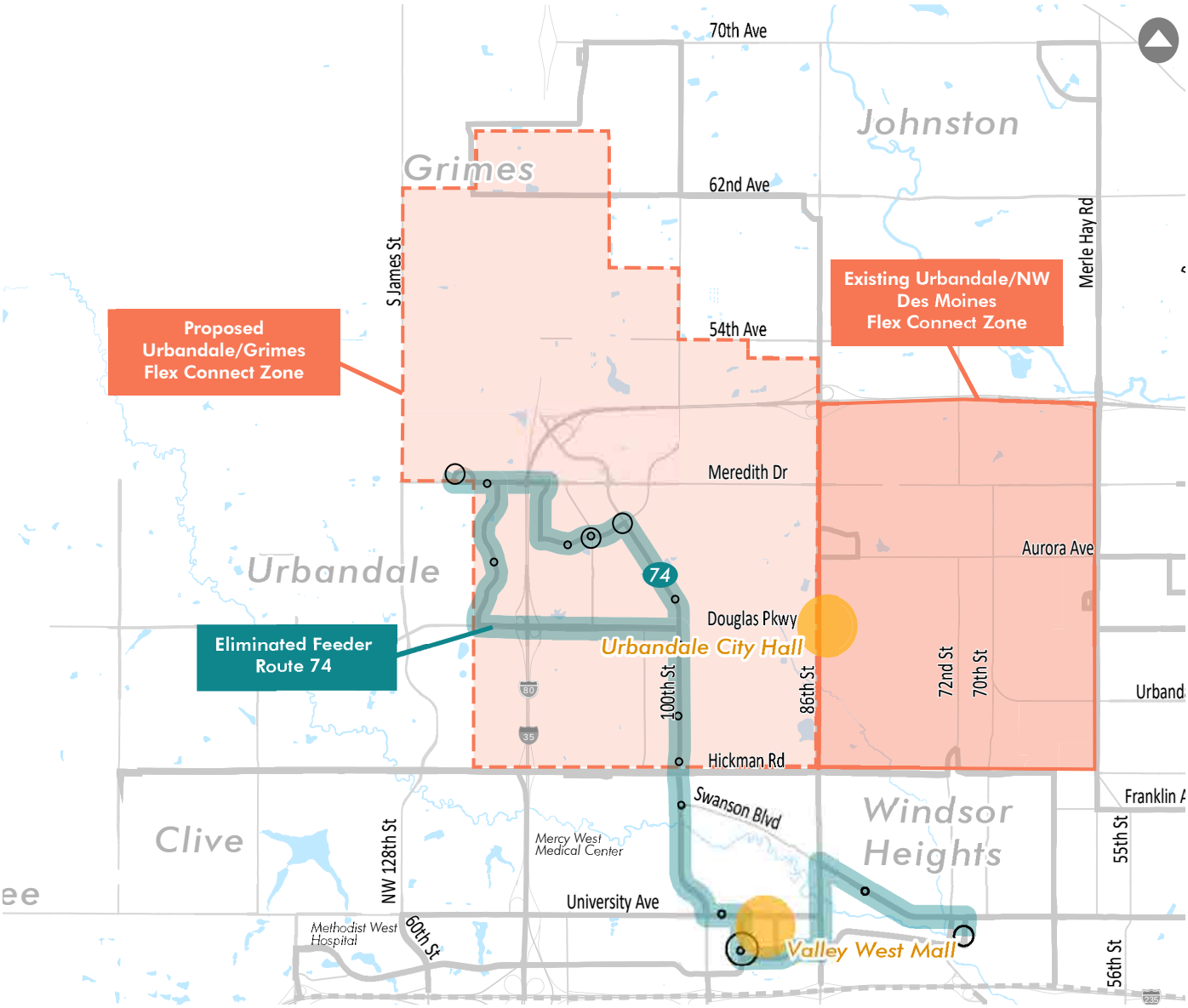
Near-Term Service Proposals

DART has identified a number of changes that can be made with existing resources in the next 1-3 years. By reducing service on lower-performing bus routes, resources can be shifted to serve customer needs identified in the study.

Flex Connect Urbandale / Grimes



In DART's spring survey, respondents expressed concern about the reliability of service provided through Uber and taxis. DART must monitor the reliability of its existing Flex Connect service against its Service Standards before proceeding with expansion.

The Goal

- Provide cost-effective first/last mile connection to employment areas in NW Urbandale and Grimes

Proposed Change

- Replace Route 74 with a new Flex Connect Zone that will provide Uber or taxi service to select bus stops from anywhere in the zone
- Mobility hubs and designated fixed-route transfer points at Valley West, Urbandale City Hall
- Expansion to Grimes
- Service hours 6 a.m. to 6:30 p.m. Monday - Friday

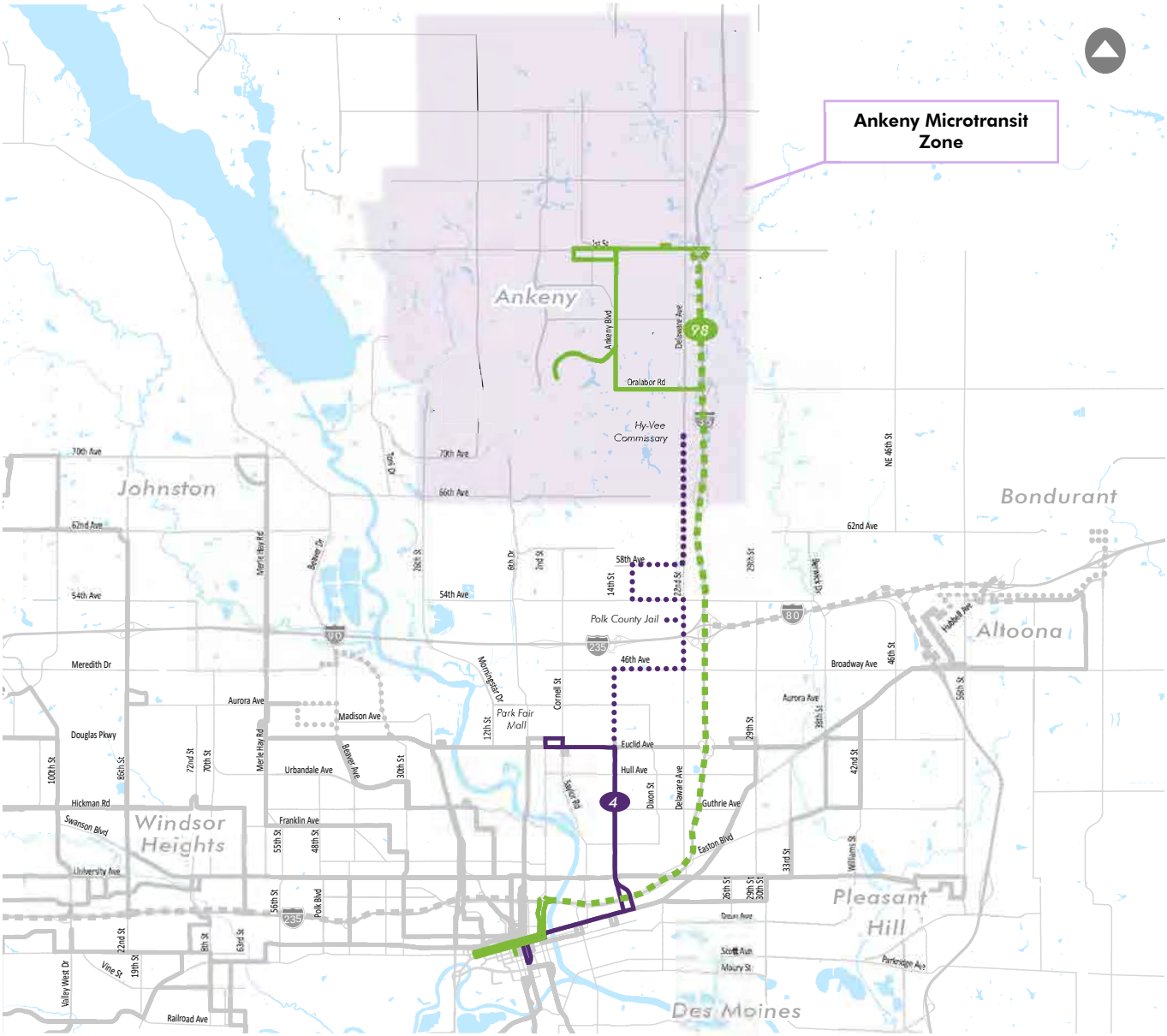
Rider Impact

- Minimal disruption: only 25 daily boardings, most are transferring already
- Expanded hours of service compared to existing Route 74
- On demand service reduces wait times compared to the current hourly bus service.

Cost Impact

- Cost-neutral to serve existing Route 74 demand + up to 50% increase in demand
- As resources allow, consider **longer hours and weekends**

Ankeny Microtransit Pilot



In DART's spring and fall outreach efforts, there was strong support for implementing microtransit in Ankeny and elsewhere in the region. As with other on demand models, short wait times and reliability will be key to customer satisfaction. In late 2021, DART launched the DART On Demand microtransit pilot in Ankeny.

The Goal

- Provide more flexible, customer-friendly local circulation in Ankeny

Proposed Change

- Upgrade Ankeny On Call to Microtransit, expand hours to 6 a.m. - 6:30 p.m. Monday - Friday

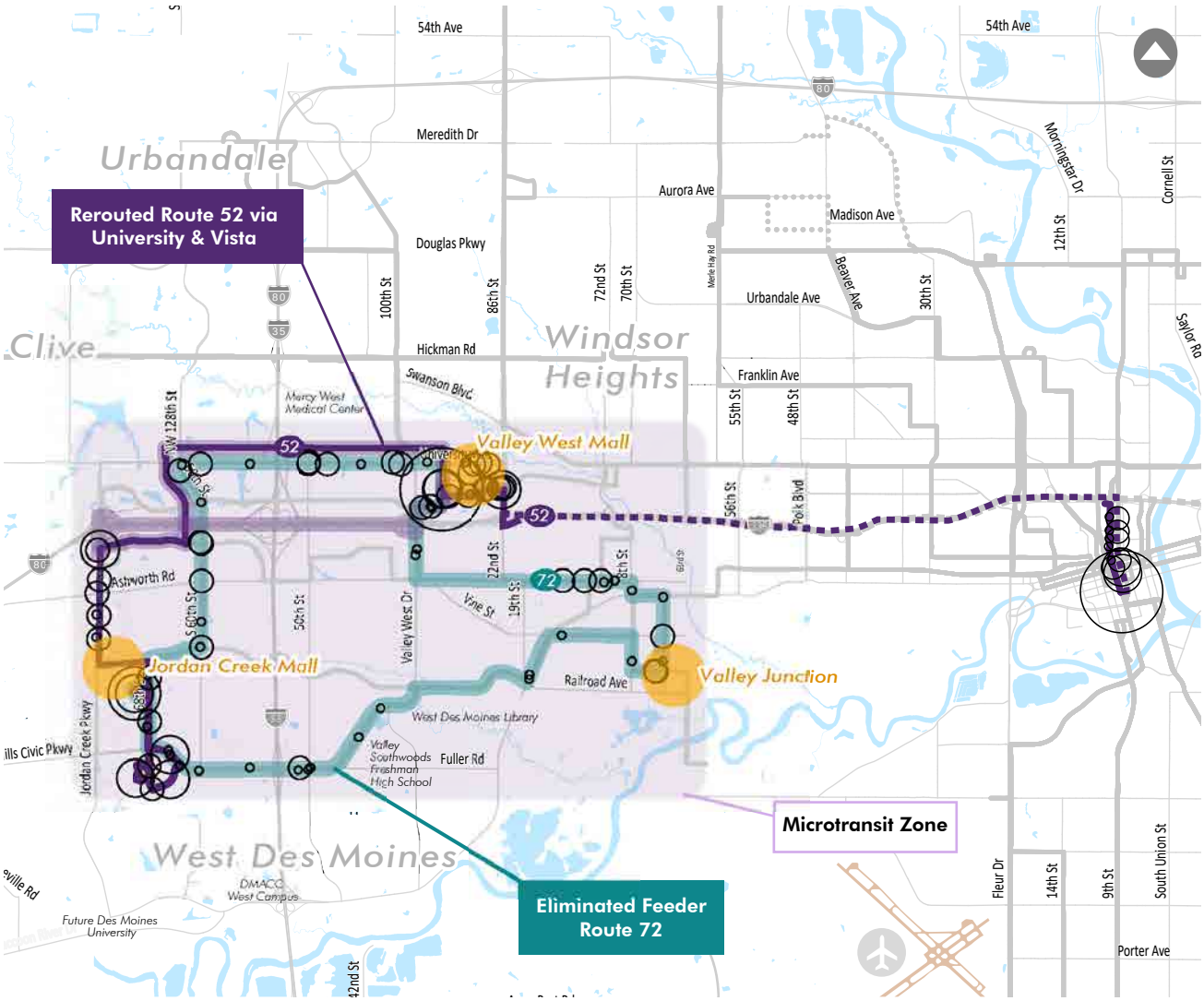
Rider Impact

- Few riders use the On Call today: opportunity for growth
- May be able to accommodate some local paratransit trips
- Could be a "stepping stone" to local fixed route service if demand exceeds practical limitations of Microtransit

Cost Impact

- **One vehicle funded for FY22**
- Resource needs are driven by service standard (i.e. maximum wait times): if demand is strong, additional vehicles may be needed, increasing the cost

Microtransit West



In DART's Fall 2021 outreach, over 40% of West Des Moines residents said this proposal would lead them to ride transit more, and only 17% said they would ride less. Feedback from Route 72 riders was mixed, and additional outreach should be conducted to explain the specific proposals and better understand how the service can be tailored to meet customer needs.

The Goal

- **First/last mile connections and local circulation** in West Des Moines, expanded service hours

Proposed Change

- Discontinue Route 72
- Reroute Route 52 to cover portions of the discontinued Route 72 along University Ave and 60th Street
- Implement microtransit throughout West Des Moines, substituting Route 72 and expanding local travel options. Microtransit would operate from early morning to late evening, with service offered 7 days a week.
- Mobility hubs at Valley West, Jordan Creek, and Valley Junction

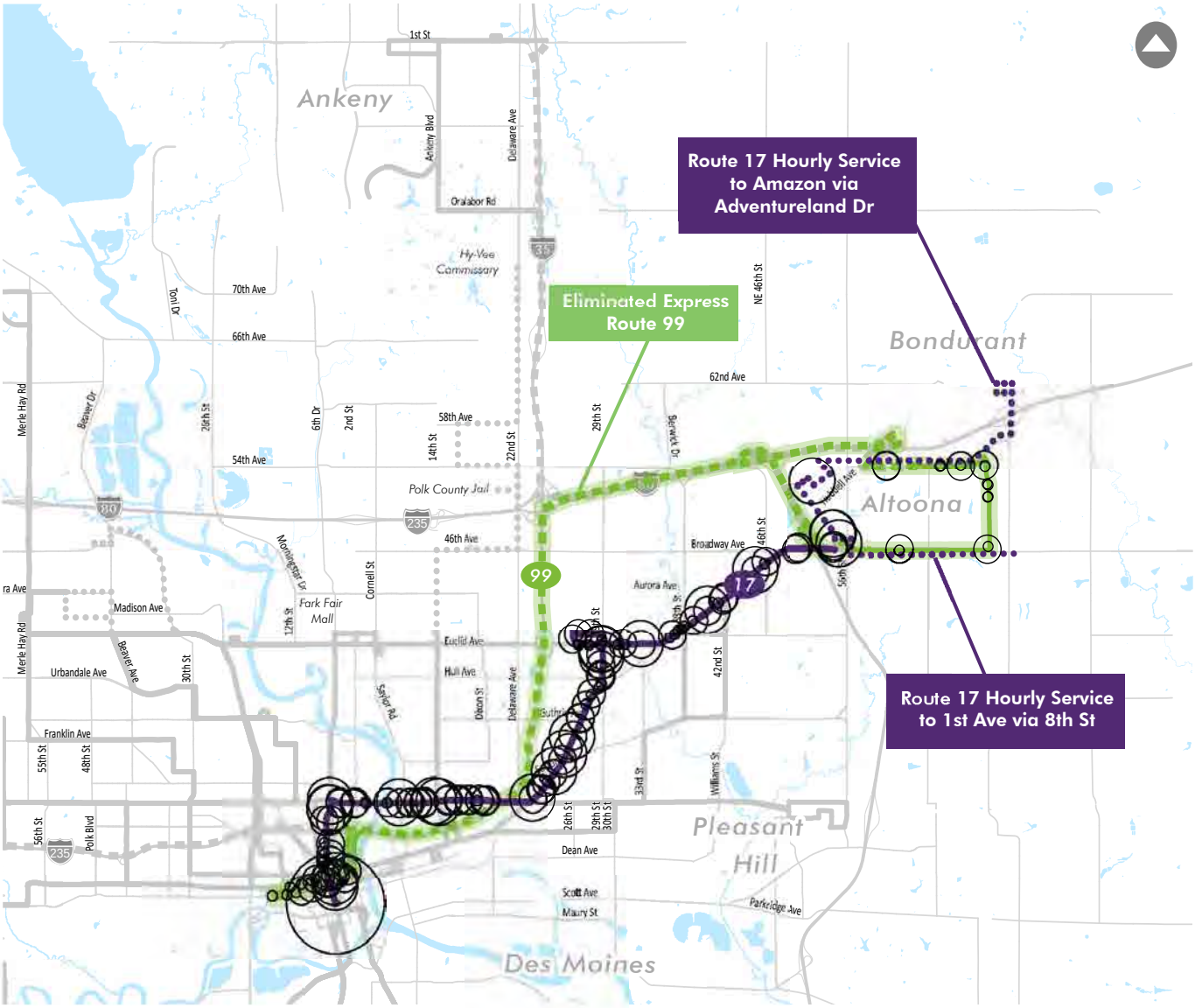
Rider Impact

- 75 riders (Route 52+72) riders lose fixed route service
- 100 Route 72 riders receive one-seat ride to more destinations, higher frequency service, and longer hours via the rerouted Route 52
- Route 52 frequency is reduced from 30 to 40 minutes to facilitate timed transfers with Route 3 at Valley West Mall.
- Microtransit increases access and schedule flexibility over discontinued Route 72

Cost Impact

- Potential cost savings depending on number of microtransit vehicles deployed
- Flexibility to expand microtransit

Discontinue Route 99, Reinvest in Route 17



This proposal was adjusted in response to public feedback from DART's fall 2021 outreach, where some expressed concern over the loss of service resulting from elimination of Route 99.

The Goal

- Improve mobility for reverse commuters seeking jobs in Altoona and Bondurant

Proposed Change

- Discontinue Route 99
- Reinvest resources into Route 17: operate 30-minute service to WalMart, with hourly service to Adventureland Drive, Amazon, and 8th Street corridor

Rider Impact

- Longer hours, better service for reverse commuters
- Significant increase in service along Adventureland Drive and along 8th Street
- Travel time impact depends on destination
- Route 99 riders switch to Route 17 or stop riding
- Fewer than 2 daily Route 99 riders would lose fixed route service

Cost Impact

- Cost-neutral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Des Moines Area Regional Transit Author
dart
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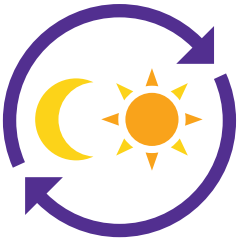
Potential Future Improvements

As one of the fastest growing Midwest metro areas, we know transportation needs will continue to evolve as the region grows. DART's vision for the future of its transit network includes recommendations for additional investment of operating resources in the DART system that can be rolled out over time as resources become available. Many of the recommendations in this section build and expand upon the near term service proposals presented in the previous section. These recommendations are intended to respond to the following community needs, which are priorities that have been articulated in multiple rounds of public outreach:

Providing access to new places
New fixed-routes, Microtransit zones, and Flex Connect zones greatly expand the geographic reach of DART's network, providing more residents and jobs with access to transit service.



Extending service for longer hours
Longer service hours make transit available at more times of day, so it is useful to riders for a wider variety of trip purposes. Select routes with service earlier in the morning and later at night on weekdays and weekends will increase transit's usability for many riders.

Reducing travel and wait times
Increased frequencies reduce the amount of time riders have to wait for the bus, shortening overall travel times, especially when trips involve a transfer.

Facilitating travel outside of downtown
Acknowledging that not all trips are destined for Downtown Des Moines, new Microtransit and Flex Connect zones focus on facilitating intra-community travel, allowing riders to use transit for short-distance, local trips such as grocery shopping and running errands.

Modest Enhancements

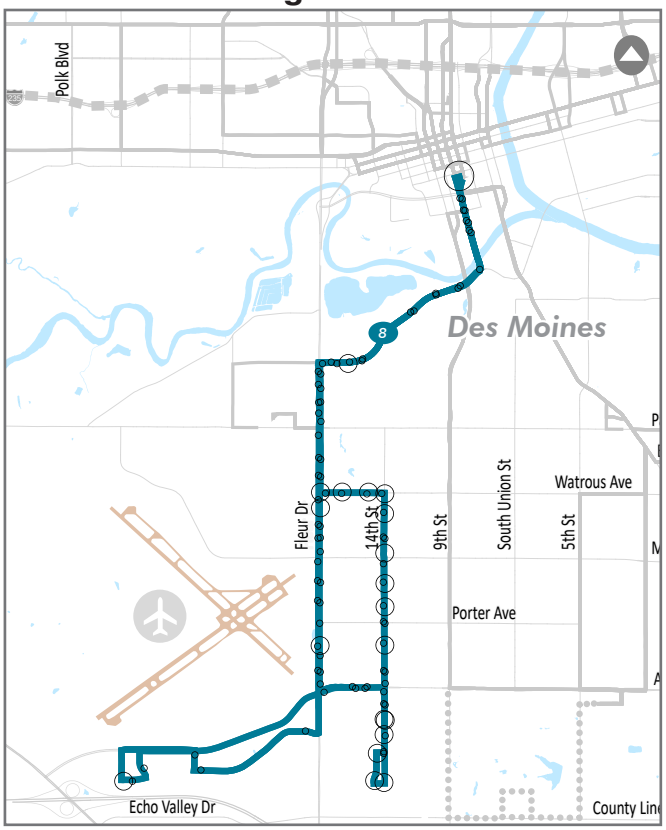
DART has identified a number of recommendations that are responsive to regional needs and customer requests, but are beyond DART's existing budget. These recommendations could only be implemented if additional funding were identified for DART.

Long-Term Enhancements

As the region continues to grow and conditions evolve, additional investments in transit could be needed to accommodate expected growth in jobs and housing. The following recommendations would be appropriate to pursue with additional funding partnerships or in response to significant future growth.

All Day Service on Fleur Drive

Existing Service



Proposed Service

More service on Fleur Drive and to the airport has been a common customer request and was identified as a top priority in DART's Fall 2021 public outreach.

With a major expansion of service to the South Business Park, DART would expect ridership growth along this segment which sees few riders today. If ridership does not respond, the service would be reevaluated in the future for potential elimination or substitution with MOD.

The Goal

- Simplify routing to make it more customer-friendly
- Address customer and business requests for more service

Proposed Change

- Break Route 8 into two simpler alignments
- Hourly all-day service along SW 14th Street
- Hourly peak service on Fleur Drive to Airport South Business Park
- Start with weekday only service

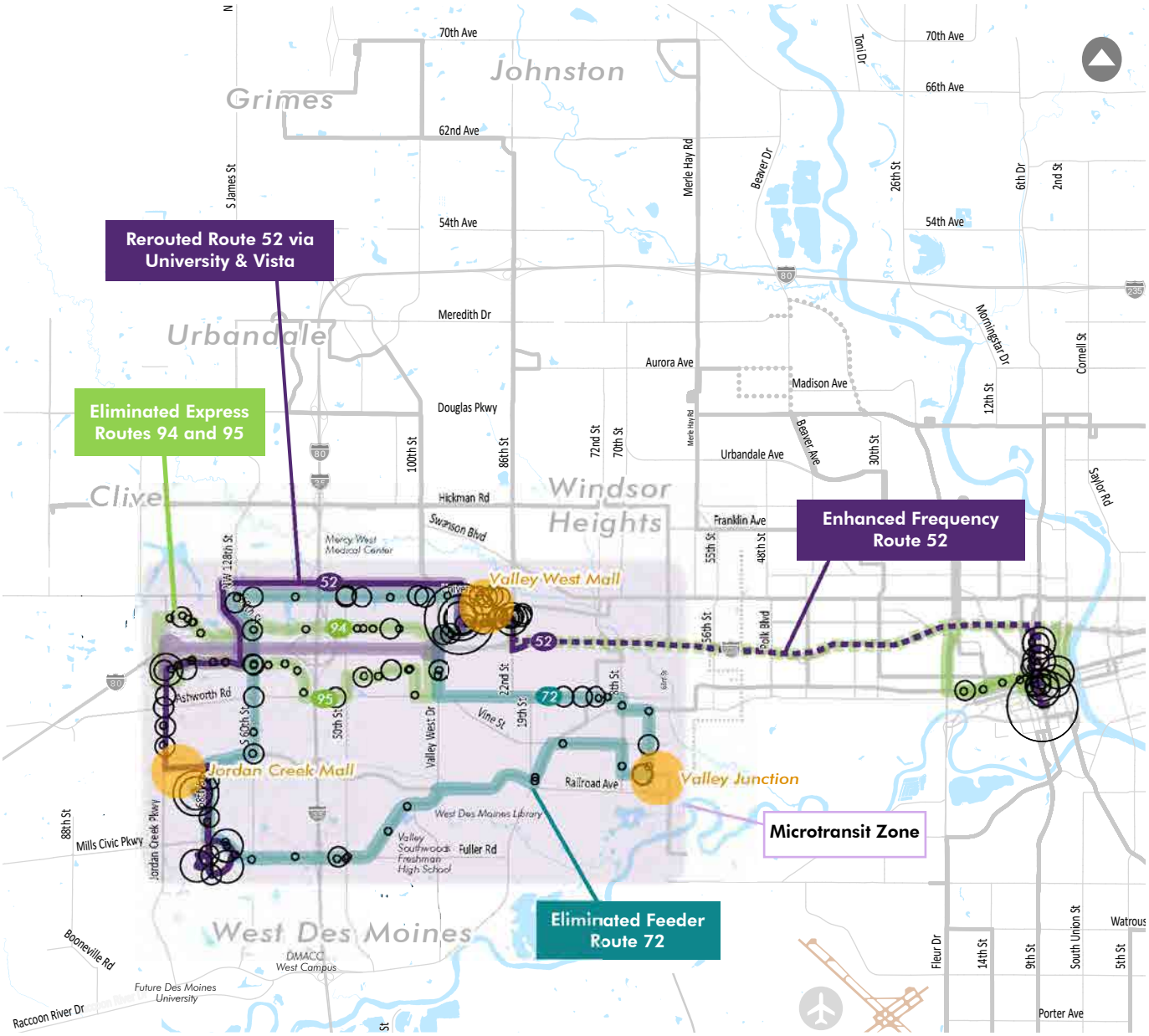
Rider Impact

- Significant increase in service compared with peak-only service that operates today
- Simpler routing
- SW 14th St would lose service between McKinley Ave and Army Post Road, but would remain within 1/2 mile of both Route 7 and Route 8

Cost Impact

- $300k/year additional operating cost

Microtransit West, Phase II



The Goal

- Improved local circulation
- All-day reverse commute service

Proposed Change

- Discontinue express routes 94 and 95
- Increase frequency on Route 52 to 20 minutes during peak hours
- Expand microtransit resources to accommodate increased demand - anticipate up to three vehicles deployed during peak hours
- Mobility hubs at Valley West, Jordan Creek, and Valley Junction

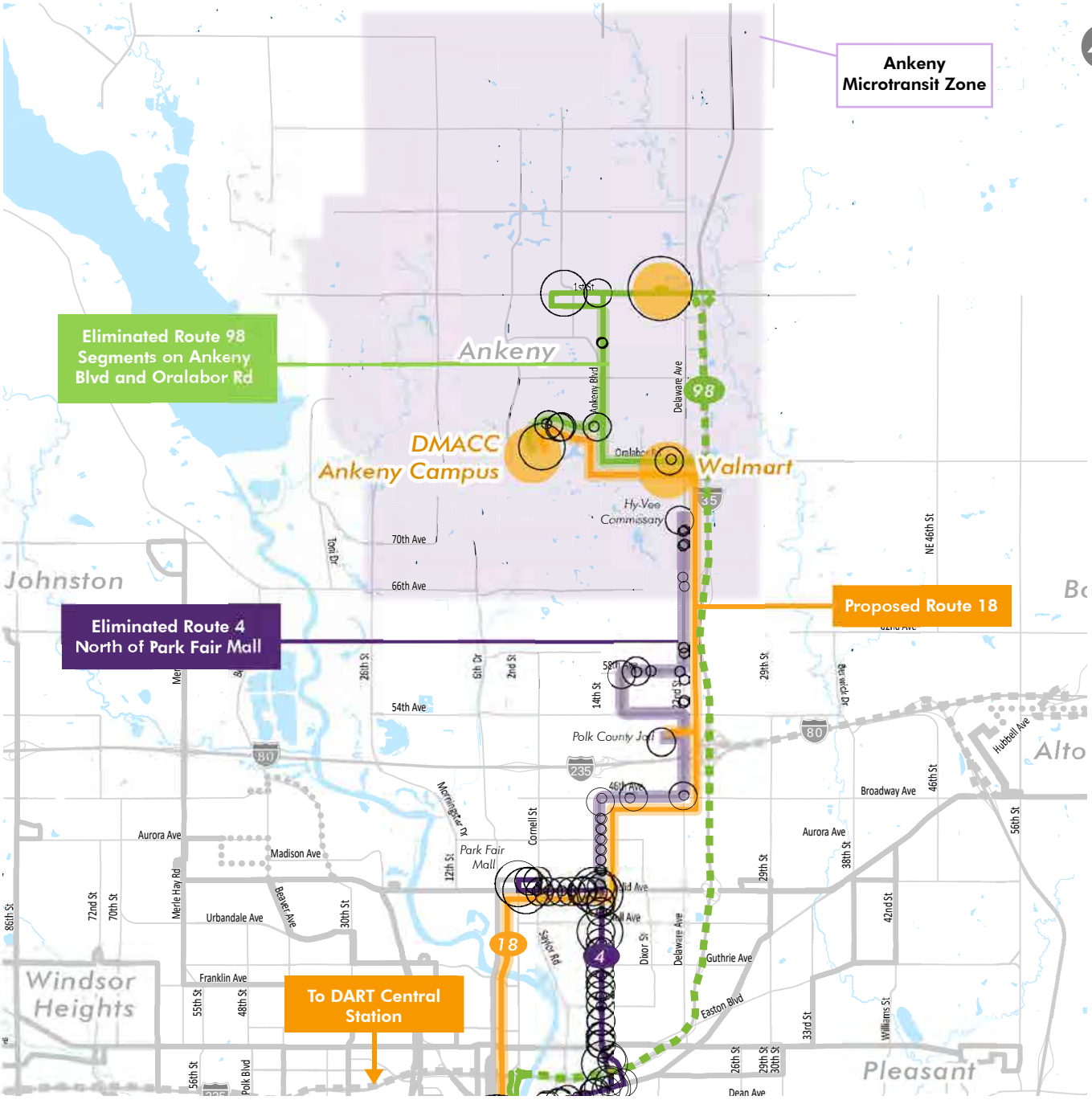
Rider Impact

- More convenient reverse commute option with longer hours
- 35 inbound express passengers shift to Route 52, 92, 96, or stop riding
- 40 reverse commute express route passengers switch to microtransit

Cost Impact

- Around $300k/year

Expanded Ankeny Microtransit with Supporting Fixed Route



The Goal

- Expand local circulation in Ankeny
- Better connect points throughout Ankeny to the rest of the DART service area

Proposed Change

- Expand Ankeny Microtransit hours to 10:00 pm and add weekends
- All day local service via new Route 18, replacing the low-frequency Route 4 extension
- Reduce Route 98 circulation and eliminate some off-peak trips
- Mobility hubs at DMACC, WalMart, Mercy North

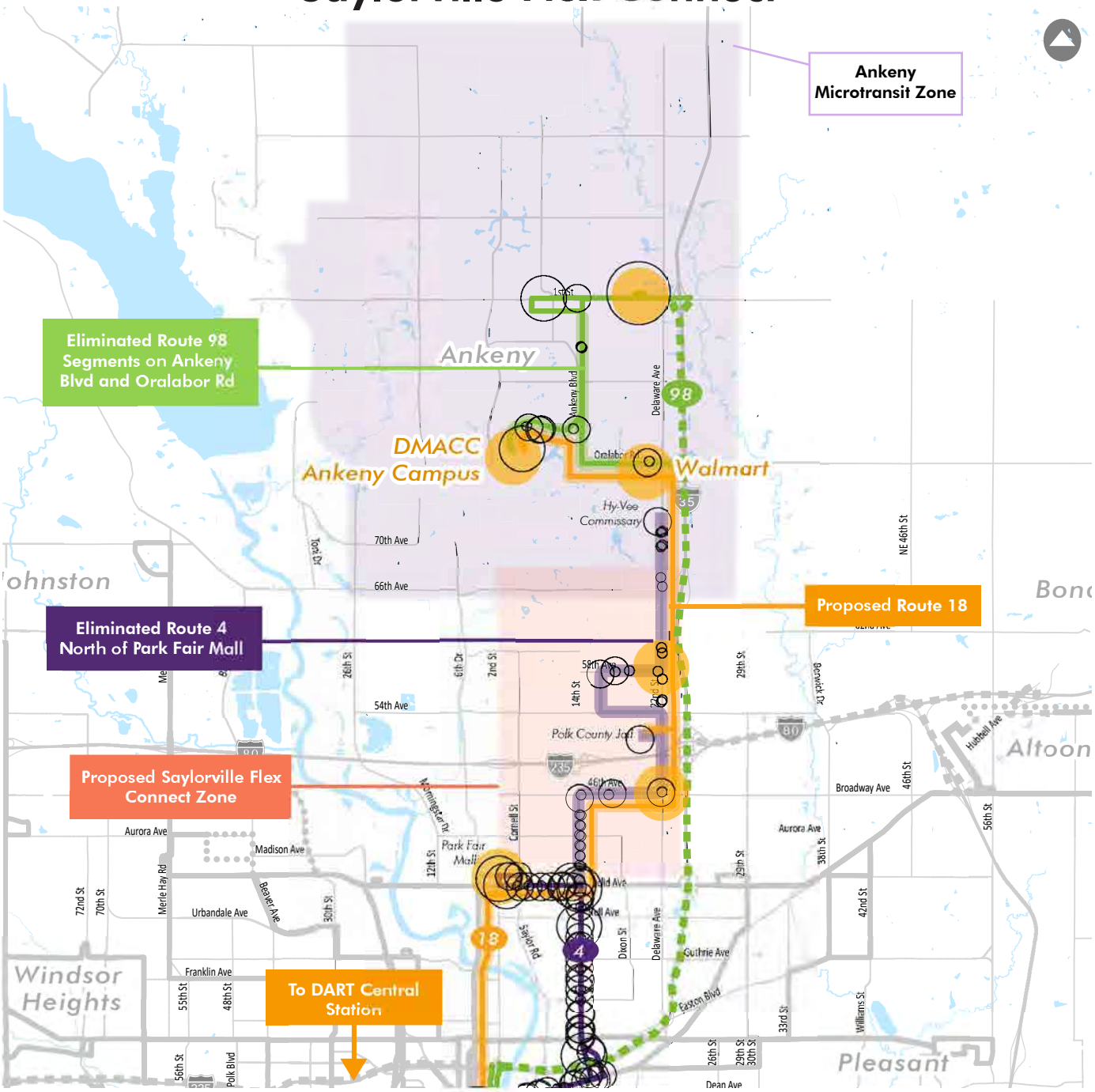
Rider Impact

- Loss of one-seat express at DMACC
- Significant expansion in local and inter-city mobility for Ankeny

Cost Impact

- $750k/year for fixed route expansion
- $125k/year to extend Microtransit to 10pm and weekends

Saylorville Flex Connect



The Goal

- Improved first/last mile service to jobs between Euclid Avenue and Ankeny

Proposed Change

- Implement Flex Connect service to link to the expanded Route 18
- Mobility hubs along Delaware Ave and Park Fair Mall

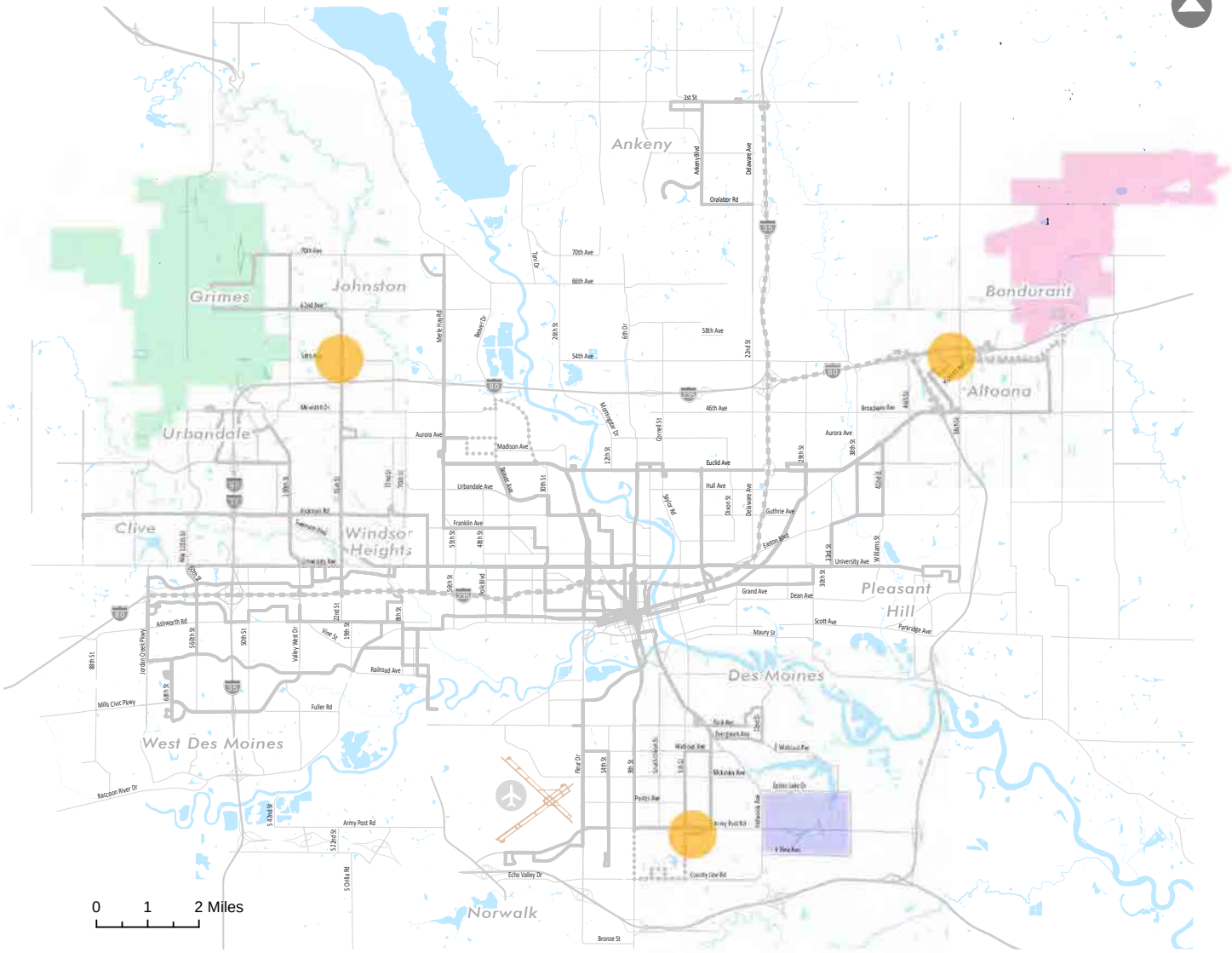
Rider Impact

- Enhanced jobs access from both Ankeny and Des Moines

Cost Impact

- $9-10/trip for additional Flex Connect service, demand TBD
- Seek employer support for this service

Roll out MOD to DART's other On Call Zones



The Goal

- Improved customer experience with flexible, same-day booking

Proposed Change

- Roll out Flex Connect platform to existing On Call zones
- Would require adding the ability to collect fares
- Eventually transition Grimes On Call to Microtransit following evaluation of the Ankeny pilot
- Complement with mobility hubs to facilitate transfers to fixed routes

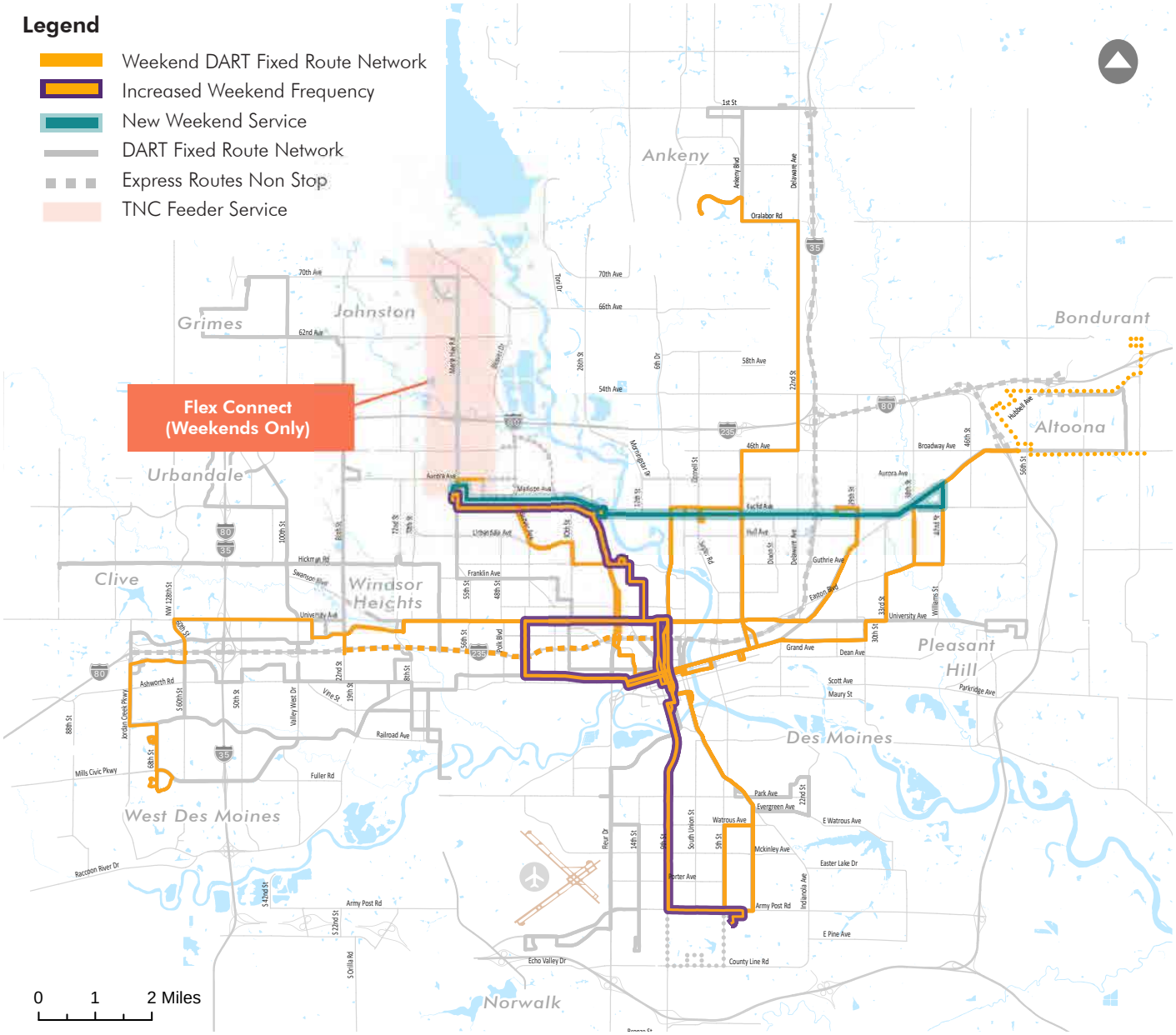
Rider Impact

- Service availability remains the same, increased convenience of on-demand option
- Some customers may still prefer DART-operated service

Cost Impact

- Cost-neutral or potential cost savings for addition of Flex Connect option. Transition to microtransit and expansion of Grimes service would result in additional costs

Provide More Weekend Service, Especially on Sundays



Increased frequency, longer hours, and more routes on weekends are consistently the top-requested improvement among DART's existing customers, especially those with low incomes who depend on transit.

The Goal

- Better meet customers' mobility needs throughout the week

Proposed Change

- Expand Sunday hours to 7:00 am - 8:00 pm systemwide
- Extend Saturday hours to 11:00 pm systemwide
- Introduce weekend Flex Connect feeder service on Merle Hay Rd from Merle Hay Mall to Johnston, linking this corridor to the rest of the DART network on weekends
- Add weekend service on Route 50
- 30 minutes frequency all weekend on Routes 7, 16, and 60

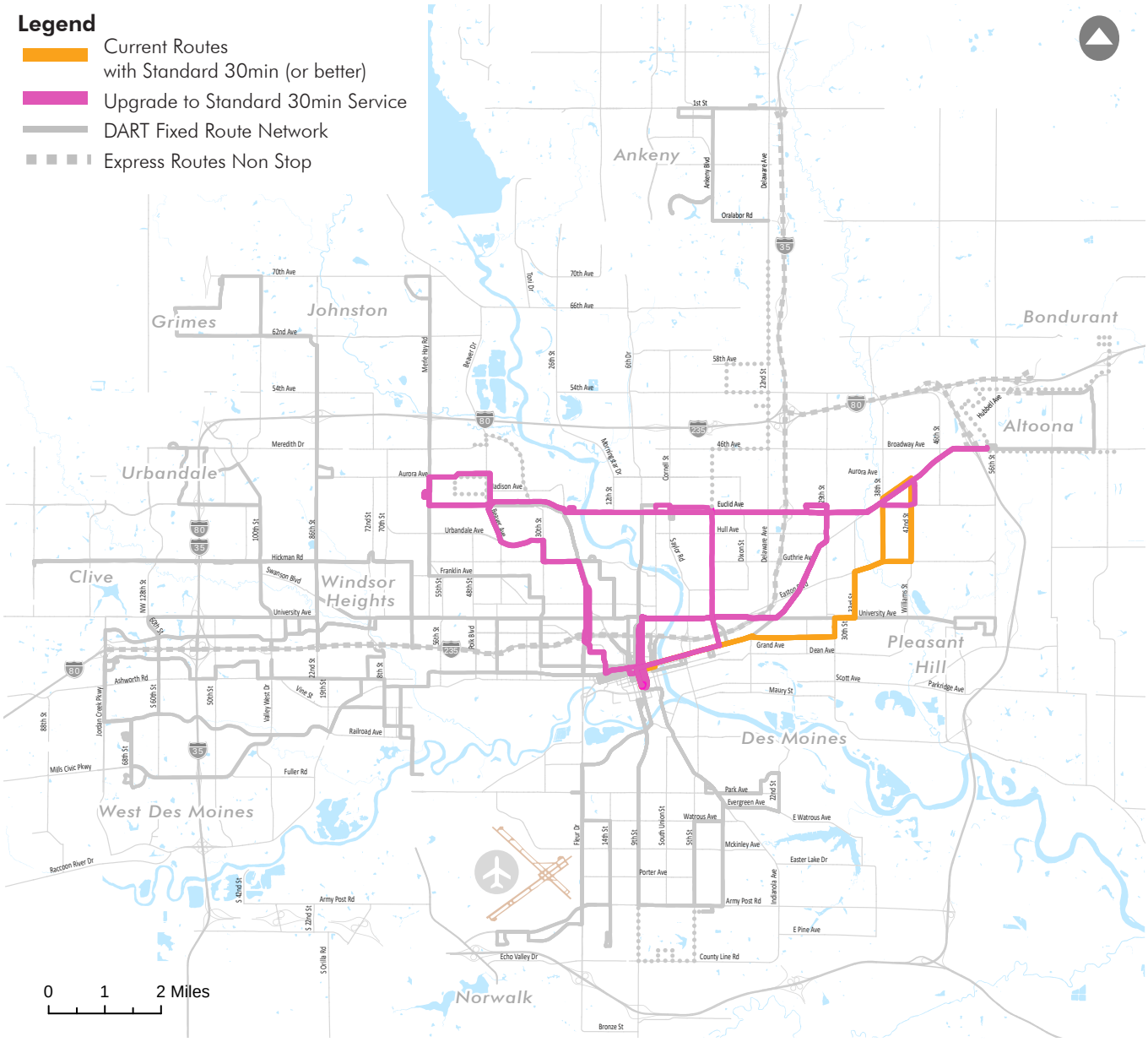
Rider Impact

- Improved weekend service

Cost Impact

- $250k for extended weekend hours
- $400k for frequency improvements
- $115k for new Route 50 service
- $67,000 for Merle Hay Rd weekend Flex Connect

Increased Frequency on DART's Most Productive Routes



The Goal

- Reinforce DART's Priority Corridor network with increased frequency
- Facilitate timed transfers to supporting routes and MOD
- Respond to a top customer request
- Grow ridership where demand is highest

Proposed Change

- Standardize 30-minute service on routes 4, 14, 17, and 50

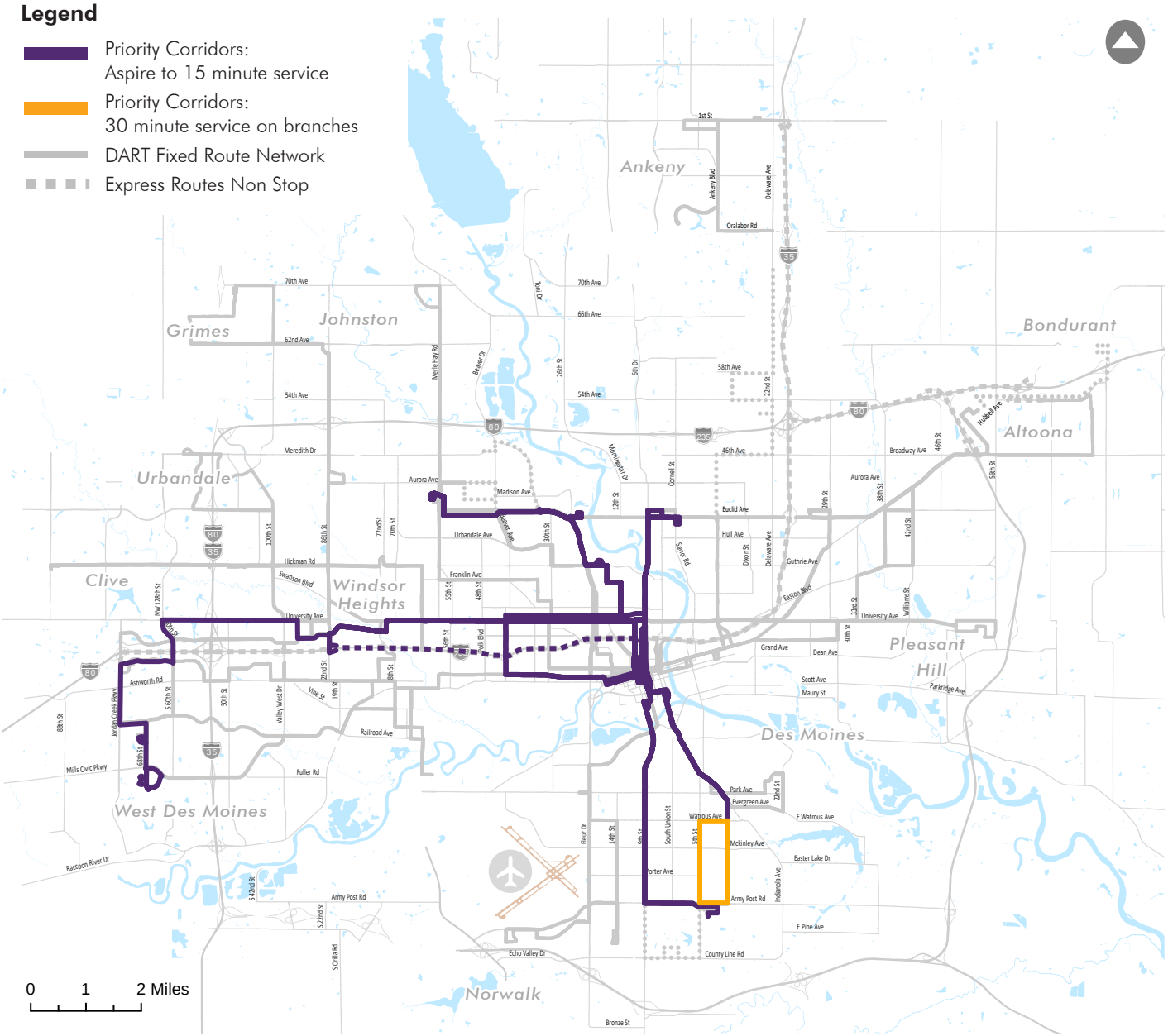
Rider Impact

- Improved convenience & access

Cost Impact

- $500k/year
- Can be phased in over time

Increased Weekday Frequency on DART's Most Productive Routes



The Goal

- Reinforce DART's Priority Corridor network with increased frequency
- Facilitate timed transfers to supporting routes and MOD
- Respond to a top customer request
- Grow ridership where demand is highest

Proposed Change

- 15-minute all-day service on routes 3, 6, 7, 15, 16, 52, and 60

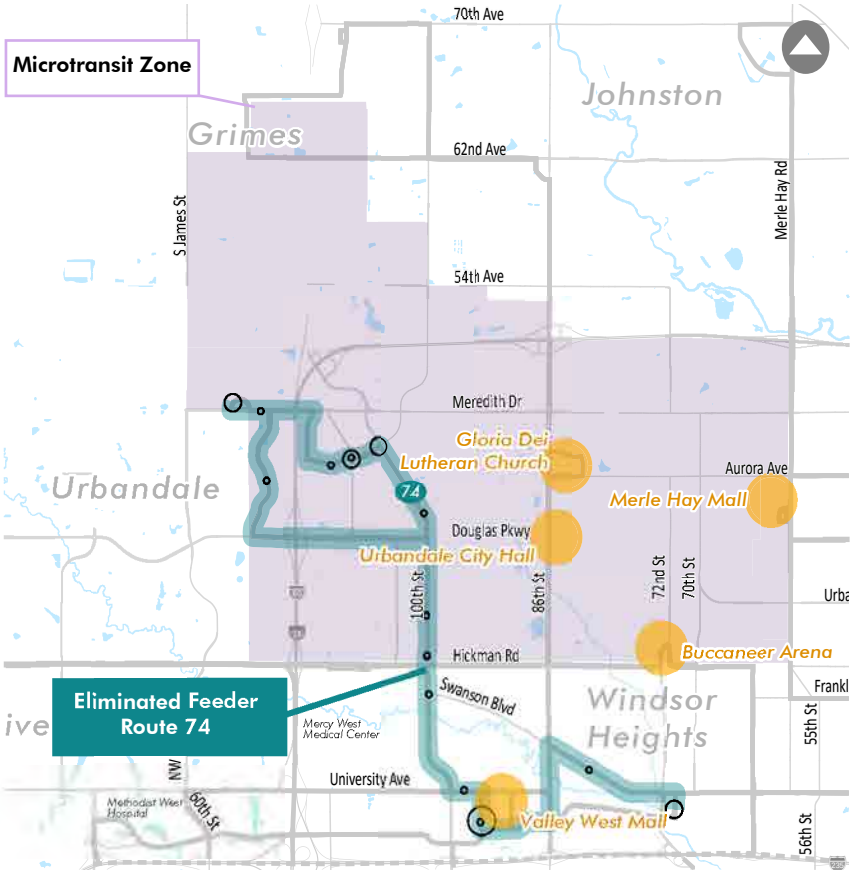
Rider Impact

- Improved convenience & access

Cost Impact

- $2.5M/year
- Can be phased in over time

Urbandale Microtransit



The Goal

- Increase local circulation opportunities
- Improve customer experience with a DART-operated service

Proposed Change

- Merge the two Urbandale Flex Connect Zones into a single DART-operated microtransit zone
- Allow local travel (current service primarily serves transfers to fixed routes)
- Expand hours to nights/weekends

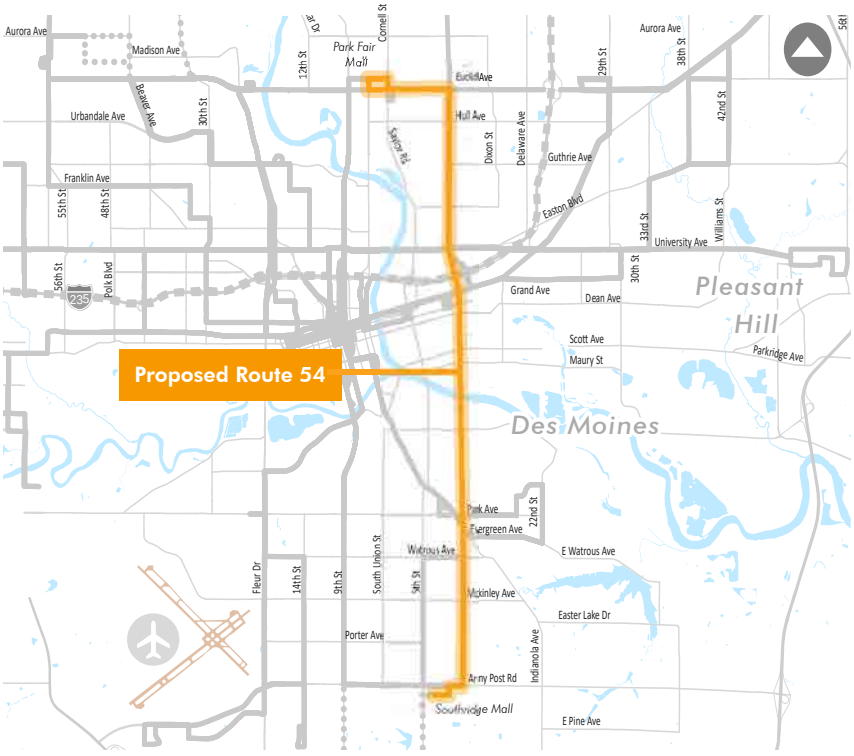
Rider Impact

- Enhanced flexibility to more fixed route connecting points
- Ability to make short trips within the zone
- No need to transfer to get between adjacent Flex Connect zones

Cost Impact

- $275k/year (plus additional cost for nights and weekends)

New Service: Route 54



The Goal

- Increase non-downtown connections among highest transit-propensity areas
- Fill SE 14th Street service gap

Proposed Change

- Implement a new crosstown feeder route
- 30-minute weekdays, 60-minute nights and weekends

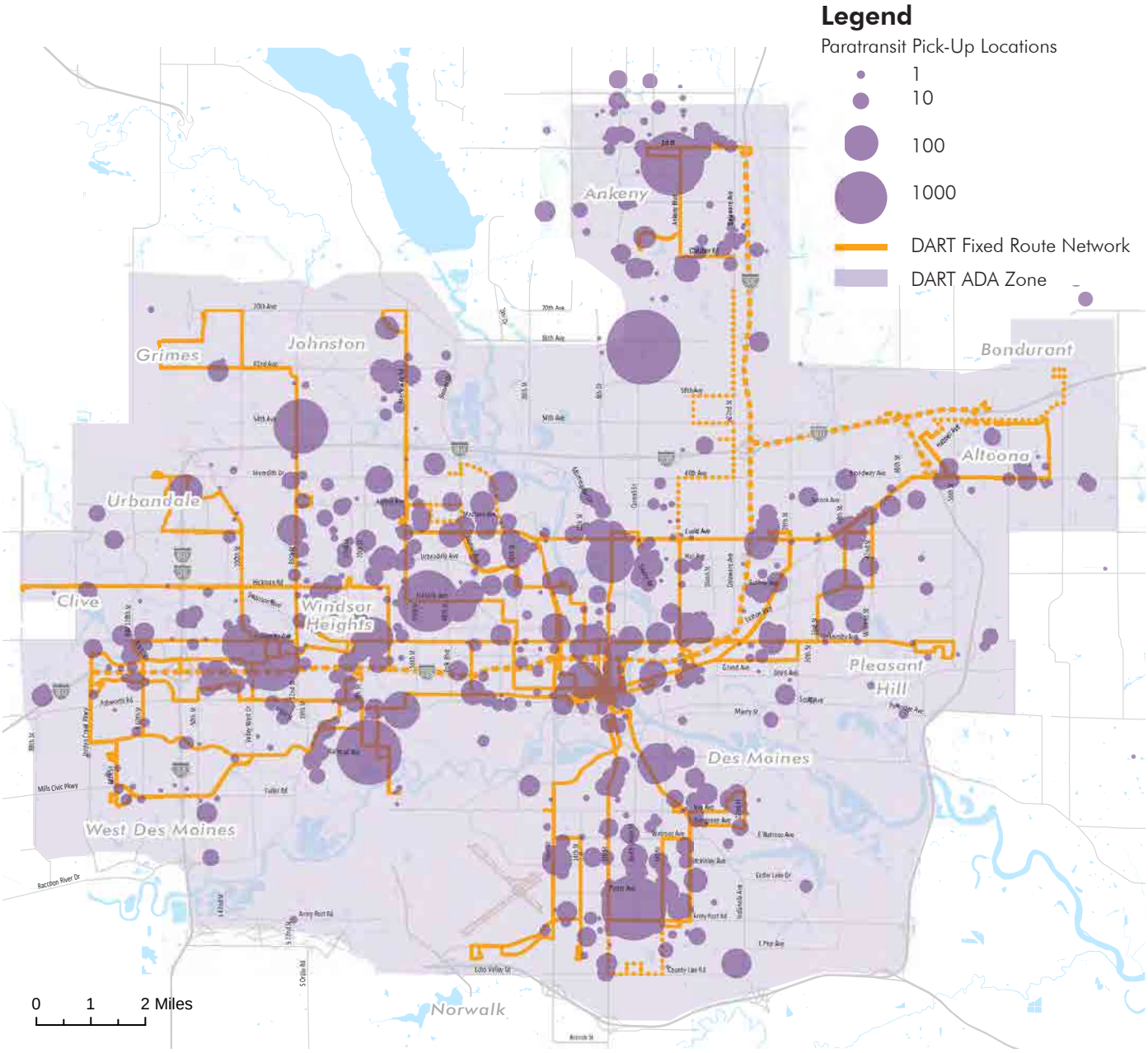
Rider Impact

- Increased mobility option

Cost Impact

- $1.0M/year

MOD Paratransit Improvements



The Goal

- Improve customer experience with flexible, same-day booking option
- Control cost by encouraging lower-cost solutions for ambulatory trips

Proposed Change

- Augment existing service with an on-demand, curb-to-curb TNC option

Rider Impact

- Conventional paratransit option remains available to all
- Some riders take advantage of more convenient option (DART has above-average share of ambulatory paratransit customers)
- Potential reliability issues with TNCs will need to be monitored

Cost Impact

- Potential for cost savings on some existing paratransit trips

Transit Supportive Infrastructure on the Priority Corridor Network

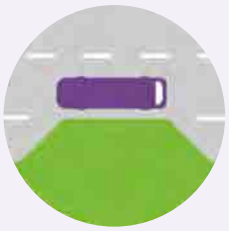
Transit-supportive infrastructure investments may include a variety of improvements aimed at making service faster and more reliable, improving passenger comfort, convenience, and safety, and ensuring seamless mobility between different routes and different modes at hubs throughout the system.

DART will continue to promote and support transit-supportive policies with its member cities, and work with member cities to seek grants to fund infrastructure improvements.

Infrastructure Toolbox:

Upgraded Bus Stops

- Basic pedestrian access to all local bus stops
- Shelters at most stops
- Higher-ridership stops and transfer locations may feature seating, trash receptacles, bike racks, and digital next-bus signs.



Bus Bulbs

- Speeds up transit operations
- Additional space for passenger amenities
- Traffic calming, crosswalk integration

Mobility Hubs

- Key points where multiple DART routes and services converge
- Designed to facilitate convenient transfers between buses, MOD, and other modes including bicycles and cars
- Mobility hubs can accommodate micromobility, carshare, parking for private cars and bikes

Queue Jumps

- Short, bus-only lane at a signalized intersection
- Buses get advanced green lights and bypass general traffic

Dedicated Guideway/Bus Rapid Transit

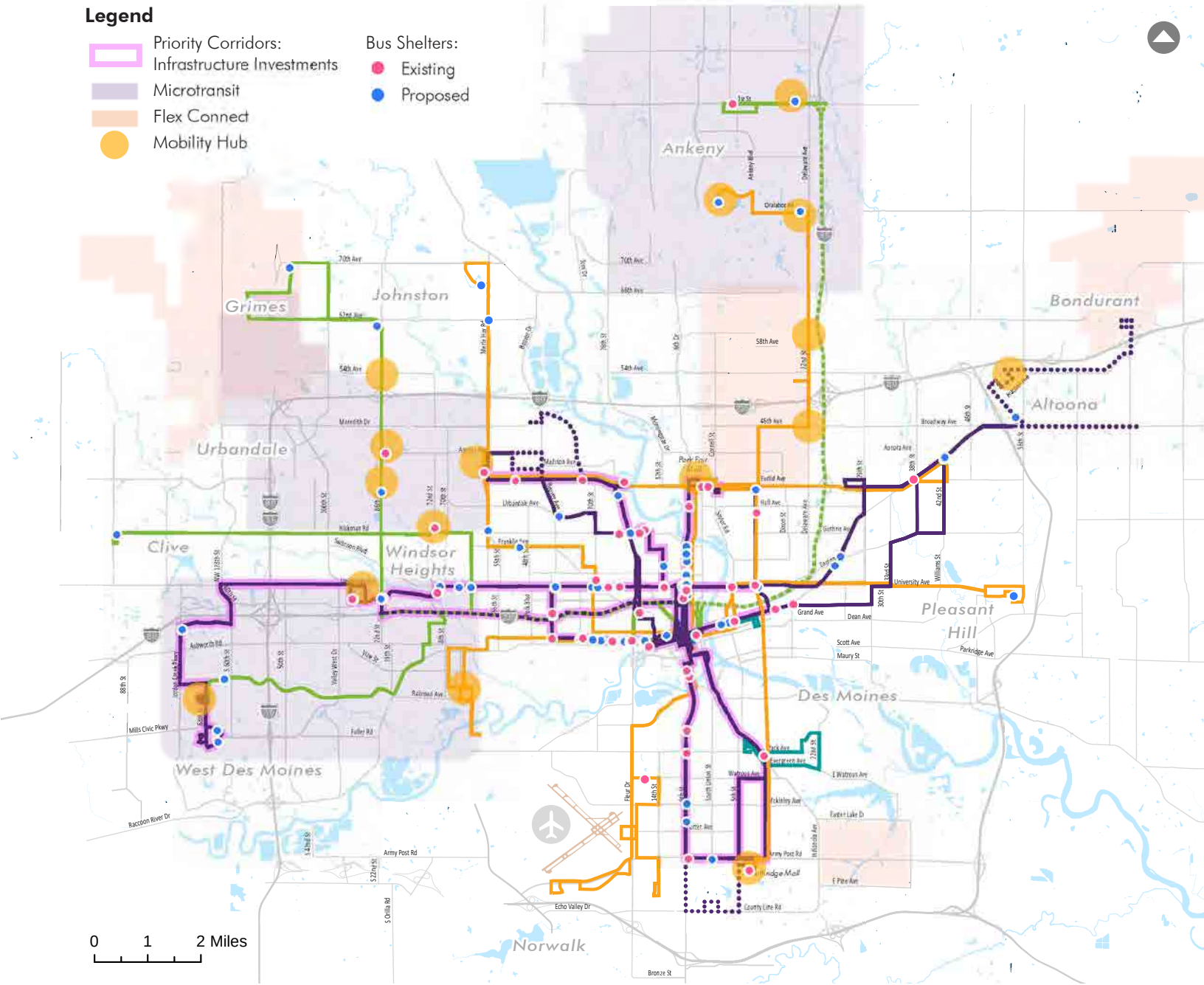
- Dedicated guideway ensures fast, reliable service
- High-frequency
- Customer-friendly amenities and branding
- Combined with features like TSP and enhanced stations
- Rail-like comfort and reliability

Transit signal Priority (TSP)

- Buses get priority at intersections
- Buses can request shorter reds, longer greens

Tie the Network Together with Transit Supportive Infrastructure

Building on DART's most highly utilized corridors, DART will work with local municipalities to invest in transit-supportive infrastructure, particularly along the Priority Corridor fixed route network. Priority corridor investments will ensure that DART's most-used, most-productive, and most-attractive services are also its fastest and most reliable – creating the backbone for the transit network of the future. To integrate its priority network with the rest of DART's family of services, DART will also develop mobility hubs throughout the system to facilitate safe and convenient transfers between buses, MOD, and other modes including bicycles and cars.



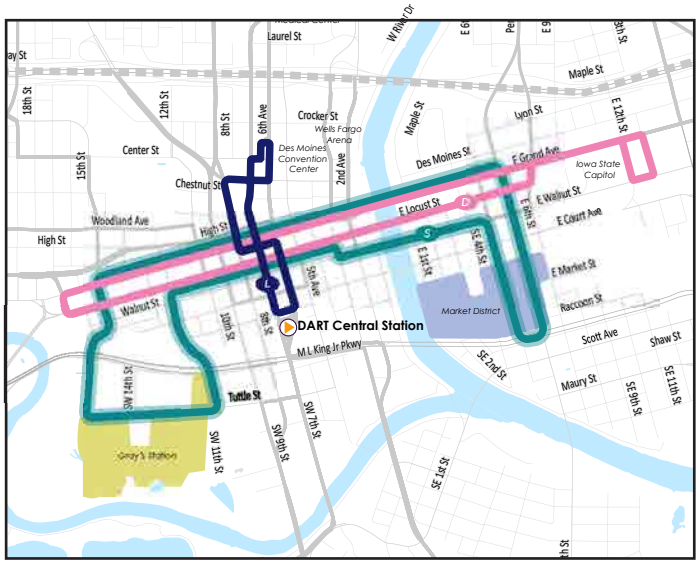
Future Growth Areas

DART continues to monitor future opportunities to serve new markets and communities, including how DART might serve new member cities should they opt to join the system.

Emerging Downtown Neighborhoods

Des Moines is experiencing rapid growth in the residential population within and adjacent to the downtown area, particularly the Market District and Gray's Station neighborhoods where major new residential developments have been completed in recent years and many more are planned. These emerging neighborhoods feature high-density, mixed use, and walkable environments that could be highly supportive of transit use. They also represent a different type of transit demand than other outlying neighborhoods, in which transit to downtown must be competitive with walking rather than driving, and where passengers are more likely to use transit for downtown shopping and recreation in addition to employment and are less likely to transfer to other routes.

The most appropriate type of service for these neighborhoods is high-frequency shuttle service that connects directly to downtown destinations rather than through DART Central Station, similar to the D-Line. This new route is shown in the map to the right as the "S-Line". Since the S-Line would cover much of the same route as the D-Line, the cost of this new service could be partially offset by reducing frequencies on the D-Line, while overall service levels on Grand, Locust, and Walnut would remain the same or increase.



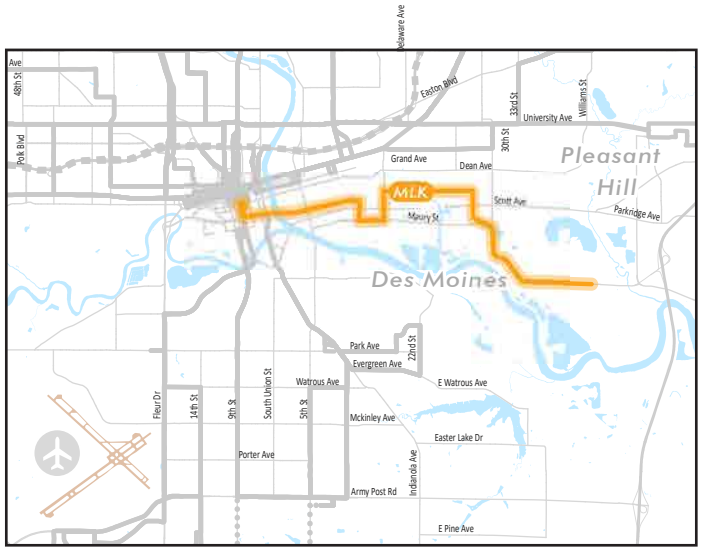
Map: Emerging Downtown Service Options

To further support transportation choice in these emerging developments, DART and the City of Des Moines should work with developers to co-locate transit with complementary micromobility options such as bikeshare, scooter-share, and carshare.

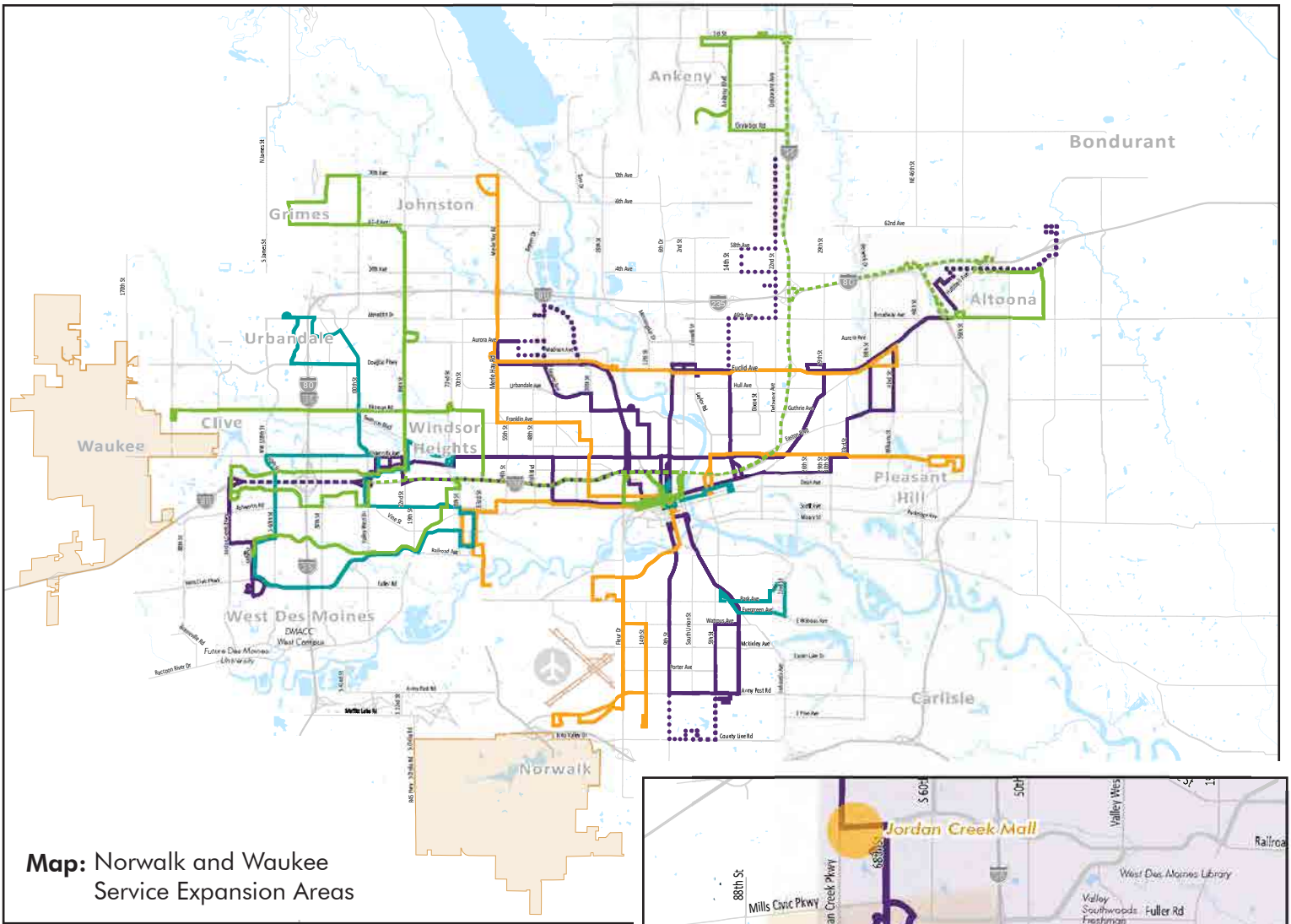
In the future, DART will continue to evaluate new service options in Downtown Des Moines, including expanding residential area service and special event service to the north side of downtown.

East MLK Corridor

DART has received occasional requests to introduce service along E. MLK Jr. Parkway corridor in Des Moines, where there are a large number of manufacturing and other light industrial employers. DART has previously considered introducing new local service along this corridor operating out of DART Central Station (see map to the right). Service should be tailored to the needs of shift workers, and DART will work directly with employers to determine the appropriate days and hours of service. DART will seek financial support from employers to offset the cost of new service.



Map: Service Expansion Area along E. MLK Jr. Pwky

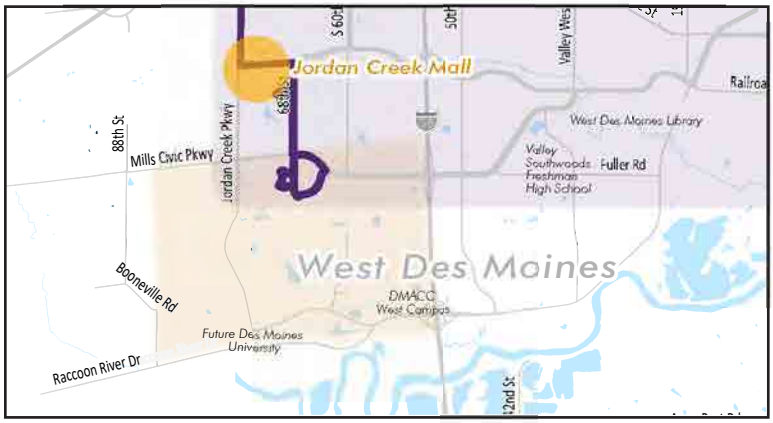


Map: Norwalk and Waukee Service Expansion Areas

Norwalk and Waukee

Should these communities opt to join the DART system, DART should develop services to meet the needs of their residents as well as employees who commute there for work.

- In Waukee, DART would likely focus on the employment corridor along Hickman Road by extending the existing Route 92 west into Waukee. Rerouting the service to add a stop at Valley West Mall would expand mobility in and out of Waukee by providing convenient transfer opportunities without traveling to Downtown Des Moines.
- In Norwalk, DART would likely introduce Flex Connect or Microtransit service to Norwalk, with opportunities to transfer to fixed route service along Fleur Drive or at Southridge Mall, offering frequent opportunities to reach Downtown Des Moines and the rest of the DART network. DART would also work with employers to identify potential reverse commute destinations in Norwalk for potential extension of Route 8 via Fleur Drive.



Map: Southwestern West Des Moines Service Expansion Area

Southwestern West Des Moines

This area is home to the DMACC West facility and the planned Des Moines University campus. These institutions bring new demand for transportation to the southwestern part of West Des Moines, which currently does not have DART service. DART will work with these destination campuses to understand the mobility needs of their employees and students – where they come from, time of day, and overall level of activity – with the goal of eventually expanding service. DART anticipates piloting additional microtransit or other MOD service to this area from a growing mobility hub at Jordan Creek Mall.