

dart **Forward** **2035**

Transit Services Plan DART Forward 2035 Executive Summary

SEPTEMBER 2011

PREPARED BY: **TMD**
TRANSPORTATION MANAGEMENT & DESIGN, INC.





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Purpose and Significance

Building a better public transit system for Greater Des Moines has long been a top priority for the region's leaders, and over the past five years they have taken many definitive steps in that direction. In 2006 they created the Des Moines Area Regional Transit Authority, the state's first regional transit authority, out of the former Metropolitan Transit Authority. In 2008, through much negotiation, they adopted a regionally equitable funding formula that made possible the expansion of regional transit service. And in 2010, they kicked off a year-long planning effort to finally give what so many in the region had long been asking for – a blueprint for building that better public transit system.

The *DART Forward 2035* plan is that blueprint.

Not only does the *DART Forward 2035* plan provide a long-range vision for what could be, but it offers the step-by-step directions for delivering the system that the market demands, starting in 2012, as well as a budgeting plan to put DART on a financially sustainable path. At the heart of the plan are service recommendations establishing a new transit network. More than a series of independent routes, the intertwining network will serve thousands more residents by going more places, more often, with quicker travel times. Key elements of the new transit network include:

- Add service in growth areas;
- Invest in successful existing service;
- Provide faster travel with less wait time;
- Offer more transfer points throughout the region, inside and outside downtown;
- Strengthen the core network of services;
- 'Connect the dots' with new crosstown services.

The *DART Forward 2035* plan is the work not only of DART and the consulting team with Transportation Management & Design, Inc., but of the people. The combination of data-driven market research and an extensive public outreach campaign can be seen in the results: ***A blueprint for building a transit network that is not only financially sustainable, but one that will be used by thousands more people.*** Simply put, the plan puts DART in business not so much of transportation, but of connections. By connecting communities, we connect opportunities:

- **Opportunities for Residents**

The new transit network will provide residents with more connections to jobs, as well as shopping, dining and entertainment activities.

- **Opportunities for a Healthier Environment**

Studies show that people who live in communities with high-quality public transportation drive

less, exercise more, live longer and are generally healthier than residents in communities that lack quality public transit.

- **Opportunities for Economic Development**

The expansion of public transit broadens the available workforce for the region's employers and small businesses and makes the region more attractive to site selectors.

- **Opportunities to Drive Our National Reputation**

Investing in public transit improves and protects the region's high quality of life by decongesting highways and offering affordable alternatives to driving.

The *DART Forward 2035* recommendations will occur across three defined phases with a future conceptual vision for 2035.

- **Near Term (1-3 years):**

Focuses service on key corridors with simplified routing to create increased service frequency, providing more choices for consumers. Creates faster connections to both downtown and suburban jobs. Promotes improved community circulation while rationalizing or discontinuing low-performing services.

- **Mid-Term (4-6 years):**

Builds on short-term success with further network development including improved frequencies in the urban core. Implements new crosstown service in urban core and western suburbs, allowing for non-downtown transfer opportunities. Adds additional peak period express trips.

- **Long-Term (7-10 years):**

With network structure largely established, improves frequencies and expands night and weekend service on selected routes. Adds additional peak and off-peak period express trips.

- **2035 Concepts:**

The *DART Forward 2035* recommendations propose additional express routes, community circulators, and a series of corridors for enhanced service where development and travel-demand patterns meet a minimum threshold to support productive transit.

Plan Approach

A critical element of the *DART Forward 2035* plan was the development of a planning context for the Greater Des Moines region. A review of existing and future market conditions in combination with analysis of existing DART service performance and public feedback informed the creation of a plan framework which guided development of the recommendations.

Data Driven Plan

In order to assess and evaluate current market conditions and DART's existing services, TMD collected a wide variety of data about the Greater Des Moines metropolitan area and the DART system. Data and reports reviewed included 2000 census data, population and employment projections from Des Moines Area Metropolitan Planning Organization (DMAMPO), travel demand data from Iowa Department of Transportation (IDOT), system-wide ridership counts (collected in Fall 2010), on-board survey (collected in Fall 2010), as well as previous studies provided by DART.

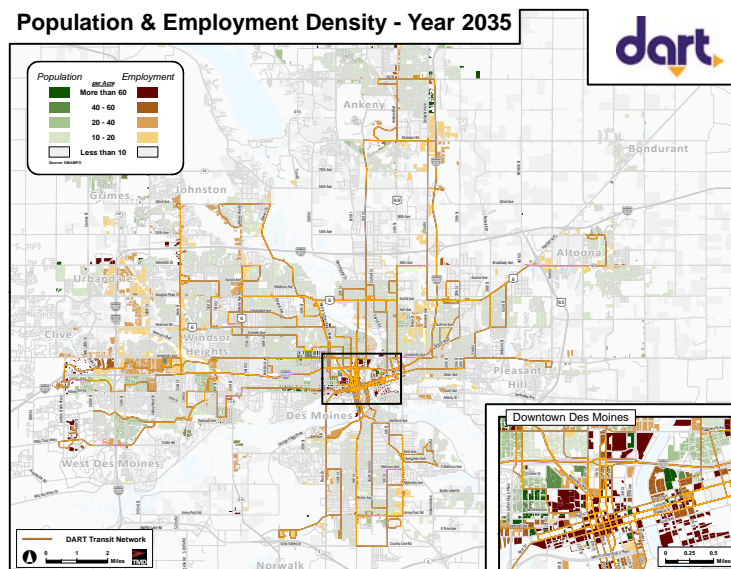
Market

An assessment of the market for transit in Greater Des Moines provided a market context for the DART system in addition to identifying opportunities for DART to increase system ridership. Understanding of the new regional development paradigm and emerging regional growth patterns will better position DART to capture additional ridership potential for transit service.

Key findings of the Market Assessment include:

- **Growth**

The Des Moines metro area is projected to grow significantly in the 2010 – 2035 time frame in terms of population and employment. The area benefits from a vibrant downtown, growing employment centers and significant infrastructure investments. However, a majority of the DART service area contains development patterns and population or employment densities that pose a significant challenge to the development of a sustainable transit network.



Map 1 – 2035 Population and Employment

- **Challenge of Auto-Centricity and Low Density**

The existing pattern of low-density, auto-centric development along non-linear corridors is projected to continue through the 2035 period, which presents a long-term challenge to the development of traditional transit service throughout the DART service area. These development patterns, paired with commute-focused downtown transit trips and an oversaturation of downtown parking, indicate limited transit opportunities both presently and in the future.

- **Transit and Land Use**

Transit planning must be woven into land use planning and community development. Sustainable land use transit development strategies should be adopted and implemented to help reorient current land uses while ensuring future developments more greatly focus around transit.

- **Expanding the Market**

The greatest additional ridership potential in the DART service area is on linear transit-supportive corridors with currently productive transit service. A secondary source of potential ridership demand exists in commute related demand to key employment centers in the region. Addressing specific ridership potential in DART's service area will require market-tailored transit solutions.



Service

The Service Evaluation provided comprehensive analysis of the DART network prior to February 2011, with separate analyses of fixed-route and on-call services, in order to identify opportunities to increase ridership and revenue for DART, while preparing for expanded service options should new opportunities arise.

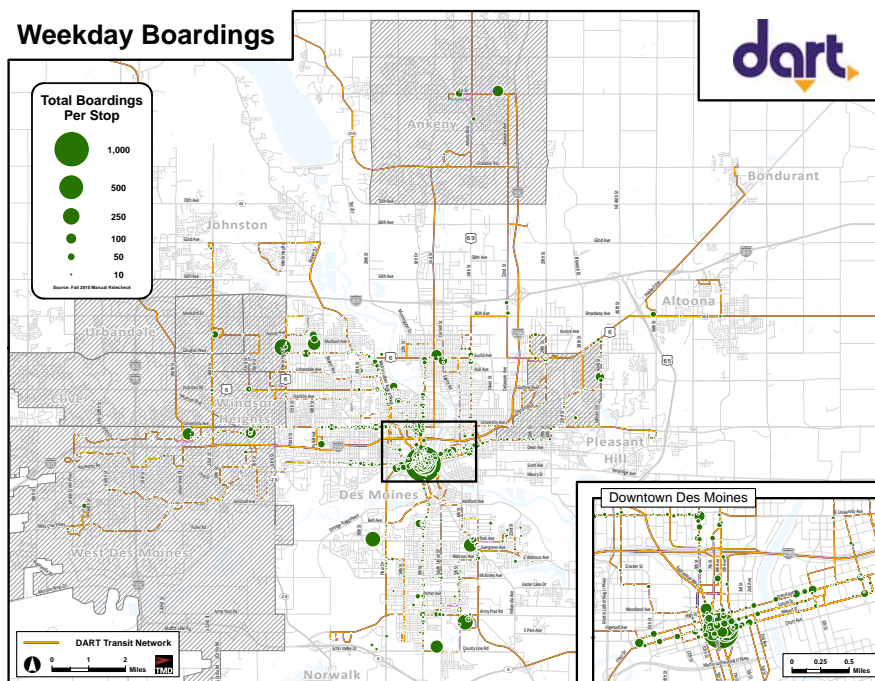
Key findings of the Service Evaluation include:

- **Existing System**

As land use, development, and employment patterns have shifted in the region, much of the DART system has remained relatively unchanged. Local and shuttle bus service is largely focused on key destinations within the service area including downtown Des Moines. Express service is also focused on destinations, providing peak-period, limited-stop service to major employment centers throughout the service area. On-call service supports the fixed-route network, by providing non-fixed-route, point-deviation, and route-deviation service to suburban communities with limited demand for transit.

- **Existing Ridership**

Local routes carry a majority of system-wide ridership, with more than 66 percent of boarding activity concentrated in downtown and central Des Moines. Midday ridership is equivalent to only 68 percent of the combined peak period ridership. Service should be closely examined and changes made to attract new midday ridership.



Map 2 – Weekday Ridership

- **Productivity**

Overall system-wide average productivity is moderate. The most productive routes and route segments in the system should become the focus of future investment. Service investment should focus on key corridors and activity centers with sufficient intensity to support productive transit services. Investment in key corridors will expand productivity and revenue generation while benefiting a majority of customers.

- **Service Levels and Delivery**

DART's service delivery suffers from complex routing, infrequent service on a majority of trips, and low schedule reliability. Simplification, increased "spontaneous use" frequencies, and faster, more consistent travel time are key areas of focus moving forward.

- **Transfers**

Most transfer activity occurs in downtown, with a strong south to northwest movement pattern. Through-riders make up a minority of DART customers downtown, suggesting that the separate route segments on either side of downtown largely operate as independent routes.

- **Financial**

With the system farebox recovery ratio at 22 percent, DART should continue to work to increase financial sustainability through rationalizing low-performing routes and route segments.

- **On-Calls**

Local On-Calls, as a group, carry more passengers than Regional On-Calls. Ankeny, Urbandale Zone 3, and Urbandale Zone 4 represent the three strongest routes in terms of ridership and account for 40 percent of total On-Call ridership. Targeting investment toward the top performing On-Calls will provide the maximum benefit to the largest number of riders. Overall, Regional On-Calls are far more costly, indicating that they may be traveling longer distances and attracting much lower ridership. Routes that demonstrate poor financial sustainability must be closely evaluated, while balancing the need to provide residents access to the transit system.

Outreach

Public participation played a key role in development and review of the *DART Forward 2035* plan. DART received comments and suggestions from nearly 1,500 citizens during two rounds of public meetings held throughout the metro area and through an online survey. The April 2011 public meetings, in conjunction with the online survey, collected more than 1,300 comments. The July 2011 public meetings generated attendance in excess of 200 individuals and collected more than 160 comments. Input from elected officials and business leaders was also incorporated into the recommendations.

Initial Outreach (April 2011)

An initial round of outreach developed three key investment strategies which informed the development of the service recommendations: Serve more places, make travel quicker, and increase frequency. Additionally, the first round of outreach identified the important role of the *DART Forward 2035* plan to support economic development, a healthier environment, and opportunities for regional connections.

Recommendations Outreach (July 2011)

An additional seven public outreach meetings were held region-wide in July 2011. The outreach shared details of the recommendations and collected feedback. Most participants of the public input sessions received the *DART Forward 2035* plan positively. There was general support for the plan vision and key improvements including more frequent service, faster and more direct service, non-downtown focused service, and service to new areas. Customers who would be potentially negatively impacted by proposed changes showed concern. Participants frequently inquired as to the timing of the proposed changes, suggesting that DART should take steps to carefully and regularly communicate with the public as changes occur.

Guiding Principles

The guiding principles synthesize analysis of market conditions and service performance together with the input of the community and stakeholder outreach process. The following adopted principles guided development of the plan recommendations:

Build a Market-Based Network

- **Match Services to Markets**
Service levels should be consistent with the market demand for transit service. Additionally, transit needs to be competitive with other travel modes.
- **Enhance Service Along Key Corridors**
Investment in additional frequency should occur along transit-conducive corridors. Linear corridors with a mix of uses support productive transit and advance sustainable community goals.
- **Introduce/Expand Service**
New Rapid service on University and Ingersoll Avenues between 42nd Street and downtown. Expanded express network with opportunities for reverse commute travel. New crosstown services to develop network functionally.

- **Grow Ridership**

Market-focused services with appropriate frequencies will attract new riders and increase patronage by current customers.

Refocus Service Network

- **Simplify Route Structure**

Streamline and consolidate existing routes into a more efficient and effective network. Increased simplicity will make the system easier to understand and use.

- **Focus Service Investment**

Investment should occur along key corridors and regional activity centers.

- **Build a Multi-hub System**

Link customers to DART's family of services (fixed-route, on-calls, shuttles, express, vanpool). Leverage capital investment to improve customer experience.

Enhance Customer Experience

- **Create a Faster Travel Experience**

Create spontaneous-use frequencies (15 minutes or better) and streamline routes along key corridors to reduce customer wait times.

- **Leverage Technology**

Utilize bus monitoring to communicate real-time service information to customers. Implement delay-reduction strategies.

Build Financial Sustainability

- **Use Resources Effectively**

Establish performance and productivity standards. Design efficiency into route network. Focus resources where transit is most competitive.

- **Build Advocacy**

Encourage increased investment in public mobility and development of sustainable transit communities.

- **Grow Ridership**

Additional ridership increases farebox revenues.

- **Restructure On-Call Services**

2020 Recommendations

The *DART Forward 2035* recommendations through year 2020 put forward a clear vision for creating a regional transit system in the Greater Des Moines area. The improvements will allow DART to serve a greater number of customers by going more places, more often, with quicker travel times.

Phased Approach

The 2020 Recommendations are phased across a 10-year timeframe to allow for a measured and manageable implementation process. The phasing of the recommendations was determined by evaluating and weighing the following criteria/considerations:

- Customer benefits and impacts
- Consistency with framework and guiding principles
- Development of appropriate market conditions
- Consistency with phasing of related recommendations

Key Elements

- **Increased Frequencies**

Higher-frequency service provides the customer with more choices and allows customers to use the DART system with less reliance on schedules. Spontaneous-use frequencies (15 minutes or better) generate additional ridership and create a faster travel experience for customers.

- **Rapid**

High-frequency, high-capacity, and high-quality service uses transit priority measures to speed travel times. Stop spacing is typically greater than local bus with enhanced service characteristics intended to emulate the passenger experience of arterial rail transit.

- **Crosstown**

Conventional bus service, operates on a timetable following a pre-set route with identified stops that typically operate as part of a wider network of integrated routes. Crosstown routes do not travel through downtown, creating opportunities for non-downtown transfers.

- **Flex Routes**

Flex routes follow a specific alignment arriving at time points on a specified schedule. Passengers may board the service at stops along the alignment without a prearranged appointment or may request a pick-up/drop-off within a specified distance of the route alignment. Transitioning to flex routes will increase service capacity, availability, and predictability.

Year One

Year one of *DART Forward 2035* begins the process of realigning transit service levels to more closely match market conditions. The first year of *DART Forward 2035* includes significant restructuring of route alignments, targeted frequency improvements, and discontinuation of poorly performing services.

Year Two

After the significant changes that occur in year one, the next year focuses on additional targeted frequency and service improvements while allowing customers to adjust to the realigned system.

Year Three

The third year of the *DART Forward 2035* plan completes the realignment and investment in express services and establishes the University/Ingersoll loop as an all-day, spontaneous-use, transit-oriented corridor.

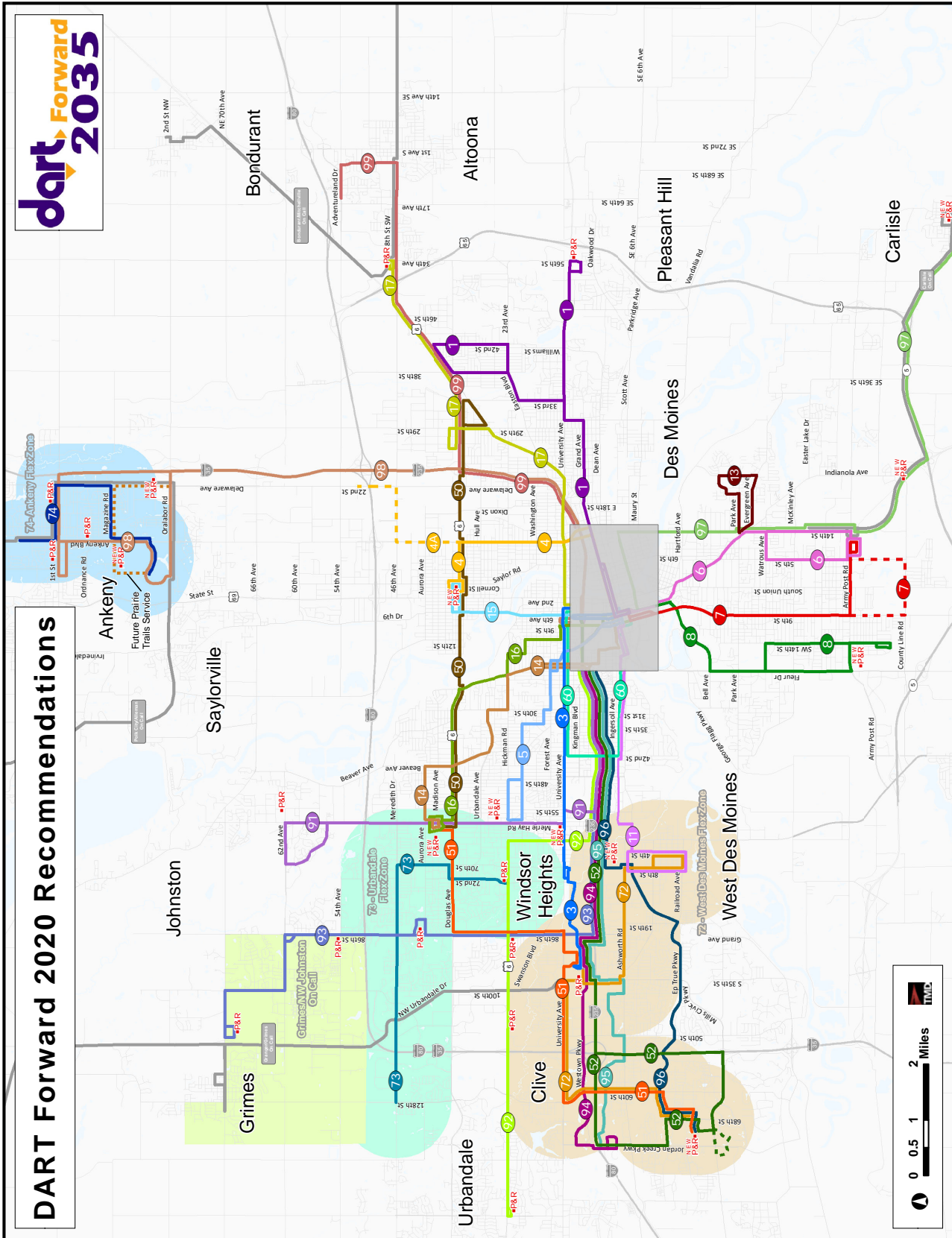
Mid-Term

Recommendations in the mid-term phase (years 4-6) build on successes of the near term with further network development and investment. The urban core will experience improved frequencies, new crosstown service in urban core and western suburbs will begin operation, and additional peak period express trips will be added.

Long-Term

The recommendations in the long-term phase (years 7-10) strengthen the functionality of the established network by investing in additional spontaneous-use frequencies and adding additional express trips. Prior to implementation of long-term recommendations, review should occur based on evolution of the planning context and market conditions of the region.

For additional detail on the phasing of recommendations please see tables and maps in the appendix.



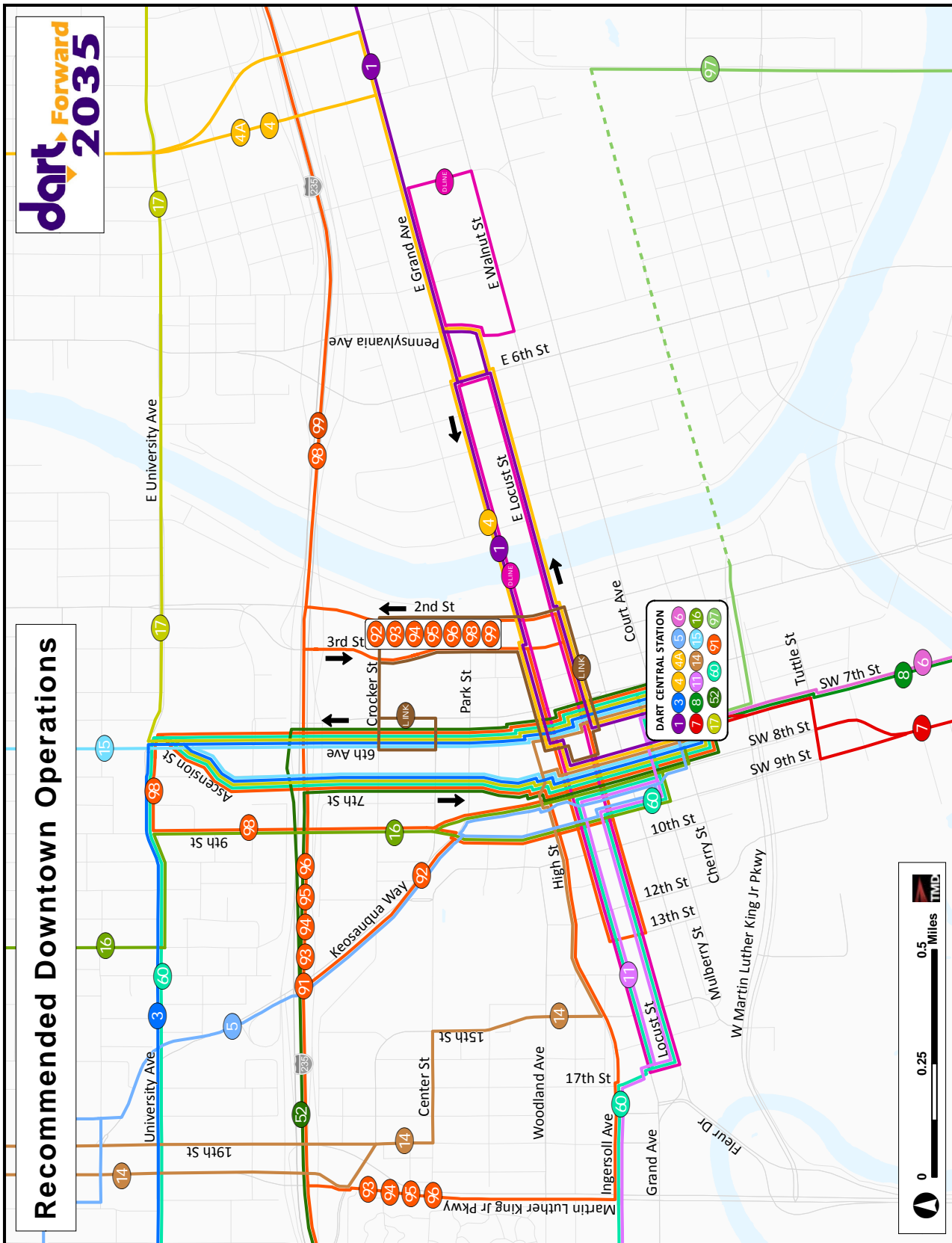
Map 3 – DART Forward 2020 Recommendations

Downtown Operations Plan

A downtown-operations plan ensures coordination between all DART services serving downtown. The plan is an important element of the 2020 Recommendations to ensure consistent and efficient downtown circulation.

The downtown-operations plan accommodates the completion of DART Central Station in 2012 by realigning downtown route circulation. Routes destined for DART Central Station will enter downtown from a variety of streets and begin consolidating onto key downtown one-way street pairs. Eventually, all approaching routes will flow into DART Central Station, south of Cherry Street between 6th Avenue and 7th Street.





Map 4 – Recommended Downtown Operations

Local Routes

Local operations within downtown will generally be consolidated into pairs of one-way streets logically consistent with the direction the routes enter downtown.

Express Routes

Express services in downtown have been realigned to prioritize directness of travel to key stops while minimizing unnecessary circulation. "Unlimited Access" usage data formed the base for the routing decisions for specific routes to provide the majority of customers the most direct travel experience to major employers. Most expresses do not directly interface with DART Central Station to limit time spent in downtown and speed travel.

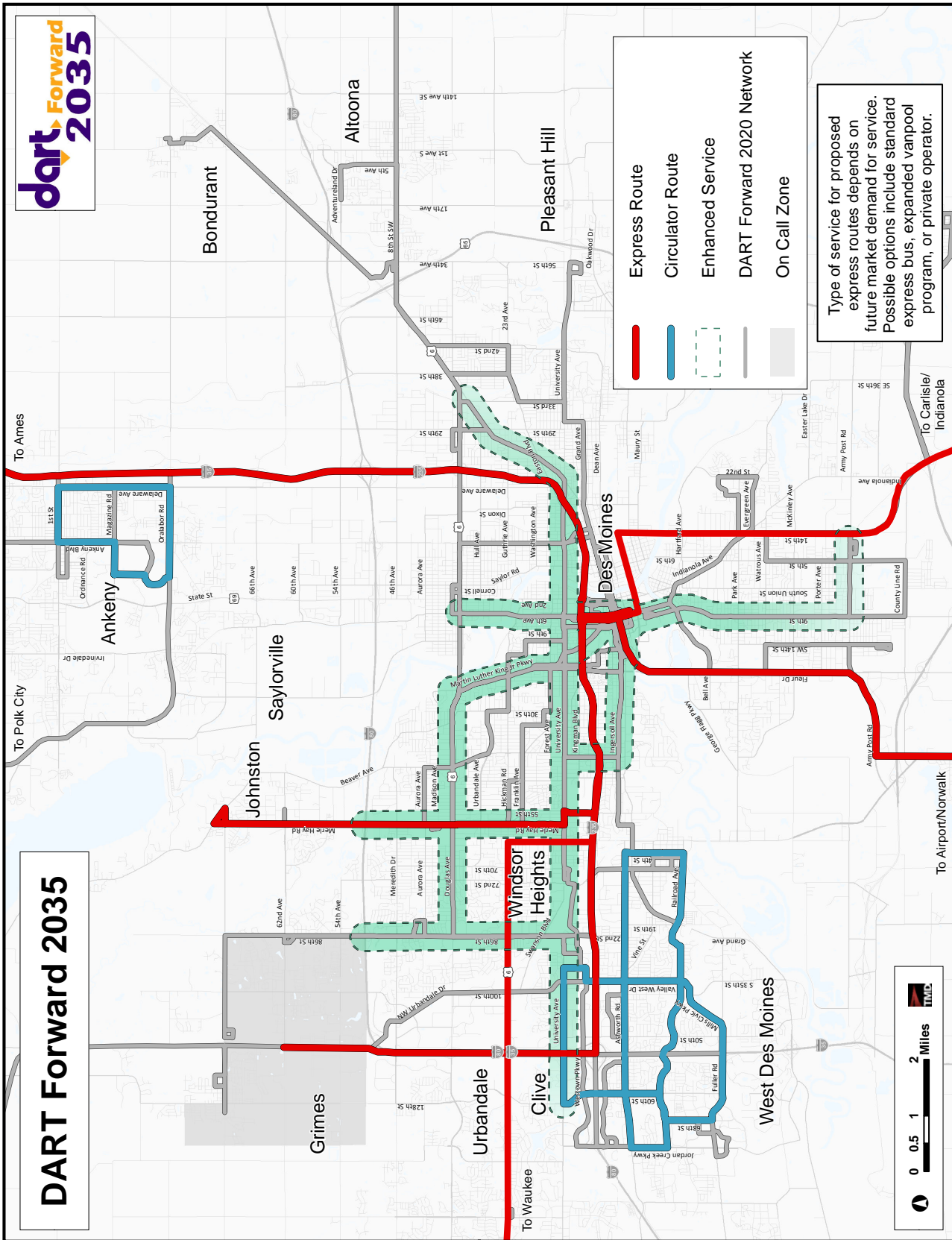
LINK and D-Line Operations

Both the LINK and D-Line alignments provide frequent and targeted downtown circulation. The D-Line will continue operations on Grand Avenue and Locust Street, with extended service to the State Capitol all day, providing connections to and from the network. The LINK will be reconfigured to better connect Center Street Parking with the Iowa Events Center, Wells Fargo Arena and downtown hotels.

2035 Recommendations

The 2035 Recommendations are long-range planning concepts that build on the 2020 network. As growth and development warrant, additional investment in the established network should occur through additional span and service frequency. Implementation of additional services beyond those included in the 2020 Recommendations should occur where development and travel demand patterns meet a minimum threshold to support productive transit.

The *DART Forward 2035* plan proposes additional express routes, community circulators, and a series of corridors for enhanced service where development and travel demand patterns meet a minimum threshold to support productive transit. Given the long-range nature of the concepts, periodic review and adjustment of the concept is recommended to ensure the concepts continue to accommodate anticipated regional growth.



Map 5 – DART Forward 2035

Implementation

Operating Plan Metrics

Cost

Annual Impacts	Short-Term Years 1 to 3	Mid-Term Years 4 to 6	Long-Term Years 7 to 10
Incremental Service Hours	47,080	61,022	20,585
Incremental Service Miles	488,819	777,637	212,529
Total Incremental Service Cost	\$3,115,336	\$4,944,623	\$1,659,666

Figure 1 – Incremental Resources and Costs

Ridership

Annual Summary with System Level Growth Factor	Current	Short-Term FY2015	Mid-Term FY2018	Long-Term FY2022
Weekday		4,628,000	5,353,000	6,073,000
Saturday		198,000	287,000	350,000
Sunday		173,000	260,000	331,000
Total	3,742,000	4,997,000	5,896,000	6,745,000
Percentage Change	–	33.5%	18.0%	14.4%

Figure 2 – Ridership Projections (estimated)

Levy Implications

The exact levy for each year of the plan will be determined each year as part of DART’s annual budget process. Besides the service-level increases recommended as part of the *DART Forward 2035* plan, the levy rate will take into account losses in revenue to maintain existing operations, loss in revenue due to declining taxable property valuations, as well as increasing funds for DART’s capital program.

Levy Rate Increase for Year 1 to Year 5 of Plan:

- Year 1 – \$0.10 to \$0.17 per \$1,000 of taxable valuation
- Year 2 – \$0.08 to \$0.12 per \$1,000 of taxable valuation
- Year 3 – \$0.08 to \$0.12 per \$1,000 of taxable valuation
- Year 4 – \$0.08 to \$0.12 per \$1,000 of taxable valuation
- Year 5 – \$0.08 to \$0.12 per \$1,000 of taxable valuation

The levy rate impact beyond the first five years of the plan will depend on growth in taxable property valuation within the region; this will be revisited within the first two years of implementation of the plan to determine strategies moving forward.

USES OF TAX LEVY INCREASE

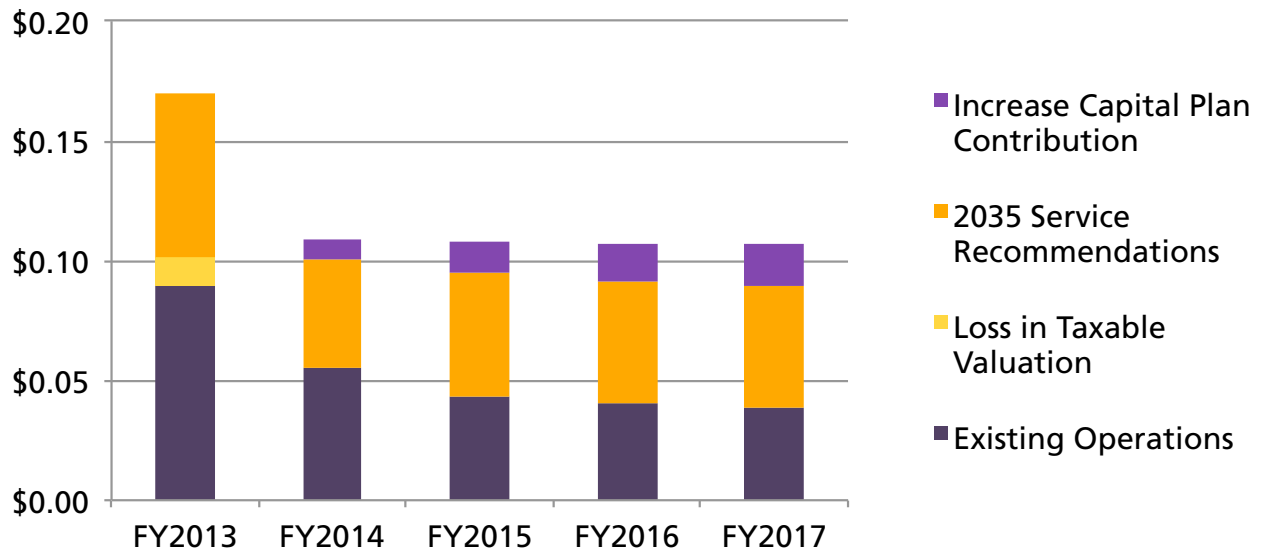


Figure 3 – Uses of Tax Levy Increase

Performance Monitoring

In order to ensure continued progress toward the objectives and guiding principles of the *DART Forward 2035* plan, the implementation phase will require close and systematic monitoring of service performance and delivery. Service standards define a policy-level set of evaluation metrics which serve as a management tool to assess the efficiency, effectiveness, and quality of service delivered. Monitoring productivity and financial effectiveness supports DART’s objective of building long-term financial sustainability and a market-based network. Service standards define benchmarks to inform decision-making on existing and future services.

On a quarterly basis, both route-level and segment-level reporting should occur for all Key Performance Indicators. On an annual basis, as part of the annual service development process, additional evaluation and remedial actions are recommended for services not meeting or exceeding standards. At staff’s discretion, interim action may be taken at the time of quarterly reports.

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Appendix

List of Appendices

Year One Recommendation

DART Proposed Routes, Year 1

Year Two Recommendations

DART Proposed Routes, Year 2

Year Three Recommendations

DART Proposed Routes, Year 3

Mid-Term Recommendations

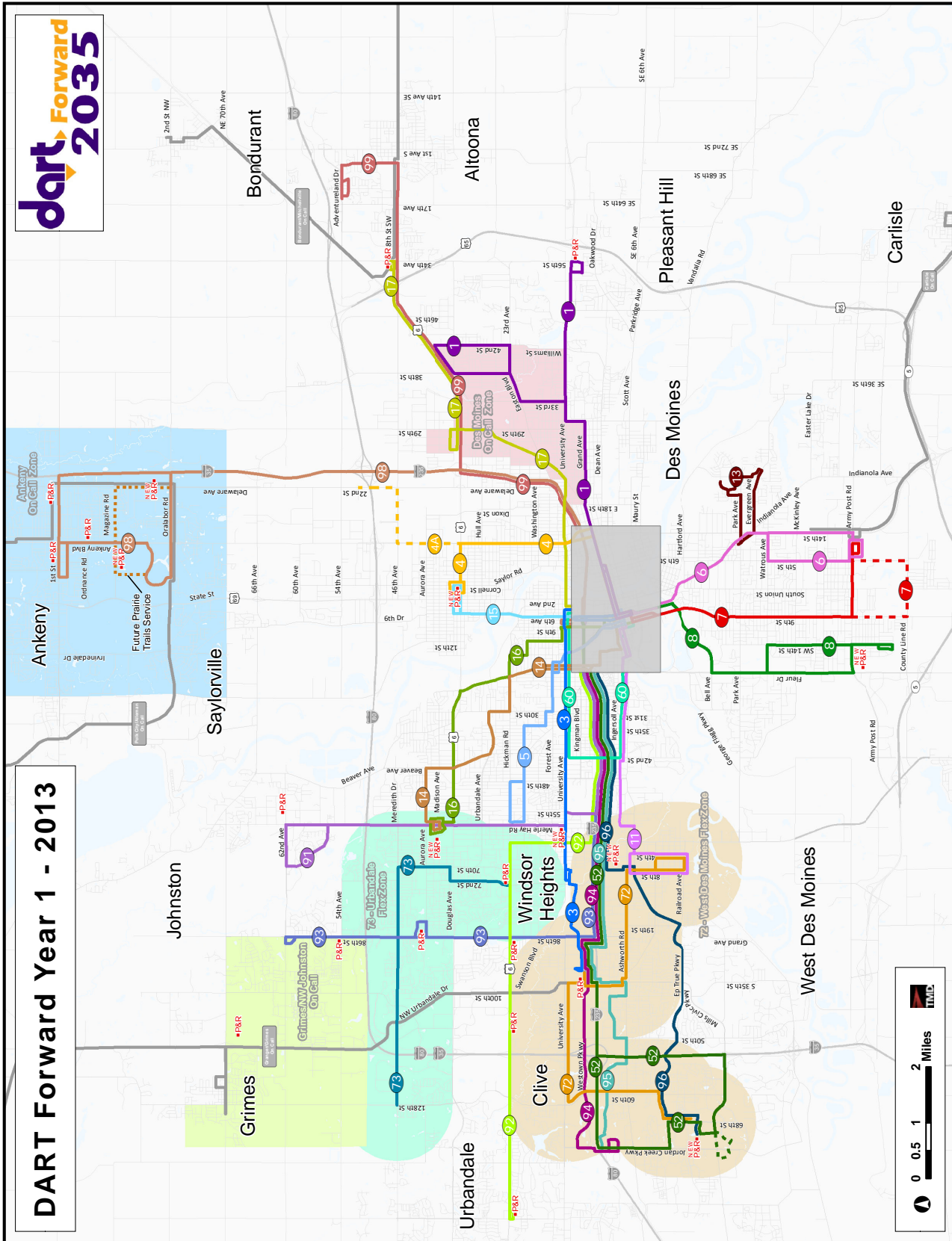
DART Proposed Routes, Mid-Term

Long-Term Recommendations

DART Proposed Routes, 2020

Year One Recommendations			
Existing Route	Proposed Route		Modification
1	1	Fairgrounds	Improve Frequency
3 North	15	Highland/Oak Park	Restructure Alignment
3 West	3	University	Restructure Alignment
3/11	60	University/Ingersoll	New Service
4 East	4	East 14th	Restructure Alignment
4 West	14	M.L. King/Beaver	Restructure Alignment
5	5	-	Restructure Alignment and Discontinue Midday Service
6 North	16	West 9th-Douglas	Restructure Alignment and Improve Frequency
6 South	6	Indianola-Lacona/SE 5th/SE 14th	Restructure Alignment and Improve Frequency
7 North	17	Hubbell/Altoona	Restructure Alignment
7 South	7	SW 9th-Fort Des Moines	Restructure Alignment
8 East	-	-	Discontinue Service
8 West	8	SW 14th/Fleur/Havens	Restructure Alignment and Discontinue Midday Service
11	11	Valley Junction-Ingersoll	Restructure Alignment and Discontinue Midday Service
71		-	Discontinue
42	42	D-Line	Extend Alignment
DMACC	-	-	Restructure Alignment
90	-	-	Discontinue
91	91	Johnston/Merle Hay Express	Restructure Alignment
92	92	Urbandale Express	Restructure Alignment and Improve Frequency
93	93	NW 86th/ Grimes Express	Restructure Alignment and Improve Frequency
96	96	E.P. True Express	Restructure Alignment and Improve Frequency
98	98	Ankeny Express	Restructure Alignment and Improve Frequency
Clive On Call	-	-	Discontinue (See Route 92)
Urbandale On Call	73	Urbandale Flex Route	Restructure Alignment and Improve Frequency
WDM On Call	72	West Des Moines Flex Route	Restructure Alignment and Improve Frequency
NEW	52	Downtown/West Valley/West Des Moines	New Service

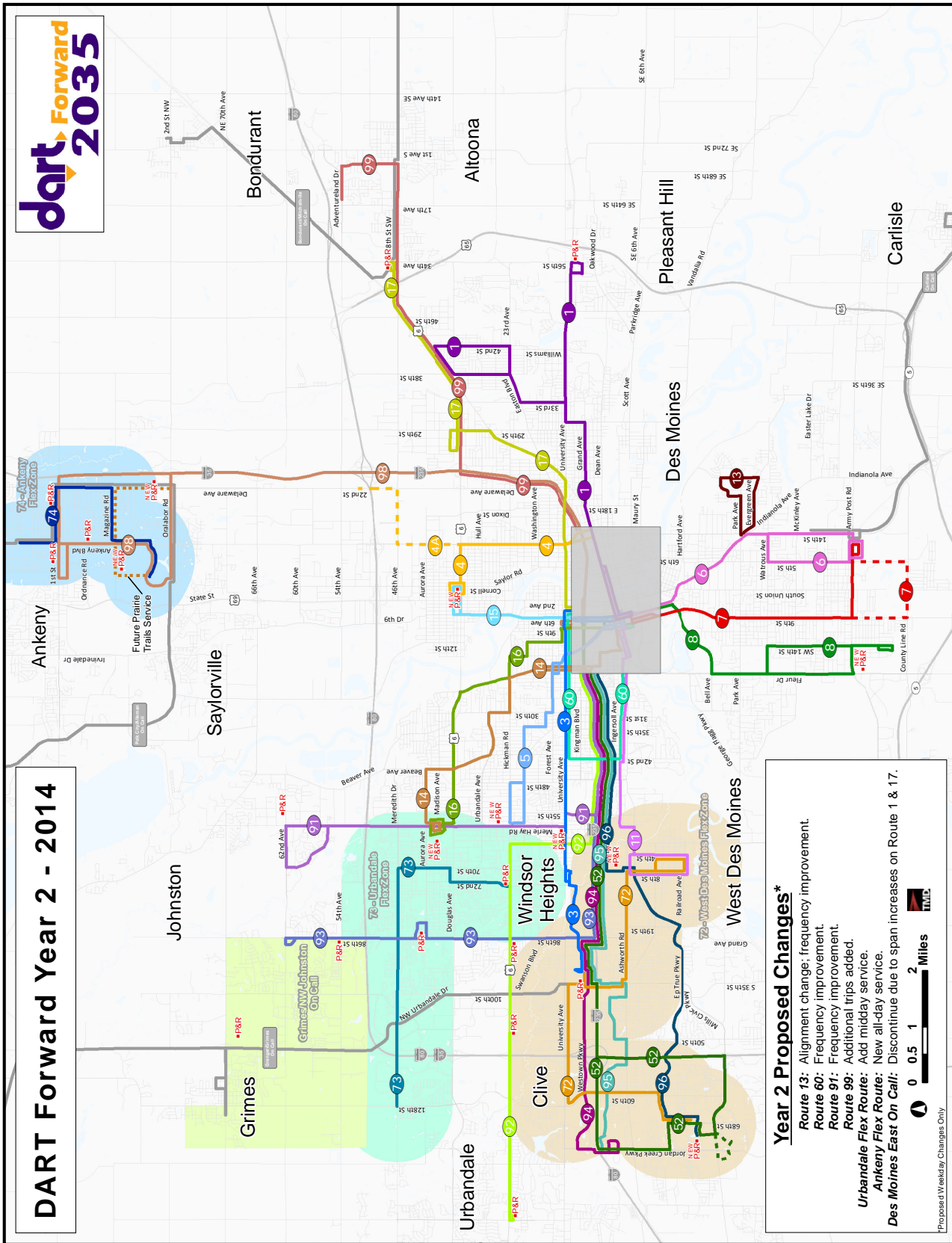
Figure 4 - Year One Recommendations



Map 6 - DART Proposed Routes, Year 1

Year Two Recommendations			
Existing Route	Proposed Route		Modification
3/11	60	University/Ingersoll	Improve Frequency
13	13	SE Park Ave Circulator	Restructure Alignment
91	91	Johnston/Merle Hay Express	Improve Frequency
99	99	Altoona Express	Restructure Alignment and Improve Frequency
Des Moines East On Call		Des Moines East On Call	Discontinue
Urbandale On Call	73	Urbandale Flex Route	Improve Frequency
Ankeny On Call	-	Ankeny On Call	Discontinue
NEW	74	Ankeny Flex Route	Restructure Alignment and Improve Frequency

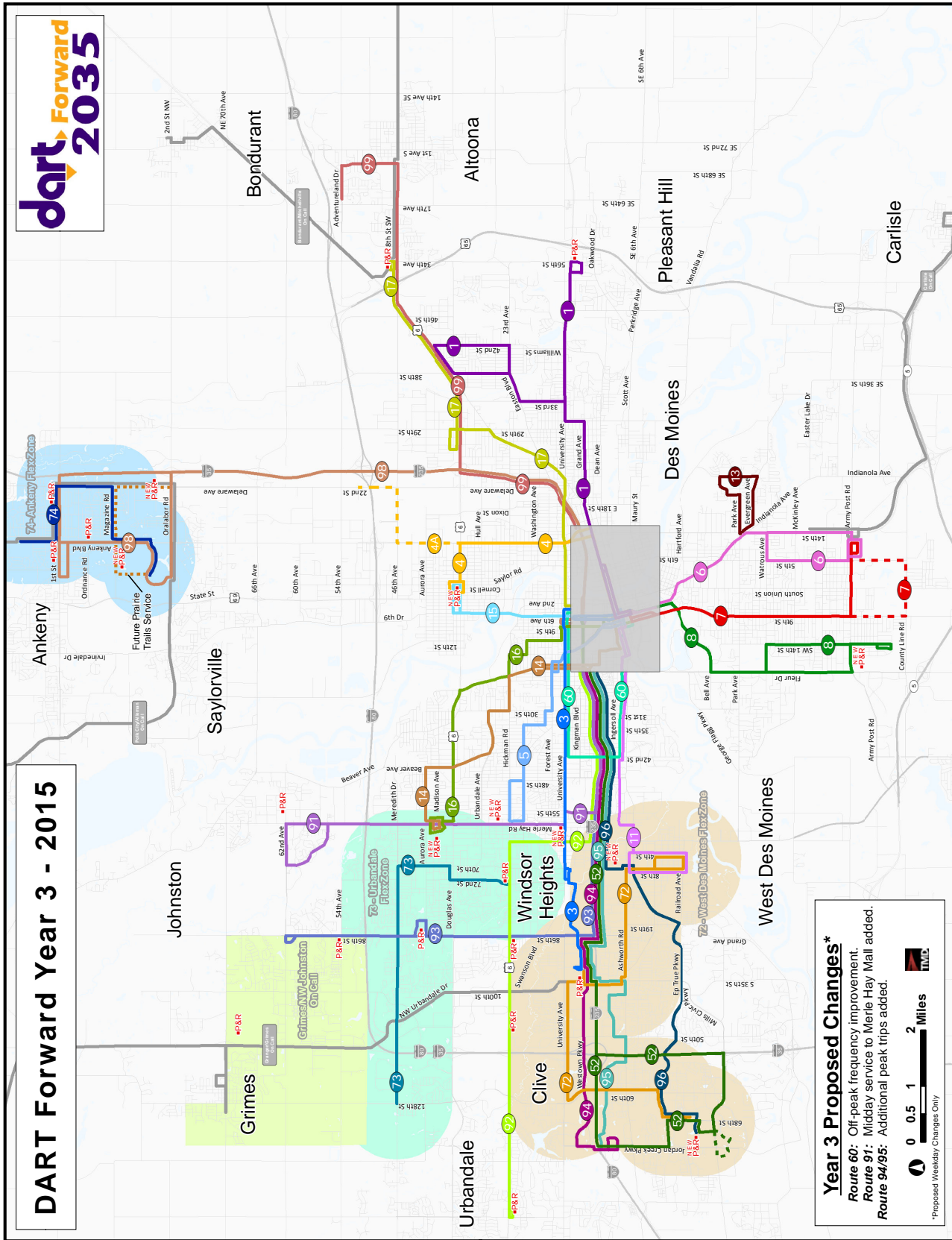
Figure 5 - Year Two Recommendations



Map 7 - DART Proposed Routes, Year 2

Year Three Recommendations			
Existing Route	Proposed Route		Modification
3/11	60	University/Ingersoll	Improve Frequency
94	94	Westown Express	Restructure Alignment and Improve Frequency
91	91	Johnston/Merle Hay Express	Add Midday Service
95	95	Vista Express	Restructure Alignment and Improve Frequency

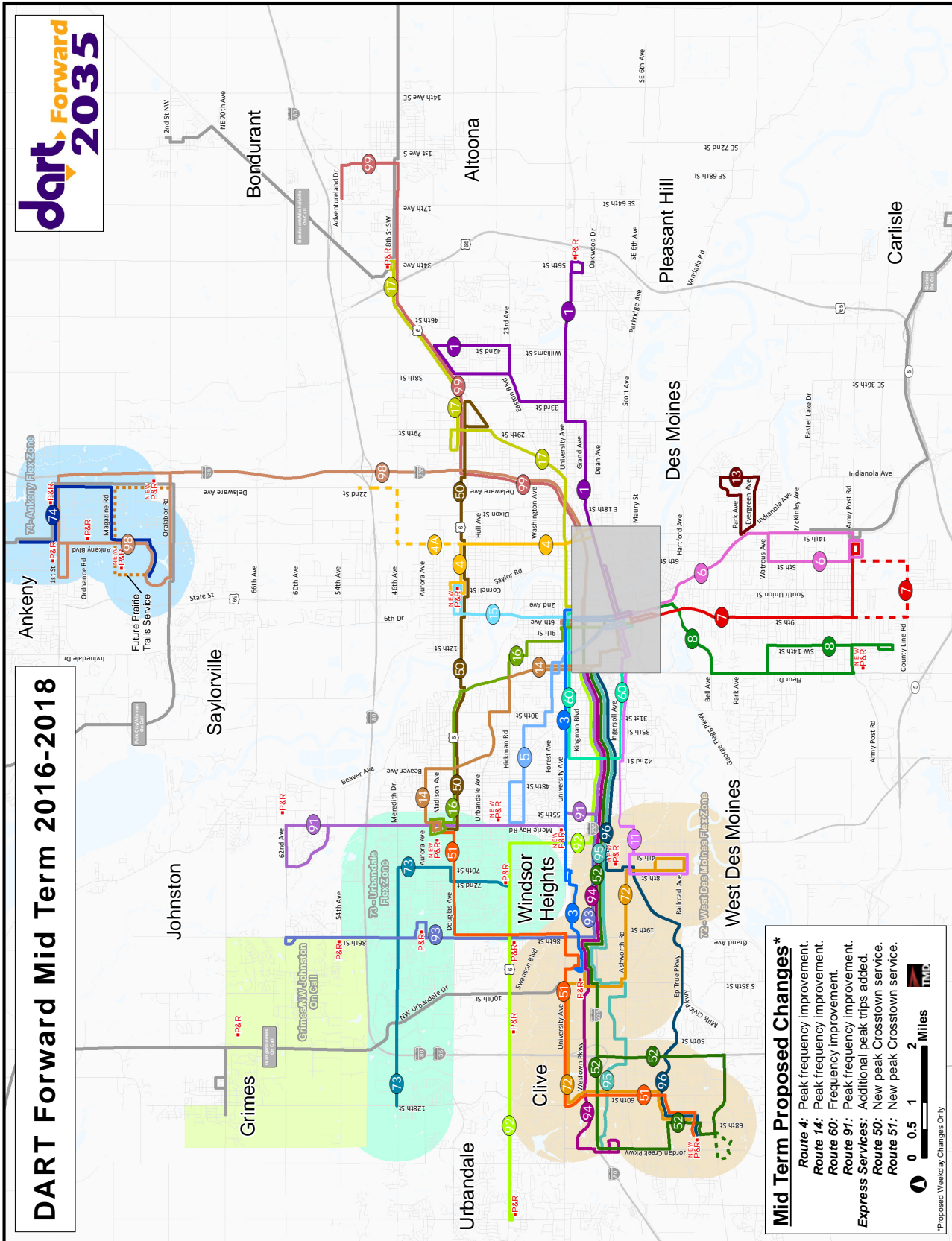
Figure 6 - Year Three Recommendations



Map 8 - DART Proposed Routes, Year 3

Mid-Term Recommendations			
Existing Route	Proposed Route		Modification
3/11	60	University/Ingersoll	Improve Frequency
4 East	4	East 14th	Improve Frequency
4 West	14	M.L. King/Beaver	Improve Frequency
91	91	Johnston/Merle Hay Express	Improve Frequency
92	92	Urbandale Express	Improve Frequency
93	93	NW 86th/ Grimes Express	Improve Frequency
94	94	Westown Express	Improve Frequency
95	95	Vista Express	Improve Frequency
96	96	E.P. True Express	Improve Frequency
98	98	Ankeny Express	Improve Frequency
99	99	Altoona Express	Improve Frequency
NEW	50	Douglas/Euclid Crosstown	New Service
NEW	51	Douglas/86th/ University Crosstown	New Service

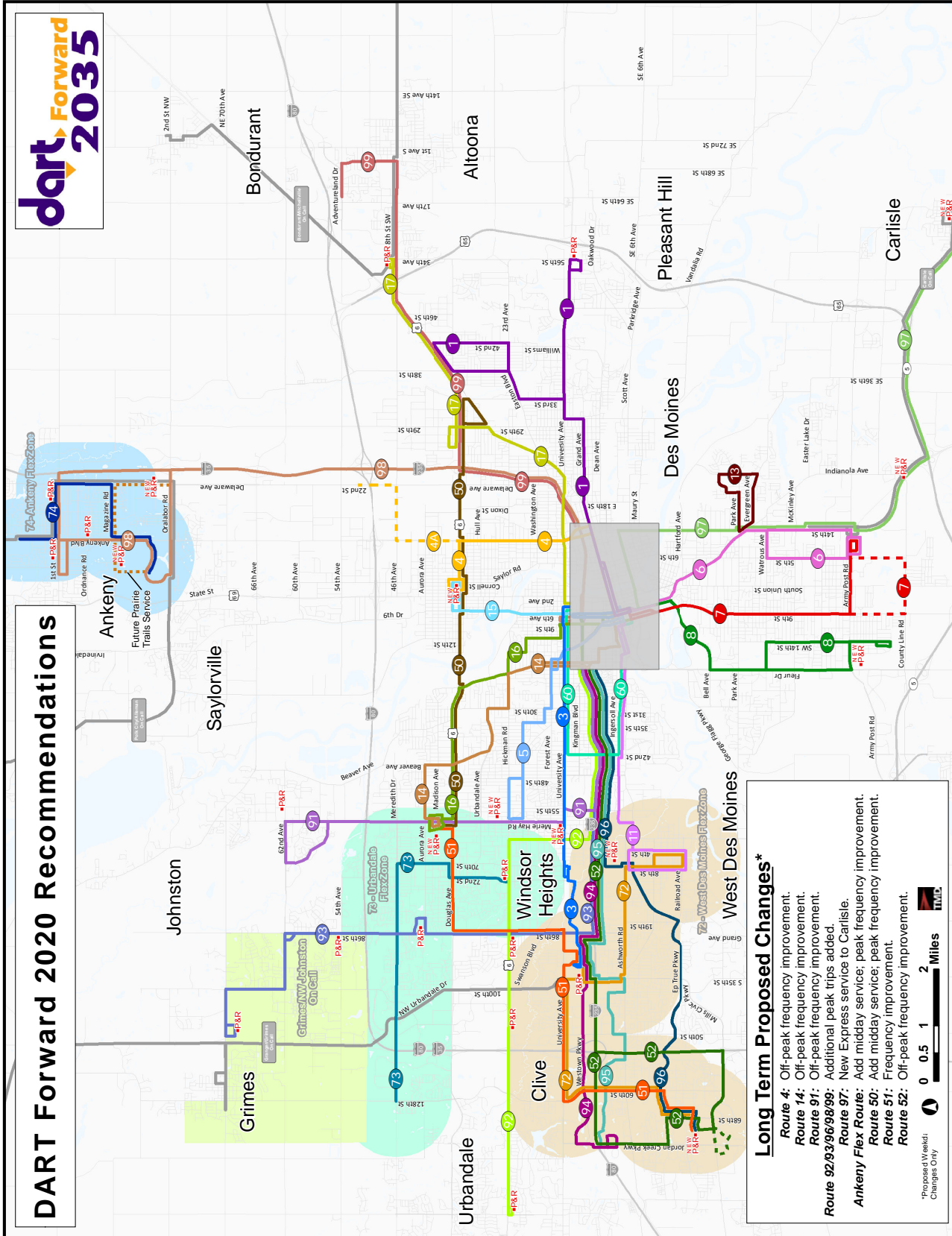
Figure 7 - Mid-Term Recommendations



Map 9 - DART Proposed Routes, Mid-Term

Long-Term Recommendations			
Existing Route	Proposed Route		Modification
4 East	4	East 14th	Improve Frequency
4 West	14	M.L. King/Beaver	Improve Frequency
91	91	Johnston/Merle Hay Express	Improve Frequency
92	92	Urbandale Express	Improve Frequency
93	93	NW 86th/ Grimes Express	Improve Frequency
96	96	E.P. True Express	Improve Frequency
NEW	97	Carlisle Express	New Service
98	98	Ankeny Express	Improve Frequency
99	99	Altoona Express	Improve Frequency
NEW	74	Ankeny Flex Route	Improve Frequency
NEW	50	Douglas/Euclid Crosstown	Improve Frequency
NEW	51	Douglas/86th/ University Crosstown	Improve Frequency
NEW	52	Downtown/West Valley/West Des Moines	Improve Midday Frequency

Figure 8 - Long-Term Recommendations



DART Forward 2020 Recommendations



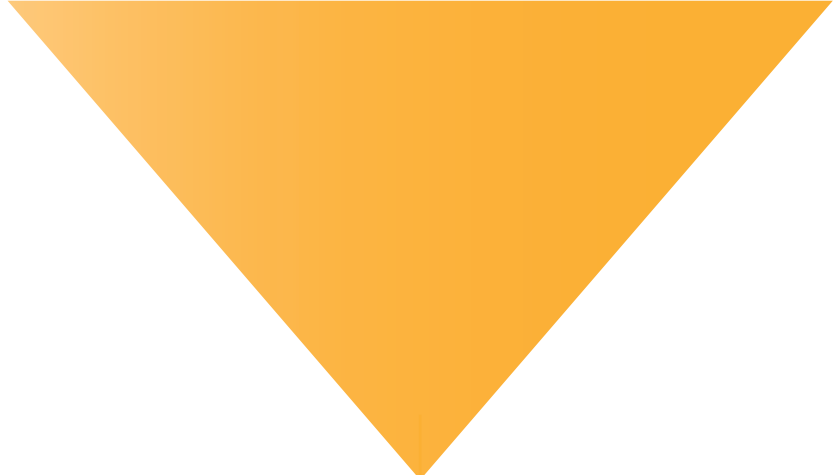
Long Term Proposed Changes*

- Route 4:** Off-peak frequency improvement.
- Route 14:** Off-peak frequency improvement.
- Route 91:** Off-peak frequency improvement.
- Route 92,93,96,98,99:** Additional peak trips added.
- Route 97:** New Express service to Carlisle.
- Ankeny Flex Route:** Add midday service; peak frequency improvement.
- Route 50:** Add midday service; peak frequency improvement.
- Route 51:** Frequency improvement.
- Route 52:** Off-peak frequency improvement.

*Proposed Weekday Changes Only



Map 10 - DART Proposed Routes, 2020



PREPARED BY:

