



Federal Fiscal Year 2020

Iowa Clean Air Attainment Program Pre-Applications

August 2018

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IOWA CLEAN AIR ATTAINMENT PROGRAM PRE-APPLICATION
FEDERAL FISCAL YEAR 2020

1. Contact Information

Primary Sponsor:	Ankeny	Date Submitted:	7/24/2018
Contact Person:	Mark Mueller	Phone Number:	515-963-3522
		Email Address:	mmueller@ankenyiowa.gov
Secondary Sponsor:	N/A		

2. Project Description

Project Title: West 1st Street Widening and Improvements - Phase 1

Project Description: Reconstruction of the existing four-lane street to a five-lane street with a center two-way left turn lane. Additional improvements include a public utility improvements, replacement of traffic signals at the NW Ash Drive/ SW Cherry St and School St intersections, a DART bus stop turn-out lane, and an 8 ft wide sidewalk/trail along the north side of the street.

Termini Description: Just east of SW Scott St to just east of SW Logan St

Estimated Project Cost: \$6,500,000 ICAAP Request \$1,000,000

Project Type: Bicycle or Pedestrian Facility, Transit-Related Improvement, Traffic Flow Improvement (Intersection, Signalization, Other)

3. Project Need

Explain how the project is consistent with the MPO's Congestion Management Process (CMP)? Specifically what performance measures from the CMP (page 12) does the project address?

The project's new lane configuration will improve peak hour level of service (reduced congestion) and improve the health, safety and well-being of residents (reduced crashes and vehicle emissions). The bus turn-out lane and sidewalk/trail will also enhance multimodal transportation options, potentially increasing transit usage, walking and biking.

Explain how the project is consistent with the MPO's Long-Range Transportation Plan Goals?

The project will optimize transportation infrastructure by providing improved traffic operations and safety. Multimodal transportation options will also be enhanced. The health, safety and well-being of residents will benefit from reduced crashes and vehicle emissions.

ICAAP funds are awarded to projects and programs with the highest potential for reducing transportation-related congestion and air pollution, thereby maintaining Iowa's clean air quality. Explain how your project address this purpose.

The addition of the two-way left turn lane will reduce congestion and pollutants caused by vehicle idling.

Additional information you would like to share:

None



**IOWA CLEAN AIR ATTAINMENT PROGRAM PRE-APPLICATION
FEDERAL FISCAL YEAR 2020**

1. Contact Information

Primary Sponsor:	DART	Date Submitted:	7/23/2018
Contact Person:	Debra Meyer	Phone Number:	5152835005
		Email Address:	dmeyer@ridedart.com
Secondary Sponsor:	N/A		

2. Project Description

Project Title: Euclid/Douglas Crosstown - Year 2

Project Description: The Euclid & Douglas Avenue Crosstown route operates forty minute headways along the Euclid and Douglas Avenue corridor between East 42nd Street and Merle Hay Road. The project was designed to reduce travel times and increase the convenience of DART services by eliminating the need to travel through downtown to access stops within the corridor. The crosstown route adds five new directional miles to DART's network and connects with seven other bus routes for expanded travel options, including the #1-Fairgrounds, #4-E14th, #5-Franklin, #14-Beaver, #15-6th Avenue, #16-Douglas, and #17-Hubbell/Altoona. Crosstown service along this corridor was a frequent request from businesses, nonprofits, riders, and others.

Termini Description: Euclid and Douglas Avenues from East 42nd Street to Merle Hay Rd

Estimated Project Cost:	\$565,104	ICAAP Request	\$314,995
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Project Type: Transit-Related Improvement

3. Project Need

Explain how the project is consistent with the MPO's Congestion Management Process (CMP)? Specifically what performance measures from the CMP (page 12) does the project address?

DART's project is consistent with the MPO's Congestion Management Process and addresses the following performance measures: modal choice, transit ridership, and vehicle miles traveled. The project is expected to increase transit ridership by 228,480 and reduce VMT by 1.4 million miles annually.

Explain how the project is consistent with the MPO's Long-Range Transportation Plan Goals?

Public transit is an integral strategy of the MPO's Tomorrow Plan for developing transportation choices in the Des Moines region, and DART's project addresses all four goals of the plan including creating a resilient economy, improving the region's environmental health and access to the outdoors, furthering the health and wellbeing of all residents in the region, and increasing regional cooperation and efficiency at all levels. The benefits of public transit go beyond services provided to passengers, as public transit reduces congestion and the need for costly infrastructure expansion, helps cities maintain air quality standards, promotes economic opportunities, and drives community growth and revitalization.

ICAAP funds are awarded to projects and programs with the highest potential for reducing transportation-related congestion and air pollution, thereby maintaining Iowa's clean air quality. Explain how your project address this purpose.

DART estimates over 186,000 trips a year will be removed from metro roadways by implementing the Euclid/Douglas Avenue crosstown service, reducing congestion and emissions from single occupancy travel. For every mile traveled, public transportation produces only a fraction of the harmful pollution of automobile traffic, making it one of the most effective ways to combat air pollution.

Additional information you would like to share:

None



**IOWA CLEAN AIR ATTAINMENT PROGRAM PRE-APPLICATION
FEDERAL FISCAL YEAR 2020**

1. Contact Information

Primary Sponsor:	Waukee	Date Submitted:	7/24/2018
Contact Person:	Rudy Koester	Phone Number:	515-987-7920
		Email Address:	rkoester@waukee.org
Secondary Sponsor:	N/A		

2. Project Description

Project Title: Traffic Signal Operational Enhancement Project

Project Description: The project will upgrade traffic signal equipment/software/detection, signal timings to improve operations, and necessary engineering services. The equipment upgrade will provide ATSPM (Automated Traffic Signal Performance Measures) data that will be utilized to implement signal timing changes initially and for future adjustments. The data will be analyzed to consider implementation of adaptive traffic signal technology. Adaptive signal technology may be implemented at the completion of the project based on data collected and performance measurements along appropriate corridors.

Termini Description: All traffic signals in Waukee - along US Hwy 6, University Ave, Alice's Rd/Grand Prairie Pkwy, and LA Grant Pkwy

Estimated Project Cost: \$990,000 ICAAP Request \$790,000

Project Type: Traffic Flow Improvement (Intersection, Signalization, Other)

3. Project Need

Explain how the project is consistent with the MPO's Congestion Management Process (CMP)? Specifically what performance measures from the CMP (page 12) does the project address?

The project will implement technology that will aid in managing and optimizing traffic signal operations with the initial signal timing modifications and provide the performance measures to maintain traffic operations with constantly providing data. If adaptive technology is implemented, then the technology will monitor and update signal timings based on traffic demand in real time.

Explain how the project is consistent with the MPO's Long-Range Transportation Plan Goals?

The project will aid in reducing congestion by providing the ability to constantly monitor each signalized intersection within Waukee. This ability will allow for quicker response to reoccurring congestion with the ability to adjust signal timings accordingly. If the adaptive technology is implemented, then the technology will adjust signal timings based on traffic demand.

ICAAP funds are awarded to projects and programs with the highest potential for reducing transportation-related congestion and air pollution, thereby maintaining Iowa's clean air quality. Explain how your project address this purpose.

Traffic signal operation enhancements will reduce delays at each intersection, thereby reducing congestion and air pollution. Implementing the automated performance measures will allow the City to maintain a high level of operation into the future. If adaptive technology is implemented, this will adjust signal operations based on traffic demand along appropriate corridors.

Additional information you would like to share:

Additional information on Automated Traffic Signal Performance Measures can be found at the following links:

Website: https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/atspm.cfm

Factsheet: https://www.fhwa.dot.gov/innovation/everydaycounts/edc_4/factsheet/automated_traffic_signal.pdf



**IOWA CLEAN AIR ATTAINMENT PROGRAM PRE-APPLICATION
FEDERAL FISCAL YEAR 2020**

1. Contact Information

Primary Sponsor:	West Des Moines	Date Submitted:	7/21/2018
Contact Person:	Jim Dickinson, PE	Phone Number:	515-222-3480
		Email Address:	Jim.Dickinson@wdm.iowa.gov
Secondary Sponsor:	N/A		

2. Project Description

Project Title: Adaptive Traffic Signal Control System Expansion

Project Description: Installation of adaptive traffic signal control equipment at nine intersections at various locations on existing adaptive corridors. The intersections include 28th Street and Westtown Parkway, 31st Street and Westtown Parkway, 42nd Street and Westtown Parkway, West Lakes and Westtown Parkway, Valley West Drive and EP True Parkway, Fuller Road and Grand Avenue, 68th Street and Stagecoach Drive, Jordan Creek Parkway and Stagecoach Drive and 64th Street and Coachlight Drive.

Termini Description: Nine existing signalized intersections at various locations on existing adaptive signal systems

Estimated Project Cost:	\$410,400	ICAAP Request	\$328,320
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Project Type: Traffic Flow Improvement (Intersection, Signalization, Other)

3. Project Need

Explain how the project is consistent with the MPO's Congestion Management Process (CMP)? Specifically what performance measures from the CMP (page 12) does the project address?

The Adaptive Traffic Signal Control System Expansion project is consistent with the MPO's Congestion Management Process in that it addresses Goal 2 Level of Service – Peak Hour for Non-Congested Roads. Adaptive Signal Control Technology (ASCT) can assist to some extent in improving the level of service for a roadway. This is done by efficiently and automatically in real-time providing signal timings with the goal of optimizing traffic flow on the arterial while minimizing delay for the total intersection.

The project also addresses the CMP's Demand Management Strategies of Intelligent Transportation System as well as Signal Timing and Interconnectedness. Adaptive traffic signal control uses ITS technology in the operation of the system. The system addresses the Signal Timing and Interconnectedness strategy since, in the words of the CMP, "Coordinated operations strategies promote the smooth flow of traffic along an arterial to minimize stops, avoid congestion, fuel consumption and air quality impacts resulting from the acceleration and idling of vehicles. Operational strategies consistent with the objectives of coordination include Adaptive Signal Control Technology (ASCT) and Traffic Responsive."

The Adaptive Traffic Signal Control System Expansion project will provide the decrease in travel time, stops, delay, fuel consumption and air quality impacts that will be consistent with the CMP.

Explain how the project is consistent with the MPO's Long-Range Transportation Plan Goals?

The Adaptive Traffic Signal Control System Expansion project is consistent with several of the MPO's Long-Range Transportation Plan goals. The first is Goal 2: Manage and Optimize Transportation Infrastructure and Services. One of the measures of this goal is Non-congested roads which utilizes a peak hour Level of Service. The project will assist in expanding the optimizing the traffic flow along the existing adaptive system corridors to maintain a good Level of Service.

The project is also consistent with Goal 3: Improve the Region's Environmental Health. One of the areas of emphasis under this goal is to reduce energy consumption, transportation-related emissions, congestion and the occurrence of crashes. Existing adaptive traffic signal control systems have been shown to reduce energy consumption, transportation-related emissions, congestion and the occurrence of crashes. It makes sense that when traffic is kept moving there is a reduction in these items.

Goal 4: Further the Health, Safety, and Well Being of All Residents in the Region is also consistent with the project. One of the measures of this goal is crashes. Where many adaptive traffic signal control systems have been installed, there has been a reduction in crashes on the arterials. On many arterials, the predominate type of crash is the rear-end crash. Good signal timing may reduce this to a point but the distracted driver plays a major role in causing this type of crash.

ICAAP funds are awarded to projects and programs with the highest potential for reducing transportation-related congestion and air pollution, thereby maintaining Iowa's clean air quality. Explain how your project address this purpose.

The project consists of the installation of adaptive traffic signal control equipment at nine intersections at various locations on existing adaptive corridors. The intersections include 28th Street and Westown Parkway, 31st Street and Westown Parkway, 42nd Street and Westown Parkway, West Lakes and Westown Parkway, Valley West Drive and EP True Parkway, Fuller Road and Grand Avenue, 68th Street and Stagecoach Drive, Jordan Creek Parkway and Stagecoach Drive and 64th Street and Coachlight Drive.

The City of West Des Moines currently has 94 of its 119 signalized intersections under adaptive traffic signal control. Adaptive traffic signal control equipment is installed on ten corridors ranging from four intersections to eighteen intersections carrying annual daily traffic of 26,000 to 50,000 vehicles per day. The first intersections were placed under adaptive traffic signal control in October, 2011 so we have had over six years of experience with this technology. Before and after travel time runs were conducted on most corridors when adaptive traffic signal control was installed. The travel time data indicated reductions in delay, stops, travel time, fuel consumption and emissions. One crash data review that was conducted also indicated a reduction in crashes on the corridor after the installation of the adaptive traffic signal control equipment.

The before and after travel time data, averaged for all corridors studied, indicated travel times are down 18%, stops have been reduced 49% and delay has been by 40%. An analysis of the north section Jordan Creek Parkway adaptive traffic signal equipment installation indicated \$1.2 million of annual user savings with the adaptive traffic signal system over the previous time-of-day system. Our years of experience with adaptive traffic signal control systems has shown the technology works and the installation of the equipment under the Adaptive Traffic Signal Control System Expansion project could be expected to also have impacts in reducing congestion and air pollution, thereby maintaining Iowa's clean air quality.

Additional information you would like to share:

The City of West Des Moines has considerable experience in operating and maintaining its adaptive traffic signal control system. The City has used Iowa Clean Air Attainment funds to assist in the expansion of the system with excellent results and benefits to the motorists using the adaptive traffic signal control corridors. The Adaptive Traffic Signal Control System Expansion project in West Des Moines is expected provide the same benefits as our previous installations in maintaining Iowa's clean air quality.