



CITY OF
Ames™

CITY OF AMES, IOWA
CAPITAL IMPROVEMENTS PLAN

2018 - 2023

DRAFT

The theme for this year's Capital Improvements Plan (CIP) is the new Ames Water Treatment Plant. The project replaced the previous Water Treatment Plant, constructed in 1924 on East 5th Street, with a new Water Treatment Plant built between 2014 and 2017 on East 13th Street. The new lime-softening facility provides a maximum treatment rate of 15 million gallons per day, a 25% increase over the previous facility, and is expandable up to at least 25 million gallons per day. While the underlying treatment process remains unchanged from the earlier facility it replaced, the new Water Treatment Plant includes equipment that is much more efficient, and it includes a state-of-the-art automation and control system. The LEED-certified building is also the home to the Water & Pollution Control Department's Administrative Division.





January 16, 2018

Mayor and Ames City Council:

Since we are about to embark on a two-year adventure to update our Land Use Policy Plan (LUPP), a final decision by the City Council regarding how much the city will expand, and in what direction, will not be known for some time. The final decisions regarding the LUPP will impact the long-range plans for our five utilities and transportation system and will help determine the associated infrastructure projects that will be included in future Capital Improvement Plans. However, even in the face of this uncertain future, there are currently significant needs to address our aging infrastructure and to assure connectivity in our road and utility systems within our existing city limits. It is with these goals in mind that I am attaching for your approval the City Manager's recommended Capital Improvements Plan (CIP) for Fiscal Years 2018/19 through 2022/23. This Plan calls for an investment of various City funding sources totaling \$208,492,089 over the next five years. The following are highlights of the proposed Plan.

PUBLIC SAFETY - \$3,681,000

For many years, Story County, the City of Ames, and Iowa State University have contracted with the same private company to provide radio service for our emergency and non-emergency departments. To date, this system has provided a high degree of interoperability. Unfortunately, the system is based on very old technology and performance/coverage issues are creating problems for our radio users. A consulting firm hired by the Story County E911 Board has estimated that a new county-wide system, including the radios, will cost \$8,000,000. While it is currently anticipated that the City will pay 25% of the total cost of the new system (\$2,000,000) as reflected in the **City-Wide Radio System** (page 9), the City's share of the project and/or the identified revenue source might change as further analysis is performed.

Over the past years, various City Council members have questioned the use of Local Option Sales Tax (LOT) funds for minor improvements to our fire stations. Staff is confident that the use of these "community betterment" funds for the fire station projects is

allowed under the referendum that established the local option tax. However, based on previous City Council feedback, the revenue sources for the **Fire Station #1 Concrete Replacement** (page 11), **Fire Station #1 Emergency Generator** (page 12), **Keyless Entry System** (page 13), and **Fire Station #3 Concrete Patching** (page 14) projects have been shifted from LOT to G.O. Bonds or General Fund in this CIP.

| |
|----------------------------------|
| UTILITIES - \$113,182,750 |
|----------------------------------|

The largest dollar commitment to our City infrastructure over the next five years will be directed toward our five utilities. This investment is needed to maintain reliable service to our customers, assure safety for our employees and users, and protect our environment.

ELECTRIC SERVICES - \$35,825,000

You will note from a review of the projects reflected in this CIP that a major emphasis over the next five years will be to upgrade and modernize our transmission (\$3,320,000) and distribution (\$5,045,000) systems. This work will reduce the number and shorten the duration of electric outages to our customers.

We will continue our emphasis on the highly successful **Demand Side Management** program (page 23). The projected expenditure of \$6,000,000 over the life of this CIP is directed toward a wide array of incentives to encourage our customers to reduce our system peak load and thereby delay the next very expensive capacity expansion for our Electric Utility.

As always, the Power Plant will receive the major portion of our attention, with \$21,460,000 earmarked to maintain and upgrade our two base load units (Units 7 & 8) and two peaking units (Combustion Turbines 1 & 2). It is imperative that these units are in excellent working condition to ensure that the Refuse Derived Fuel produced from our garbage at the Resource Recovery Plant can be burned as an alternate fuel source, to provide a more economical source of electricity when the cost to purchase energy on the open market is more than the cost of our units to produce electricity, and to maintain a reliable option to produce electricity for our customers should our two transmission lines that are connected to the electrical grid become inoperable.

The City Council's commitment to sustainability is reflected in the **Street Light LED Retrofits** (page 26). The expenditure of \$1,000,000 over the next four years will complete a seven-year program to convert our High Pressure Sodium and Mercury Vapor fixtures with Light Emitting Diode (LED) fixtures. This changeover will result in lower maintenance costs, a reduction in energy usage, a decrease in the City's carbon footprint, and a lessening of glare on surrounding properties.

An interesting new project introduced in the CIP is the **Solid Waste Boiler Engineering Study** (page 43). If proven feasible, the construction of a new, smaller boiler for burning only Refuse Derived Fuel (RDF) from the Resource Recovery Plant will allow us to reduce the operating time for our larger boilers, Units 7 and 8, and purchase energy from the open market when economically attractive to do so. In this way the Electric and Resource Recovery utilities will benefit from this project. Currently, one of our larger boilers must stay operational in order to burn RDF even when it is cheaper to buy energy from the open market than to produce energy in our boilers.

WATER UTILITY- \$19,627,500

Currently, there are approximately 10.4 miles of 4-inch water mains that should be replaced with larger distribution lines in order to improve fire-fighting capabilities and water quality. In response to this need, the **Water System Improvements** project (page 71) has been increased from \$6,500,000 in the previous CIP to \$7,550,000 in this CIP.

This CIP continues a commitment to a multi-year project to convert the current water meter reading system to an automated meter reading system. While the **Advanced Metering Infrastructure** project (page 53) involves water meter reading only, the new system, which will be in place by FY 2022/23, is designed to accommodate electric meters as well.

Now that the new Water Plant is operational, it is time to make plans for the old site. Therefore, the **Old Water Treatment Plant Demolition** (page 57) earmarks \$3,520,000 to clear the site of all structures except for the Technical Services Building, which will continue to house our Laboratory and Water Meter offices.

Even with a new facility, the **Water Plant Facility Improvements** project (page 54) reflects expenditures of \$1,861,000 over the next five years for additional pumps at the High Service Pump Station, dehumidification in the Lime Slaking Building, and modifications to the Supervisory Control and Data Acquisition (SCADA) system.

SANITARY SEWER - \$48,418,000

The most impactful project in this utility will be **Nutrient Reduction Modifications** (page 68). This project will be required by the Iowa Department of Natural Resources in order to achieve its new numeric nutrient limits. To accomplish these new limits, our Water Pollution Control (WPC) facility will need to be converted to a “simultaneous nitrification/denitrification” treatment scheme. By the time it is fully implemented in FY 2024/25, this state-mandated project is estimated to cost our sanitary sewer customers approximately \$36,000,000. Of this total, \$13,530,000 is planned to be expended within the five year timeframe of this CIP.

The WPC Plant is now 28 years old and the various mechanical systems and structures at the facility are in need of repair. This CIP reflects \$14,285,000 for the major projects that have been identified as needing modifications: **Digester Improvements** (page 62), **Cogeneration System Maintenance** (page 63), **WPC Plant Facility Improvements** (page 64), **Clarifier Maintenance** (page 65), **Structural Rehabilitation** (page 66), **Flow Equalization Expansion** (page 67), and **Electric System Maintenance** (page 69).

The **Sanitary Sewer System Improvements** project (page 74) includes \$20,478,000 over the life of the CIP to identify and remove major sources of inflow/infiltration as a means of lowering the peak wet weather flow at the treatment plant. Based on a sanitary sewer system evaluation, the goal of this project will not be completed until FY 2025/26.

STORM WATER - \$7,962,000

One of the on-going goals of the City Council is to mitigate the impact of over land flooding caused by excessive storm water runoff onto surrounding properties. Therefore, the CIP calls for \$7,422,000 over the next five years in the following projects: **Storm Water Erosion Control** (page 77), **Low Point Drainage Improvements** (page 78), **Storm Water Improvement** (page 79), **Storm Water Facility Rehabilitation** (page 81), and **Storm Water Quality Improvements** (page 82).

Currently, the City does not have an accurate modeling of the storm water system within its Geographic Information System as it does for our other utilities. The inclusion of the **Storm Water System Analysis** (page 80) in the CIP will aid in identifying areas with deficient storm water capacity throughout the city as well as potential projects to correct problem areas.

RESOURCE RECOVERY - \$1,350,250

The implementation of the **Resource Recovery Systems Improvements** project (page 84) will assist with the purchase of new and replacement components and equipment at the Plant and provide funding for the two annual preventive maintenance projects, replacing the rotary disc screen rollers and rebuilding conveyors.

| |
|--------------------------------------|
| TRANSPORTATION - \$85,858,339 |
|--------------------------------------|

STREET AND BIKE ROUTE SYSTEMS - \$72,318,050

In anticipation of the City Council adopting our first ever Complete Streets Plan for our community, you will note that the financial commitment to our street and bike route systems as reflected in this CIP has increased over previous Plans.

For example, the CIP includes expenditures of \$7,912,300 for on-street bike routes and shared use paths over the next five years. This total averages \$1,582,460 per year, which is 32% greater than the Council's previous directive to spend an average of \$1,200,000 annually on these projects.

Of this total, \$3,491,800 will be spent on **Shared Use Path System Expansion** (page 101), \$888,000 on **Multi-Modal Roadway Improvements** (page 102), and \$625,000 on **Shared Use Path Maintenance** (page 103). The remainder of the commitment to shared use paths can be seen incorporated into street projects on pages 72, 89, 90, 94, 95, 97, 98, and 108.

The **Grand Avenue Extension** project (page 89) is progressing slowly but surely, as we have now received environmental clearance from the Department of Transportation. The next steps for the project will be to construct improvements at the South 16th Street and South Duff intersection and extend South 5th Street to South Duff. These projects are anticipated to begin construction in 2018. The remaining steps will be to construct the bridge over Squaw Creek as well as grade and pave the new road to South 16th Street in 2019/20. However, it should be noted that not all of the necessary right-of-way for the street has been purchased. If the property owners prove to be unwilling sellers, the completion date will need to be delayed to allow time for the City to purchase the property.

In response to the results of our annual citizen satisfaction survey, which indicates that roadway improvements and efficient traffic movement is a top priority of our residents, the CIP devotes \$50,235,000 towards maintaining, extending, and reconstructing our arterial, collector, and residential street systems (pages 90-98) along with \$6,469,250 to assure the safe and efficient flow of traffic through our community (pages 106-112).

TRANSIT - \$12,082,289

The **Cy-Ride Vehicle Replacement** program (page 120) highlights our intention to purchase five new 40-foot buses, six new mini buses, and 25 used buses, as well as replace two Dial-a-Ride vehicles over the next five years. **Bus Stop Improvements** (page 123) receives an emphasis in the CIP where two to three shelters will be installed each year for our riders.

Since the existing maintenance/bus storage building is 33 years old, attention must be given the **Cy-Ride Building Expansion & Modernization** project (page 121) to assure that the major components of this facility are in good repair. Components such as the HVAC system, bus wash, fueling system, exterior wall coating, and exterior pavement will be repaired or replaced with the approval of this CIP.

As our ridership grew significantly over the years, **Cy-Ride Technology Improvements** (page 124) were added to improve our riders' experiences with our transit system. One new service that will be implemented over the next four years at a cost of \$850,000 was requested by our visually impaired riders to automatically announce bus stop locations when the vehicle arrives.

AIRPORT - \$858,000

Now that our beautiful new terminal building is in operation, we are making plans for our next major project at the Ames Municipal Airport. The **Airport Improvements** project (page 126) calls for the demolition and removal of our old terminal building, the repair of the City-owned hangars, and the completion of an environmental assessment as we move ahead to extend the length of our main runway from 6,000 to 8,000 feet.

COMMUNITY ENRICHMENT - \$5,770,000

PARKS & RECREATION - \$4,620,000

The projects associated with the parks system are intended to assure compliance with OSHA and ADA standards, address safety issues, and maintain service levels in our park system.

Funding in the **Park System/Facility Improvements** (page 130) will commit \$1,625,000 towards upgrades to numerous parks and structures in our system. One particularly exciting project is the demolition of the small wading pool in Brookside Park and the construction of a new, larger spray pool outside of the flood plain which no doubt will become a major attraction in our park system. The site for this new facility will be determined after public input is gathered.

Another highlight of this Plan is the removal of the current clubhouse at **Homewood Golf Course** (page 132) and the construction of a new, larger facility with a community room. This new facility will not only serve the needs of the golf course when open, but will also provide our residents with a year-round venue to host weddings, company outings, family gatherings, etc.

Through the use of our Park Development Fund, **Franklin Park** (page 134) will be improved further with the addition of lighting, walking path, shelter, and seating areas, while **Edwards Park** (page 137), which replaces the former elementary school site, is planned to receive a shelter, basketball pad, benches, drinking fountain, and picnic tables.

STRENGTHENING OUR NEIGHBORHOODS - \$1,350,000

For many years the City Council has been committed to strengthening both our residential and commercial neighborhoods. To this end, the following projects will assist in realizing this goal: \$250,000 for the **Neighborhood Improvement Program** (page 145), \$250,000 for the **Campustown Façade Program** (page 147), \$250,000 for the **Downtown Façade Program** (page 148), and \$600,000 for the **Neighborhood Curb Replacement Program** (page 117).



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We need to thank the members of our Executive Leadership Team for their ability to identify and prioritize the projects that are critical to maintaining the quality of life for our residents. In addition, Duane Pitcher, Finance Director; Nancy Masteller, Budget Officer; Emily Johnson, Finance Department Secretary; Bob Kindred, Assistant City Manager; Brian Phillips, Assistant City Manager; and Tasheik Kerr, Management Analyst, should be recognized for the important role they played in creating this CIP!

Sincerely,

A handwritten signature in cursive script that reads "Steve".

Steven L. Schainker
City Manager

CITY OF AMES, IOWA
FIVE-YEAR CAPITAL IMPROVEMENTS PLAN
2018-2023

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HOW TO USE THE C.I.P. DOCUMENT

The 2018-2023 Capital Improvements Plan for the City of Ames is organized according to the City's program structure of services. This format allows decision makers to consider proposed improvements in much the same manner as the annual operating budget. First-year portions of these projects can also be identified in the annual operating program budget.

1. The **Description/Justification** section outlines the basic work to be done and the intended outcome or result of the project, outlines the reasons behind the proposal of the project, and also the advantages to the City of undertaking the project. The section may also describe the disadvantages to the City of either waiting to do the project, or of disapproving it altogether.
2. The **Comments** section outlines any additional information related to the project, including status changes from a previous year, its relationship to other projects or future developments, impacts on operating budgets and others.
3. The **Location** section will list a street location or various locations for each project. Specific locations for Public Works projects can also be found on the City of Ames website at www.cityofamesgis.maps.arcgis.com

In addition to the above information, the bottom of each page lists the types of costs (planning, construction, etc.) which will be associated with the project for each year of the present C.I.P. Below that is shown the source of financing for the project in each year.

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PROJECTION OF DEBT CAPACITY

| | 2016/17 ACTUAL | 2017/18 BUDGETED | 2018/19 PROJECTED | 2019/20 PROJECTED | 2020/21 PROJECTED | 2021/22 PROJECTED | 2022/23 PROJECTED |
|---|-------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| 1. Total Actual Valuation | 4,052,418,330 | 4,180,898,134 | 4,632,143,139 | 4,771,107,433 | 4,914,240,656 | 5,061,667,876 | 5,213,517,912 |
| 2. State Mandated Debt Limit | 202,620,917 | 209,044,907 | 231,607,157 | 238,555,372 | 245,712,033 | 253,083,394 | 260,675,896 |
| 3. City Reserve (25% of Limit) | 50,655,229 | 52,261,227 | 57,901,789 | 59,638,843 | 61,428,008 | 63,270,849 | 65,168,974 |
| Un-Reserved Debt Capacity | 151,965,688 | 156,783,680 | 173,705,368 | 178,916,529 | 184,284,025 | 189,812,545 | 195,506,922 |
| 4. Outstanding Debt | 68,230,000 | 65,480,000 | 56,375,000 | 47,970,000 | 40,120,000 | 33,345,000 | 27,045,000 |
| 5. Proposed Issues | - | - | 7,987,000 | 9,265,000 | 9,980,000 | 13,725,000 | 10,375,000 |
| 6. Balance of Proposed Issues | - | - | - | 7,424,219 | 15,456,724 | 23,464,042 | 34,190,088 |
| Total Debt Subject to Limit | 68,230,000 | 65,480,000 | 64,362,000 | 64,659,219 | 65,556,724 | 70,534,042 | 71,610,088 |
| 7. Available Un-Reserved Debt Capacity (\$) | 83,735,688 | 91,303,680 | 109,343,368 | 114,257,310 | 118,727,301 | 119,278,503 | 123,896,834 |
| 8. Available Un-Reserved Debt Capacity (%) | 55.10% | 58.24% | 62.95% | 63.86% | 64.43% | 62.84% | 63.37% |
| 9. Total Debt Capacity (\$) | 134,390,917 | 143,564,907 | 167,245,157 | 173,896,153 | 180,155,309 | 182,549,352 | 189,065,808 |
| 10. Total Debt Capacity (%) | 66.33% | 68.68% | 72.21% | 72.90% | 73.32% | 72.13% | 72.53% |

Notes:

1. Total assessed valuation plus utility valuation growth assumption is 3.0% per year.
2. State of Iowa statutory debt limit is 5% of total actual valuation.
3. City Policy reserves 25% percent of available debt capacity.
4. Current outstanding debt subject to limit at Fiscal Year End includes all debt in which property taxes are pledged.
5. Debt issues subject to limit proposed are part of Capital Improvement Plan.
6. Debt Balance on Issues in Capital Improvement Plan.
7. Debt capacity available after deducting the reserved capacity.
8. Percentage of debt capacity available after deducting the reserved capacity.
9. Debt capacity available prior to deducting the reserved capacity.
10. Percentage of Debt capacity available prior to deducting the reserved capacity.

SUMMARY OF MAJOR BOND ISSUES

| GENERAL OBLIGATION BONDS | PROJECT TOTAL | CATEGORY TOTAL | % PROJECT G.O. FUNDED | OTHER SOURCES OF FUNDING |
|--|---------------|------------------|-----------------------|--------------------------|
| 2018/19: | | | | |
| POLICE | | 1,000,000 | | |
| City-Wide Radio System | 1,000,000 | | 100% | |
| FIRE | | 137,000 | | |
| Fire Station #1 Concrete Replacement | 137,000 | | 100% | |
| STREETS ENGINEERING | | 6,850,000 | | |
| Grand Avenue Extension | 3,700,000 | | 48% | MPO/STP Funds/Grants |
| Collector Street Pavement Improvements (Hickory Drive) | 1,750,000 | | 100% | |
| Asphalt Street Pavement Improvements | 1,400,000 | | 100% | |
| 2018/19 TOTAL | | 7,987,000 | | |

SUMMARY OF MAJOR BOND ISSUES, continued

2019/20:

POLICE

| | | | | |
|------------------------|-----------|-----------|------|--|
| City-Wide Radio System | 1,000,000 | 1,000,000 | 100% | |
|------------------------|-----------|-----------|------|--|

UTILITIES

| | | | | |
|--------------------------------|-----------|-----------|-----|----------------------------|
| Campustown Public Improvements | 1,000,000 | 1,000,000 | 63% | Water/Sewer Electric Funds |
|--------------------------------|-----------|-----------|-----|----------------------------|

STREETS ENGINEERING

| | | | | |
|--|-----------|-----------|------|----------------------|
| Collector Street Pavement Improvements (E 20th Street) | 1,200,000 | 7,145,000 | 100% | |
| Asphalt Street Pavement Improvements | 1,000,000 | | 100% | |
| Seal Coat Pavement Improvements | 750,000 | | 100% | |
| Cherry Avenue Extension | 300,000 | | 100% | |
| Arterial Street Pavement Improvements (North Dakota) | 600,000 | | 40% | MPO/STP Funds/Grants |
| Downtown Pavement Improvements (Lincoln Way Alley) | 245,000 | | 100% | |
| Concrete Pavement Improvements | 2,450,000 | | 100% | |
| CyRide Route Pavement Improvements (9th Street) | 600,000 | | 100% | |

STREET MAINTENANCE

| | | | | |
|---|---------|---------|------|--|
| Bridge Rehabilitation Program (6th Street; Minnesota Ave) | 120,000 | 120,000 | 100% | |
|---|---------|---------|------|--|

2019/20 TOTAL

9,265,000

SUMMARY OF MAJOR BOND ISSUES, continued

| GENERAL OBLIGATION BONDS | PROJECT TOTAL | CATEGORY TOTAL | % PROJECT G.O. FUNDED | OTHER SOURCES OF FUNDING |
|--|------------------|-------------------|--------------------------|-----------------------------|
| 2020/21: | | | | |
| FIRE | | 40,000 | | |
| Fire Station #3 Concrete Patching | 40,000 | | 100% | |
| STREETS ENGINEERING | | 9,610,000 | | |
| Collector Street Pavement Improvements (Hoover Avenue) | 2,400,000 | | 96% | Road Use Tax |
| Asphalt Street Pavement Improvements | 1,400,000 | | 100% | |
| Seal Coat Pavement Improvements | 750,000 | | 100% | |
| Cherry Avenue Extension | 510,000 | | 20% | Grants |
| Arterial Street Pavement Improvements (East 13th Street) | 900,000 | | 36% | Grants |
| Concrete Pavement Improvements | 3,650,000 | | 97% | Road Use Tax |
| TRAFFIC ENGINEERING | | 230,000 | | |
| US Highway 69 Improvements | 230,000 | | 32% | Road Use Tax/Grants |
| STREET MAINTENANCE | | 100,000 | | |
| Bridge Rehabilitation Program (Lincoln Way/Squaw Creek) | 100,000 | | 100% | |
| 2020/21 TOTAL | | 9,980,000 | | |

SUMMARY OF MAJOR BOND ISSUES, continued

| GENERAL OBLIGATION BONDS | PROJECT TOTAL | CATEGORY TOTAL | % PROJECT G.O. FUNDED | OTHER SOURCES OF FUNDING |
|--|--------------------------|---------------------------|----------------------------------|-------------------------------------|
| 2021/22: | | | | |
| FIRE SAFETY | | | | |
| Fire Apparatus Replacement | 1,375,000 | 1,375,000 | 100% | |
| STREETS ENGINEERING | | | | |
| Collector Street Pavement Improvements (Woodland Street) | 1,500,000 | 11,700,000 | 90% | Road Use Tax |
| Asphalt Street Pavement Improvements | 3,200,000 | | 100% | |
| Seal Coat Pavement Improvements | 750,000 | | 100% | |
| Arterial Street Pavement Improvements (13th Street) | 2,750,000 | | 100% | |
| Concrete Pavement Improvements | 3,500,000 | | 68% | Road Use Tax/Grants |
| STREET MAINTENANCE | | | | |
| Bridge Rehabilitation Program (South 4th Street) | 650,000 | 650,000 | | |
| 2021/22 TOTAL | | 13,725,000 | | |

SUMMARY OF MAJOR BOND ISSUES, continued

| GENERAL OBLIGATION BONDS | PROJECT TOTAL | CATEGORY TOTAL | % PROJECT G.O. FUNDED | OTHER SOURCES OF FUNDING |
|--|------------------|-------------------|--------------------------|-----------------------------|
| 2022/23 | | | | |
| STREETS ENGINEERING | | 10,075,000 | | |
| Collector Street Pavement Improvements (6th Street) | 1,200,000 | | 100% | |
| Asphalt Street Pavement Improvements | 3,700,000 | | 100% | |
| Seal Coat Pavement Improvements | 750,000 | | 100% | |
| Arterial Street Pavement Improvements (Airport Road) | 750,000 | | 100% | |
| Downtown Street Improvements (Duff to Douglas Alley) | 250,000 | | 100% | |
| Concrete Pavement Improvements | 1,700,000 | | 100% | |
| CyRide Route Pavement Improvements (Lincoln Way) | 1,725,000 | | 100% | |
| PARKS AND RECREATION | | 300,000 | | |
| Park Maintenance Facilities Consolidation | 300,000 | | | |
| 2022/23 TOTAL | | 10,375,000 | | |
| GRAND TOTAL GENERAL OBLIGATION BONDS | | 51,332,000 | | |

SOLID CONTACT UNIT



CITY-WIDE
PROGRAM SUMMARY

TOTAL CAPITAL IMPROVEMENTS PLAN EXPENDITURES AND FUNDING SOURCES

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|---------------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| EXPENDITURES BY PROGRAM: | | | | | | | |
| Public Safety | 3,681,000 | 1,137,000 | 1,089,000 | 40,000 | 1,415,000 | - | 7 |
| Utilities | 113,182,750 | 24,672,600 | 25,202,100 | 15,900,100 | 17,693,850 | 29,714,100 | 19 |
| Transportation | 85,858,339 | 16,814,400 | 14,430,150 | 20,063,900 | 19,377,563 | 15,172,326 | 85 |
| Community Enrichment | 5,770,000 | 1,335,000 | 990,000 | 1,090,000 | 790,000 | 1,565,000 | 127 |
| TOTAL EXPENDITURES | 208,492,089 | 43,959,000 | 41,711,250 | 37,094,000 | 39,276,413 | 46,451,426 | |
| FUNDING SOURCES: | | | | | | | |
| Debt | 93,231,000 | 11,592,000 | 17,665,000 | 13,782,000 | 20,597,000 | 29,595,000 | |
| City | 90,875,658 | 26,057,200 | 20,076,850 | 15,915,000 | 14,482,523 | 14,344,085 | |
| Other | 24,385,431 | 6,309,800 | 3,969,400 | 7,397,000 | 4,196,890 | 2,512,341 | |
| TOTAL FUNDING SOURCES | 208,492,089 | 43,959,000 | 41,711,250 | 37,094,000 | 39,276,413 | 46,451,426 | |

CAPITAL IMPROVEMENTS PLAN EXPENDITURE SUMMARY BY PROGRAM

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|---------------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|
| EXPENDITURES BY PROGRAM: | | | | | | | |
| Public Safety: | | | | | | | |
| Police | 2,000,000 | 1,000,000 | 1,000,000 | - | - | - | 8 |
| Fire Safety | 1,641,000 | 137,000 | 89,000 | 40,000 | 1,375,000 | - | 10 |
| Outdoor Storm Warning System | 40,000 | - | - | - | 40,000 | - | 16 |
| Total Public Safety | 3,681,000 | 1,137,000 | 1,089,000 | 40,000 | 1,415,000 | - | |
| Utilities: | | | | | | | |
| Electric Services | 35,825,000 | 9,405,000 | 11,035,000 | 5,910,000 | 4,430,000 | 5,045,000 | 21 |
| Water Production/Treatment | 10,377,500 | 1,619,500 | 3,789,000 | 1,229,000 | 2,863,000 | 877,000 | 51 |
| Water Pollution Control | 27,815,000 | 6,133,000 | 1,453,000 | 1,317,000 | 2,950,000 | 15,962,000 | 61 |
| Water Distribution | 9,250,000 | 1,400,000 | 3,000,000 | 1,500,000 | 1,600,000 | 1,750,000 | 70 |
| Sanitary Sewer System | 20,603,000 | 3,845,000 | 3,959,000 | 4,077,000 | 4,297,000 | 4,425,000 | 73 |
| Storm Water Management | 7,962,000 | 1,880,000 | 1,680,000 | 1,510,000 | 1,342,000 | 1,550,000 | 76 |
| Resource Recovery | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 | 83 |
| Total Utilities | 113,182,750 | 24,672,600 | 25,202,100 | 15,900,100 | 17,693,850 | 29,714,100 | |

CAPITAL IMPROVEMENTS PLAN EXPENDITURE SUMMARY BY PROGRAM, continued

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| EXPENDITURES, continued: | | | | | | | |
| Transportation: | | | | | | | |
| Streets Engineering | 57,960,000 | 11,700,000 | 8,370,000 | 13,625,000 | 13,865,000 | 10,400,000 | 87 |
| Shared Use Path System | 5,004,800 | 735,000 | 1,266,000 | 943,000 | 935,800 | 1,125,000 | 99 |
| Traffic Engineering | 6,469,250 | 1,373,000 | 1,303,750 | 1,921,500 | 781,000 | 1,090,000 | 104 |
| Street Maintenance | 3,484,000 | 601,000 | 810,000 | 618,000 | 1,175,000 | 280,000 | 113 |
| Transit | 12,082,289 | 2,405,400 | 2,500,400 | 2,560,400 | 2,440,763 | 2,175,326 | 119 |
| Airport | 858,000 | - | 180,000 | 396,000 | 180,000 | 102,000 | 125 |
| Total Transportation | 85,858,339 | 16,814,400 | 14,430,150 | 20,063,900 | 19,377,563 | 15,172,326 | |
| Community Enrichment/Internal Services: | | | | | | | |
| Parks and Recreation | 4,620,000 | 1,110,000 | 790,000 | 840,000 | 590,000 | 1,290,000 | 128 |
| Cemetery | 100,000 | 25,000 | - | - | - | 75,000 | 142 |
| City Manager | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 144 |
| Planning and Housing | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 146 |
| Facilities/Internal Services | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 | 149 |
| Total Community Enrichment | 5,770,000 | 1,335,000 | 990,000 | 1,090,000 | 790,000 | 1,565,000 | |
| TOTAL EXPENDITURES | 208,492,089 | 43,959,000 | 41,711,250 | 37,094,000 | 39,276,413 | 46,451,426 | |

CAPITAL IMPROVEMENTS PLAN FUNDING SOURCE SUMMARY

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Debt: | | | | | | |
| G.O. Bonds | 51,332,000 | 7,987,000 | 9,265,000 | 9,980,000 | 13,725,000 | 10,375,000 |
| State Revolving Fund Loans | 41,899,000 | 3,605,000 | 8,400,000 | 3,802,000 | 6,872,000 | 19,220,000 |
| Total Debt Funding | 93,231,000 | 11,592,000 | 17,665,000 | 13,782,000 | 20,597,000 | 29,595,000 |
| City: | | | | | | |
| General Fund | 89,000 | - | 89,000 | - | - | - |
| Local Option Sales Tax | 8,706,800 | 1,566,000 | 2,082,000 | 1,701,000 | 1,576,800 | 1,781,000 |
| Road Use Tax | 8,869,650 | 2,409,000 | 1,486,950 | 1,990,900 | 1,569,000 | 1,413,800 |
| Electric Utility Fund | 35,293,400 | 9,338,200 | 10,874,400 | 5,883,000 | 4,246,400 | 4,951,400 |
| Water Utility Fund | 14,174,500 | 2,939,500 | 2,204,000 | 2,126,000 | 4,203,000 | 2,702,000 |
| Sewer Utility Fund | 10,894,000 | 6,503,000 | 697,000 | 1,667,000 | 785,000 | 1,242,000 |
| Storm Sewer Utility Fund | 6,326,000 | 1,584,000 | 1,362,000 | 1,180,000 | 1,000,000 | 1,200,000 |
| Resource Recovery Fund | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 |
| Transit Capital Reserve Fund | 4,487,258 | 1,117,400 | 875,400 | 895,400 | 860,473 | 738,585 |
| Airport Construction Fund | 109,800 | - | 30,000 | 39,600 | 30,000 | 10,200 |
| Park Development Fund | 370,000 | 90,000 | 80,000 | - | - | 200,000 |
| Ice Arena Capital Reserve | 205,000 | 120,000 | 10,000 | 75,000 | - | - |
| Total City Funding | 90,875,658 | 26,057,200 | 20,076,850 | 15,915,000 | 14,482,523 | 14,344,085 |

CAPITAL IMPROVEMENTS PLAN FUNDING SOURCE SUMMARY, continued

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Other: | | | | | | |
| MPO/STP Funds | 4,175,000 | 2,859,000 | 839,000 | 159,000 | 159,000 | 159,000 |
| Federal/State Grants | 19,095,631 | 3,359,000 | 2,859,800 | 6,854,600 | 3,854,290 | 2,167,941 |
| Federal Aviation Administration | 448,200 | - | - | 356,400 | - | 91,800 |
| Iowa State University | 581,600 | 66,800 | 210,600 | 27,000 | 183,600 | 93,600 |
| Ames Community School District | 50,000 | 25,000 | 25,000 | - | - | - |
| Private Funds | 35,000 | - | 35,000 | - | - | - |
| Total Other Funding | 24,385,431 | 6,309,800 | 3,969,400 | 7,397,000 | 4,196,890 | 2,512,341 |
| TOTAL FUNDING SOURCES | 208,492,089 | 43,959,000 | 41,711,250 | 37,094,000 | 39,276,413 | 46,451,426 |

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CASCADE AERATORS



PUBLIC SAFETY

PUBLIC SAFETY

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|------------------------------|------------------|------------------|------------------|---------------|------------------|---------|------|
| EXPENDITURES: | | | | | | | |
| Police | 2,000,000 | 1,000,000 | 1,000,000 | - | - | - | 8 |
| Fire Safety | 1,641,000 | 137,000 | 89,000 | 40,000 | 1,375,000 | - | 10 |
| Outdoor Storm Warning System | 40,000 | - | - | - | 40,000 | - | 16 |
| TOTAL EXPENDITURES | 3,681,000 | 1,137,000 | 1,089,000 | 40,000 | 1,415,000 | - | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 3,552,000 | 1,137,000 | 1,000,000 | 40,000 | 1,375,000 | - | |
| City: | | | | | | | |
| General Fund | 89,000 | - | 89,000 | - | - | - | |
| Local Option Sales Tax | 40,000 | - | - | - | 40,000 | - | |
| Total City Funding | 129,000 | - | 89,000 | - | 40,000 | - | |
| TOTAL FUNDING SOURCES | 3,681,000 | 1,137,000 | 1,089,000 | 40,000 | 1,415,000 | - | |

PUBLIC SAFETY - POLICE

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-----------------------------------|------------------|------------------|------------------|----------------|----------------|----------------|-------------|
| PROJECT: | | | | | | | |
| City-Wide Radio System | 2,000,000 | 1,000,000 | 1,000,000 | - | - | - | 9 |
| TOTAL PROJECT EXPENDITURES | 2,000,000 | 1,000,000 | 1,000,000 | - | - | - | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 2,000,000 | 1,000,000 | 1,000,000 | - | - | - | |
| TOTAL FUNDING SOURCES | 2,000,000 | 1,000,000 | 1,000,000 | - | - | - | |

CITY-WIDE RADIO SYSTEM

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The City currently uses an analog 800 Mhz trunked voice radio system for all departments. Although the system provides a high degree of county-wide interoperability, it is based on very old technology. Performance and coverage issues have begun to create significant problems for radio users.

A study is currently underway to evaluate the replacement of the county-wide radio system. A professional consulting firm, hired by the Story County 911 Board, has provided a preliminary cost estimate of \$8,000,000 for a new system. This page reflects the City’s anticipated share of the total project cost. However, the City’s share of the project and revenue source may change after further study.

COMMENTS

There are approximately 446 radios currently used by the City across all departments. Radio users are placed in one of two categories – Public Safety (Fire and Police with 165 radios) and Public Service (all other departments with 281 radios). Broken down by funding source, departments are supported by the General Fund (200 radios) and Road Use Tax Fund, Utility or Enterprise funds (246 radios).

The project anticipates that the City of Ames, Story County, Iowa State University, and the rural communities in Story County will enter into a partnership to fund a new county-wide radio system.

LOCATION

City Hall, 515 Clark Ave.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------|------------------|------------------|------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Radio System Upgrade | 1,000,000 | 1,000,000 | | | | |
| Radio Purchase | 1,000,000 | | 1,000,000 | | | |
| TOTAL | 2,000,000 | | 1,000,000 | | | |
| FINANCING: | | | | | | |
| G.O. Bonds | 2,000,000 | 1,000,000 | 1,000,000 | | | |
| TOTAL | 2,000,000 | 1,000,000 | 1,000,000 | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|--------------------|
| Public Safety - Police | Police | 379-2511-429 |

PUBLIC SAFETY - FIRE

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--------------------------------------|------------------|----------------|----------------|----------------|------------------|----------------|-------------|
| PROJECT: | | | | | | | |
| Fire Station #1 Concrete Replacement | 137,000 | 137,000 | - | - | - | - | 11 |
| Fire Station #1 Emergency Generator | 50,000 | - | 50,000 | - | - | - | 12 |
| Fire Station Keyless Entry System | 39,000 | - | 39,000 | - | - | - | 13 |
| Fire Station #3 Concrete Patching | 40,000 | - | - | 40,000 | - | - | 14 |
| Fire Apparatus Replacement | 1,375,000 | - | - | - | 1,375,000 | - | 15 |
| TOTAL PROJECT EXPENDITURES | 1,641,000 | 137,000 | 89,000 | 40,000 | 1,375,000 | - | |
| FUNDING SOURCES | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 1,552,000 | 137,000 | - | 40,000 | 1,375,000 | - | |
| City: | | | | | | | |
| General Fund | 89,000 | - | 89,000 | - | - | - | |
| TOTAL FUNDING SOURCES | 1,641,000 | 137,000 | 89,000 | 40,000 | 1,375,000 | - | |

FIRE STATION # 1 CONCRETE REPLACEMENT

PROJECT STATUS: Revenue Change Cost Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION – When Fire Station #1 was constructed in 1979, underground fuel tanks were installed underneath the rear drive. The fuel tanks were removed and the void was filled, but settling of the pavement has occurred, causing accelerated damage. Public Works engineers evaluated the concrete in 2012 and agreed the concrete will need to be replaced within five years.

LOCATION

Fire Station #1, 1300 Burnett Ave.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|--------------------|--------------------|---------|---------|---------|
| COST: | | | | | | |
| Construction | 137,000 | 137,000 | | | | |
| TOTAL | 137,000 | 137,000 | | | | |
| FINANCING: | | | | | | |
| G.O. Bonds | 137,000 | 137,000 | | | | |
| TOTAL | 137,000 | 137,000 | | | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Public Safety - Fire | | Fire | 379-2255-429 | | | |

FIRE STATION # 1 EMERGENCY GENERATOR

PROJECT STATUS: Revenue Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION – Fire Station #1 was constructed in 1979, and the current emergency generator was installed at that time. As problems have arisen with this equipment, parts have become hard to acquire. There is an increasing need to upgrade this obsolete emergency facility generator originally installed at this station to provide backup power during times of electrical outages.

COMMENTS

This project includes the purchase of a fixed emergency power generator, capable of supplying continuous electrical power (at variable load) in the event of a utility power failure at Station #1. Though the generator is housed inside the station, the \$50,000 requested also includes a sound attenuated, industrial grade enclosure that reduces noise levels to below industry standards.

LOCATION

Fire Station #1, 1300 Burnett Ave.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|---------------|---------|---------------|---------|---------|---------|
| COST: | | | | | | |
| Equipment and Installation | 50,000 | | 50,000 | | | |
| TOTAL | 50,000 | | 50,000 | | | |
| FINANCING: | | | | | | |
| General Fund | 50,000 | | 50,000 | | | |
| TOTAL | 50,000 | | 50,000 | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|--------------------|
| Public Safety - Fire | Fire | |

KEYLESS ENTRY SYSTEM

PROJECT STATUS: Revenue Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

In the days after the terrorist attacks of 9/11, increased physical security concerns led many fire departments to a heightened level of security. As part of the Patriot Act, Fire Stations providing emergency response have been defined as “critical infrastructure,” and house valuable apparatus and equipment. In addition, many highly confidential documents can be accessed on site as well (e.g. EMS reports, personnel files, KNOX Box keys, etc.). When turnover occurs, efforts are taken to have all station keys returned to Administration, yet the ease of key duplication is always a concern. A more sophisticated card access system at all three fire stations would provide greater security.

COMMENTS

This project includes the installation of a new card access system to the perimeter doors of all three fire station facilities, based on the current open architecture hardware and the corresponding required software to function. The new system will include:

- Control panels with power supply and enclosures
- 2-portal reader interfaces
- Access software with server
- Web client for remote access
- Wall mount card readers (some with keypads)
- Electric strikes and dead latches with exit paddles installed
- Cabling, software, installation, programming, and necessary training

LOCATION

Fire Station #1, 1300 Burnett Ave.
Fire Station #2, 132 Welch Ave.
Fire Station #3, 2400 S. Duff Ave.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Equipment and Installation | 39,000 | | 39,000 | | | |
| TOTAL | 39,000 | | 39,000 | | | |
| FINANCING: | | | | | | |
| General Fund | 39,000 | | 39,000 | | | |
| TOTAL | 39,000 | | 39,000 | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|--------------------|
| Public Safety - Fire | Fire | |

FIRE STATION # 3 CONCRETE PATCHING

PROJECT STATUS: Revenue Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Fire Station #3 was constructed in 2002. Since its construction, the concrete driveway has continued to deteriorate around the structure. Public Works engineers have evaluated the driveway and recommended several options ranging from patching to a complete reconstruction. Based on further input from Public Works, the project includes an initial patching option, rather than complete tear out and replacement at this time.

COMMENTS

The engineers have cautioned that there is a strong likelihood that the joint deterioration will spread from the patching; however, they believe that it should last long enough that the rest of the concrete ages to a point where complete reconstruction makes more sense.

LOCATION

Fire Station #3, 2400 S. Duff Ave.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|---------------|---------|---------|---------------|---------|---------|
| COST: | | | | | | |
| Construction | 40,000 | | | 40,000 | | |
| TOTAL | 40,000 | | | 40,000 | | |
| FINANCING: | | | | | | |
| G.O. Bonds | 40,000 | | | 40,000 | | |
| TOTAL | 40,000 | | | 40,000 | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|--------------------|
| Public Safety - Fire | Fire | |

FIRE APPARATUS REPLACEMENT

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Fire apparatus are essential for structural firefighting. The Fire Apparatus Replacement Program ensures replacement of fire apparatus at the end of their operational life. The City maintains its current fleet very well, which facilitates keeping the three front line fire apparatus for a maximum of 20 years, after which our goal is to retain it as a reserve apparatus for an additional 10-15 years. However, sometimes parts availability, metal fatigue, and corrosion will take apparatus out of service, making continued use impractical. Before being placed in reserve status, fire apparatus are typically refurbished.

The City maintains one frontline ladder truck, Truck 3, which is nearing 20 years of age (purchased new in 2002). In addition to Truck 3, the City has two frontline fire engines (Engine 1 and Engine 2), and Fire Stations #1 and #3 each house a reserve engine as well.

COMMENTS

Currently housed at Station #3, Truck 3 is the City's only aerial firefighting apparatus. When out-of-service, a neighboring volunteer Fire Department is typically called to place its ladder truck on stand-by. Thus, at 20 years of age, Truck 3 is due for replacement, and retaining this Truck as a reserve would limit the necessity to call other agencies for unit stand-by.

Replace Truck 3 (801) at a cost of \$1,250,000, including new equipment
Reserve Engine 3 (purchased new in 1989) will be disposed of/sold and Truck 3 will be refurbished to serve as a reserve truck. Estimated cost is \$125,000.

LOCATION

Fire Station #3, 2400 S. Duff Ave.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------------------|------------------|---------|---------|---------|------------------|---------|
| COST: | | | | | | |
| Replace Truck 3 | 1,250,000 | | | | 1,250,000 | |
| Refurbish Truck 3 for Reserve Status | 125,000 | | | | 125,000 | |
| TOTAL | 1,375,000 | | | | 1,375,000 | |
| FINANCING: | | | | | | |
| G.O. Bonds | 1,375,000 | | | | 1,375,000 | |
| TOTAL | 1,375,000 | | | | 1,375,000 | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|--------------------|
| Public Safety - Fire | Fire | |

PUBLIC SAFETY - STORM WARNING SYSTEM

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-----------------------------------|---------------|----------------|----------------|----------------|----------------|----------------|-------------|
| PROJECT: | | | | | | | |
| Outdoor Storm Warning System | 40,000 | - | - | - | 40,000 | - | 17 |
| TOTAL PROJECT EXPENDITURES | 40,000 | - | - | - | 40,000 | - | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Local Option Sales Tax | 40,000 | - | - | - | 40,000 | - | |
| TOTAL FUNDING SOURCES | 40,000 | - | - | - | 40,000 | - | |

OUTDOOR STORM WARNING SYSTEM

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The City's outdoor storm warning system is made up of a central controller in the Police Department dispatch center and 18 radio-controlled individual storm sirens. This program allows the City to fill in gap areas and acquire new, larger sirens to augment and eventually replace the smaller, older sirens.

LOCATION

The location for the siren being purchased in FY 2021/22 will be determined at the time of purchase.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|---------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Equipment and Installation | 40,000 | | | | 40,000 | |
| TOTAL | 40,000 | | | | 40,000 | |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 40,000 | | | | 40,000 | |
| TOTAL | 40,000 | | | | 40,000 | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Public Safety - Electric | | Electric Services | | | | |

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FILTERS



UTILITIES

UTILITIES

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|----------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------|
| EXPENDITURES: | | | | | | | |
| Electric Services | 35,825,000 | 9,405,000 | 11,035,000 | 5,910,000 | 4,430,000 | 5,045,000 | 21 |
| Water Production/Treatment | 10,377,500 | 1,619,500 | 3,789,000 | 1,229,000 | 2,863,000 | 877,000 | 51 |
| Water Pollution Control | 27,815,000 | 6,133,000 | 1,453,000 | 1,317,000 | 2,950,000 | 15,962,000 | 61 |
| Water Distribution | 9,250,000 | 1,400,000 | 3,000,000 | 1,500,000 | 1,600,000 | 1,750,000 | 70 |
| Sanitary Sewer System | 20,603,000 | 3,845,000 | 3,959,000 | 4,077,000 | 4,297,000 | 4,425,000 | 73 |
| Storm Water Management | 7,962,000 | 1,880,000 | 1,680,000 | 1,510,000 | 1,342,000 | 1,550,000 | 76 |
| Resource Recovery | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 | 83 |
| TOTAL EXPENDITURES | 113,182,750 | 24,672,600 | 25,202,100 | 15,900,100 | 17,693,850 | 29,714,100 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 1,000,000 | - | 1,000,000 | - | - | - | |
| State Revolving Fund Loans | 41,899,000 | 3,605,000 | 8,400,000 | 3,802,000 | 6,872,000 | 19,220,000 | |
| Total Debt Funding | 42,899,000 | 3,605,000 | 9,400,000 | 3,802,000 | 6,872,000 | 19,220,000 | |

UTILITIES, CONTINUED

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------------------|--------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| FUNDING SOURCES, continued: | | | | | | |
| City: | | | | | | |
| Electric Utility Fund | 35,293,400 | 9,338,200 | 10,874,400 | 5,883,000 | 4,246,400 | 4,951,400 |
| Water Utility Fund | 13,799,500 | 2,864,500 | 2,129,000 | 2,051,000 | 4,128,000 | 2,627,000 |
| Sewer Utility Fund | 10,519,000 | 6,428,000 | 622,000 | 1,592,000 | 710,000 | 1,167,000 |
| Storm Sewer Utility Fund | 6,076,000 | 1,534,000 | 1,312,000 | 1,130,000 | 950,000 | 1,150,000 |
| Resource Recovery Fund | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 |
| Road Use Tax | 100,000 | 100,000 | - | - | - | - |
| Total City Funding | 67,138,150 | 20,654,800 | 15,223,500 | 11,013,100 | 10,246,250 | 10,000,500 |
| Other: | | | | | | |
| Iowa State University | 581,600 | 66,800 | 210,600 | 27,000 | 183,600 | 93,600 |
| Federal/State Grants | 2,564,000 | 346,000 | 368,000 | 1,058,000 | 392,000 | 400,000 |
| Total Other Funding | 3,145,600 | 412,800 | 578,600 | 1,085,000 | 575,600 | 493,600 |
| Total Funding Sources | 113,182,750 | 24,672,600 | 25,202,100 | 15,900,100 | 17,693,850 | 29,714,100 |

UTILITIES - ELECTRIC SERVICES

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|---|-----------|-----------|-----------|-----------|-----------|-----------|------|
| PROJECT: | | | | | | | |
| Electric Services: | | | | | | | |
| Demand Side Management Program | 6,000,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 23 |
| Transmission: | | | | | | | |
| Ontario Substation 69 kV Breaker Addition | 1,500,000 | 200,000 | 1,300,000 | - | - | - | 24 |
| 69 kV Transmission Reconstruction | 1,820,000 | 260,000 | 520,000 | - | 520,000 | 520,000 | 25 |
| Distribution: | | | | | | | |
| Street Light LED Retrofits | 1,000,000 | 250,000 | 250,000 | 250,000 | 250,000 | - | 26 |
| Mortensen Road Feeder Reconstruction | 520,000 | 520,000 | - | - | - | - | 27 |
| Street Light and Line Relocations | 875,000 | 150,000 | 225,000 | 125,000 | 150,000 | 225,000 | 28 |
| Dayton Avenue Substation Upgrade | 1,150,000 | - | - | 200,000 | 950,000 | - | 29 |
| Mortensen Road Transformer Protection | 650,000 | - | - | 150,000 | 500,000 | - | 30 |
| Vet Med Substation Switchgear Upgrade | 850,000 | - | - | - | 100,000 | 750,000 | 31 |
| Power Plant Capital: | | | | | | | |
| Unit 8 Superheat and Generating Bank | 4,500,000 | 4,500,000 | - | - | - | - | 32 |
| Power Plant Relay/Control Replacement | 250,000 | 125,000 | 125,000 | - | - | - | 33 |
| Unit 7 Surface Condenser Tube Replacement | 800,000 | 50,000 | 750,000 | - | - | - | 34 |
| Power Plant Parts Inventory Building | 200,000 | 200,000 | - | - | - | - | 35 |

UTILITIES - ELECTRIC SERVICES, continued

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--|-------------------|------------------|-------------------|------------------|------------------|------------------|-------------|
| Power Plant Capital, continued: | | | | | | | |
| Unit 7 Boiler Tube Repair | 5,650,000 | - | 5,650,000 | - | - | - | 36 |
| Underground Storage Tank Removal | 250,000 | - | 15,000 | 235,000 | - | - | 37 |
| Unit 7 Exciter Replacement | 250,000 | - | - | 250,000 | - | - | 38 |
| Coal Yard Reclamation | 500,000 | - | - | 500,000 | - | - | 39 |
| Combustion Turbine 2 Controls Upgrade | 750,000 | - | - | - | 50,000 | 700,000 | 40 |
| Unit 7 Closed Loop Cooling Water System | 400,000 | - | - | - | - | 400,000 | 41 |
| Power Plant Fire Protection System | 250,000 | - | - | - | - | 250,000 | 42 |
| New Solid Waste Boiler Engineering Study | 50,000 | - | - | - | - | 50,000 | 43 |
| Power Plant Maintenance: | | | | | | | |
| Unit 7 Turbine Generator Overhaul | 1,800,000 | 1,800,000 | - | - | - | - | 44 |
| Unit 8 Turbine Generator Overhaul | 3,000,000 | - | 1,000,000 | 2,000,000 | - | - | 45 |
| Power Plant Building Modifications | 950,000 | 150,000 | - | - | 500,000 | 300,000 | 46 |
| Unit 8 Precipitator Reconstruction | 1,000,000 | - | - | 1,000,000 | - | - | 47 |
| Unit 7 Main Steam Line Insulation | 210,000 | - | - | - | 210,000 | - | 48 |
| Units 5 and 6 Boiler Removal | 500,000 | - | - | - | - | 500,000 | 49 |
| Unit 8 Stack Exterior Refinishing | 150,000 | - | - | - | - | 150,000 | 50 |
| TOTAL PROJECT EXPENDITURES | 35,825,000 | 9,405,000 | 11,035,000 | 5,910,000 | 4,430,000 | 5,045,000 | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Electric Utility Fund | 35,243,400 | 9,338,200 | 10,824,400 | 5,883,000 | 4,246,400 | 4,951,400 | |
| Other: | | | | | | | |
| Iowa State University | 581,600 | 66,800 | 210,600 | 27,000 | 183,600 | 93,600 | |
| TOTAL FUNDING SOURCES | 35,825,000 | 9,405,000 | 11,035,000 | 5,910,000 | 4,430,000 | 5,045,000 | |

**DEMAND SIDE MANAGEMENT (DSM)
ENERGY CONSERVATION PROGRAMS**

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to develop and administer programs aimed at reducing demand for electricity. Reductions in the demand for electricity positively impact future energy production/supply costs. Demand Side Management (DSM) programs are utility programs aimed at reducing consumer use of energy through conservation or efficiency measures. Ongoing programs are:

- Residential energy audits
- Residential high efficiency air conditioner rebates
- Residential low income weatherization
- Residential high efficiency lighting rebates
- Residential and commercial efficient appliance rebates
- Commercial custom rebates
- Residential new construction rebates
- Commercial high efficiency lighting rebates
- Commercial audits
- Solar installation rebates
- Green Choices alternative energy contribution
- Commercial/industrial power factor correction rebates

With rebates for solar panel installations gaining momentum and a strong interest in appliance rebates, the budget for this program was increased from \$1,000,000 per year to \$1,200,000 for the next five years.

Load Management (LM) programs control energy consumption at any instant through the use of mechanical or electronic devices. Ongoing programs are:

- Prime Time Power air conditioner load control

New Demand Side Management (DSM) program changes are:

- Changed the rebate for air conditioner tune up to \$25, rebate only WiFi thermostats now for \$50, and changing the way we rebate mini-splits to better reflect their low cost in the High Efficiency Air Conditioner Rebate program
- Removed the New Construction rebate for individual apartments, only rebating single structures now.

New Load Management programs under consideration are:

- Interruptible rates for industrial customer

LOCATION

Electric Administration

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--|------------------|------------------|------------------|------------------|------------------|------------------|
| COST: | | | | | | |
| Program development and administration | 6,000,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |
| TOTAL | 6,000,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 6,000,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |
| TOTAL | 6,000,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Administration

DEPARTMENT:

Electric Services

ACCOUNT NO.

530-4815-489

ONTARIO SUBSTATION 69KV BREAKER ADDITION

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will add 69kV line and transformer breakers, replace the existing 13.8kV switchgear, replace all 13.8 kV and 69kV relaying and controls, upgrade station service and feeders, replace obsolete 69kV bus potential transformers and fusing and Lightning Arresters, and upgrade grounding and shielding to the Ontario Road Substation.

The addition of 69kV line and transformer breakers, 13.8kV main breaker, and replacement of obsolete relays and deteriorated lightning arrestors, potential transformers, and related equipment at Ontario Substation will improve the reliability of transmission service to the substation. This will also improve service provided to customers served by this substation by shortening the duration of outages which may occur.

The use of breakers for 69kV transmission service and for switchgear main breakers for distribution substations is consistent with recommended electric utility industry engineering practices.

COMMENTS

Cost change to the estimated ISU share of this project.

Iowa State University's (ISU) share of the project is based on a load-ratio-share at the time of implementation. ISU's load-ratio-share decreases as the City's load increases, so the City will likely pay a larger share as the project is delayed. For budgetary purposes, staff is assuming the ISU load-ratio-share to be 9% (based on an 18% share of 69kV facilities, which are estimated to be 50% of the cost of this project).

LOCATION

Ontario Substation, Delaware Avenue and Utah Drive

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|------------------|----------------|------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 1,500,000 | 200,000 | 1,300,000 | | | |
| TOTAL | 1,500,000 | 200,000 | 1,300,000 | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 1,365,000 | 182,000 | 1,183,000 | | | |
| Iowa State University | 135,000 | 18,000 | 117,000 | | | |
| TOTAL | 1,500,000 | 200,000 | 1,300,000 | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|-----------------------------------|--------------------|--------------------|
| Utilities - Electric Transmission | Electric Services | 530-4821-489 |

69KV TRANSMISSION RECONSTRUCTION

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This is a multi-year project that will reconstruct the older, deteriorated portions of 69kV pole lines in project increments of between one and two line-miles of 69kV transmission line per year. The actual length and cost per mile will vary by terrain, accessibility, and attachments. Candidate portions of line include the original MidAmerican 69kV tie line that connects the Ames Plant Switchyard to MidAmerican’s 69kV source point south of Ames on Highway 69, the Ames Plant to Top-O-Hollow line, the Top-O-Hollow to Stange Road Substation Line, and the Vet Med to Mortensen Road Substation line. The total project will require at least five years and will reconstruct approximately 11 miles of deteriorated 69kV line. Related work will include the reconstruction of those portions of distribution line that are underbuilt on existing transmission lines and/or new distribution underbuild that are needed for capacity and/or reliability improvements and are a logical part of construction along the same line route.

COMMENTS

Iowa State University’s (ISU) share of the project is based on a load-ratio-share at the time of implementation. For budgetary purposes, staff is assuming the ISU load-ratio-share to be 18%.

LOCATION

Various

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 245,000 | 35,000 | 70,000 | | 70,000 | 70,000 |
| Construction | 1,575,000 | 225,000 | 450,000 | | 450,000 | 450,000 |
| TOTAL | 1,820,000 | 260,000 | 520,000 | | 520,000 | 520,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 1,492,400 | 213,200 | 426,400 | | 426,400 | 426,400 |
| Iowa State University | 327,600 | 46,800 | 93,600 | | 93,600 | 93,600 |
| TOTAL | 1,820,000 | 260,000 | 520,000 | | 520,000 | 520,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|-----------------------------------|--------------------|--------------------|
| Utilities - Electric Transmission | Electric Services | 530-4856-489 |

STREET LIGHT LED RETROFITS

PROJECT STATUS: Cost Decrease

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will provide for the replacement of nearly all existing High Pressure Sodium (HPS) and Mercury Vapor (MV) Street Light fixtures with Light Emitting Diode (LED) fixtures during routine maintenance activities. This project is expected to replace approximately 7,500 roadway and security lights over a 5-year period, and includes all lights within the City of Ames electric system. LED lights have a longer life and use significantly less energy than existing HPS and MV fixtures. They are instantly on, resulting in lower ongoing maintenance costs, reduced energy usage, a decrease in the City's carbon footprint, contribute to a more sustainable Ames, and direct light downward to avoid light contamination of the night sky while reducing the glare that can negatively affect drivers. By performing retrofits during routine maintenance activities, this effort is expected to generate a return on investment within 10 years, based on projected energy and maintenance savings. LED fixtures have an expected life of at least 20 years compared to between 5 and 10 years for HPS fixtures.

COMMENTS

The purpose of this project is to allow the existing street light maintenance workers to retrofit LED lights during routine maintenance on HPS and MV lights in order to minimize retrofit labor costs. Since this effort will be routine-maintenance-based, it will not target specific streets or areas. Beginning in 2022, street light replacement will move to the Operations & Maintenance budget.

| | | |
|------------|--------------|--------------------|
| FY 2016/17 | Material | 400,000 |
| FY 2017/18 | Material | 300,000 |
| FY 2018/19 | Material | 250,000 |
| FY 2019/20 | Material | 250,000 |
| FY 2020/21 | Material | 250,000 |
| FY 2021/22 | Material | 250,000 |
| | Total | <u>\$1,700,000</u> |

LOCATION

City of Ames & Ames Electric Service Territory

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Materials | 1,000,000 | 250,000 | 250,000 | 250,000 | 250,000 | |
| | TOTAL | 250,000 | 250,000 | 250,000 | 250,000 | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 1,000,000 | 250,000 | 250,000 | 250,000 | 250,000 | |
| | TOTAL | 250,000 | 250,000 | 250,000 | 250,000 | |

PROGRAM - ACTIVITY:

Utilities - Electric Distribution

DEPARTMENT:

Electric Services

ACCOUNT NO.

530-4844-489

**FEEDER RELOCATE AND EXTENSION
(MORTENSEN ROAD AND STATE AVENUE)**

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will extend a 13.8kV double-circuit overhead pole line approximately ½ mile north of Mortensen Road along the west side of State Avenue and approximately ¼ mile east to connect to two existing feeders. Construction will also include approximately ¼ mile of underground 13.8kV feeder west of State Avenue along Tripp Street to provide service to a new development, and to connect to an existing 13.8kV line that exists on Tripp Street west of the planned new development. The developer will offset the excess costs of the underground portion of this feeder by installing the substructures for the necessary feeder extension through its development. This overhead route effectively relocates approximately 0.4 miles of a double circuit overhead line that currently runs north from Mortensen Road through the Iowa State University (ISU) athletic fields. ISU has requested that these lines be relocated in conjunction with this new construction in order to avoid redundant overhead lines in close proximity to each other.

ISU will provide the necessary easement for crossing its property along the west side of State Avenue, north of Mortensen Road, and for the relocated portion of line east of State Avenue to reconnect the existing feeders. Additionally, this project will reconstruct approximately ½ mile of deteriorated overhead distribution line along the north side of Mortensen Road between State Avenue and Welch Avenue. The Substation feeder exits are currently deteriorated, direct-buried underground cables that have experienced failures. These will all be replaced and rerouted as part of the new construction plans for these feeder projects. This will include the addition of padmounted switchgear to create necessary feeder ties to facilitate emergency and planned outage switching.

COMMENTS

| | | |
|------------|--------------|--------------------|
| FY 2016/17 | Engineering | 140,000 |
| FY 2017/18 | Construction | 520,000 |
| FY 2018/19 | Construction | 520,000 |
| | Total | <u>\$1,180,000</u> |

LOCATION

3040 Mortensen Road

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|--------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 520,000 | 520,000 | | | | |
| | TOTAL | 520,000 | 520,000 | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 520,000 | 520,000 | | | | |
| | TOTAL | 520,000 | 520,000 | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|-----------------------------------|--------------------|--------------------|
| Utilities - Electric Distribution | Electric Services | 530-4832-489 |

STREET LIGHT AND LINE RELOCATIONS

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This work is being coordinated with Public Works' road improvement projects and will require the relocation of various electric facilities, including street lights, services, and distribution lines.

LOCATION

- 2018/19: Grand Avenue Extension (\$100,000); Hickory Drive (Westbrook Drive to Woodland Street) (\$50,000)
- 2019/20: Campustown Public Improvements (\$50,000); East 20th Street (Duff Avenue to Meadowlane Avenue) (\$50,000); Lincoln Way Alley (Duff Avenue to Sherman Avenue) (\$50,000); 9th Street (Grand Avenue to Clark Avenue) (\$25,000) and various locations associated with Asphalt Street Pavement Improvements (\$50,000) and Concrete Pavement Improvements (\$50,000)
- 2020/21: Cherry Avenue Extension (\$100,000); and various locations associated with Asphalt Street Pavement Improvements (\$25,000)
- 2021/22: Woodland Street (Hickory Drive to Forest Glen) (\$75,000); 13th Street (Wilson Avenue to Duff Avenue) (\$50,000); and various locations associated with Asphalt Street Pavement Improvements (\$25,000)
- 2022/23: Airport Road (University Boulevard to South Riverside Drive) (\$100,000); Lincoln Way (Marshall Avenue to Franklin Avenue) (\$50,000); and various locations associated with Asphalt Street Pavement Improvements (\$25,000) and Concrete Pavement Improvements (\$50,000)

An additional \$575,000 has been added to this program for FY 2017/18 for line relocations needed in conjunction with the Grand Avenue Extension project.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 875,000 | 150,000 | 225,000 | 125,000 | 150,000 | 225,000 |
| TOTAL | 875,000 | 150,000 | 225,000 | 125,000 | 150,000 | 225,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 875,000 | 150,000 | 225,000 | 125,000 | 150,000 | 225,000 |
| TOTAL | 875,000 | 150,000 | 225,000 | 125,000 | 150,000 | 225,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Extension/Improvements

DEPARTMENT:

Electric Services

ACCOUNT NO.

530-4823-489

DAYTON AVE SUBSTATION SWITCHGEAR UPGRADES**PROJECT STATUS:** DelayedCity of Ames, Iowa
Capital Improvements Plan**DESCRIPTION/JUSTIFICATION**

This project will upgrade two existing 13.8 kV distribution metal clad switchgear lineups at the Dayton Avenue Substation. The oldest switchgear has obsolete air blast breakers, no main breaker, and electro-mechanical relays. This switchgear needs to be replaced with all new switchgear with vacuum interrupter breakers, a main breaker, and microprocessor relays. The second switchgear has vacuum interrupter feeder breakers, which do not need to be replaced, but it has no main breaker and uses older style relays. This project will provide for the addition of a main breaker and replacement of existing distribution relays with modern microprocessor-based relays.

The addition of a main breaker will improve safety for workers and improve system reliability through the use of low maintenance breakers and relays.

These upgrades are consistent with recommended electric utility industry engineering practices.

LOCATION

Dayton Avenue Substation, Pullman Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------------------|------------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 200,000 | | | 200,000 | | |
| Construction | 950,000 | | | | 950,000 | |
| TOTAL | 1,150,000 | | | 200,000 | 950,000 | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 1,150,000 | | | 200,000 | 950,000 | |
| TOTAL | 1,150,000 | | | 200,000 | 950,000 | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Utilities - Electric Distribution | | Electric Services | | | | |

**MORTENSEN ROAD SUBSTATION 69KV
TRANSFORMER PROTECTION**

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is for the addition of a 69kV breaker, relays, and controls to replace the fuse protection on the distribution transformer. This project also includes replacement of two obsolete oil circuit breakers with low-maintenance SF6 gas breakers.

COMMENTS

Use of breakers for transformer protection is consistent with recommended engineering practice in the electric utility industry and will minimize damage to the transformer and surrounding facilities and provide better worker safety in the event of a fault. Oil circuit breakers are obsolete and require increased maintenance. The use of SF6 gas breakers represents best current practices for utility substations for reduced maintenance and fast, reliable operation.

| | | |
|------------|--------------|-------------------|
| FY 2020/21 | Engineering | 150,000 |
| FY 2021/22 | Construction | 500,000 |
| | Total | <u>\$ 650,000</u> |

Iowa State University's (ISU) share of the project is based on a load-ratio-share at the time of implementation. ISU's load-ratio-share decreases as the City's load increases, so the City will likely pay a larger share as the project is delayed. For budgetary purposes, staff is assuming the ISU load-ratio-share to be 18%.

LOCATION

Mortensen Road Substation, 3040 Mortensen Road

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|---------|---------|----------------|----------------|---------|
| COST: | | | | | | |
| Engineering | 150,000 | | | 150,000 | | |
| Construction | 500,000 | | | | 500,000 | |
| TOTAL | 650,000 | | | | 500,000 | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 533,000 | | | 123,000 | 410,000 | |
| Iowa State University | 117,000 | | | 27,000 | 90,000 | |
| TOTAL | 650,000 | | | 150,000 | 500,000 | |

PROGRAM - ACTIVITY:

Utilities - Electric Distribution

DEPARTMENT:

Electric Services

ACCOUNT NO.

VET MED SUBSTATION SWITCHGEAR UPGRADE

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will upgrade the original 13.8 kV distribution metalclad switchgear at Vet Med Substation. The Vet Med expansion in 2011 installed two new transformers and switchgear, but the existing metalclad switchgear was not upgraded at that time. This project upgrades the metalclad switchgear to add a main breaker and replaces older existing relays to current standards. The addition of a main breaker will improve safety for workers and improve system reliability, since the use of low maintenance breakers and relays provide protection that operates more quickly and selectively.

These upgrades are consistent with electric utility industry engineering practices.

| | | |
|------------|--------------|-------------------|
| FY 2021/22 | Engineering | 100,000 |
| FY 2022/23 | Construction | 750,000 |
| | Total | \$ 850,000 |

LOCATION

Vet Med Substation, South Riverside Drive

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 100,000 | | | | 100,000 | |
| Construction | 750,000 | | | | | 750,000 |
| TOTAL | 850,000 | | | | 100,000 | 750,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 850,000 | | | | 100,000 | 750,000 |
| TOTAL | 850,000 | | | | 100,000 | 750,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Distribution

DEPARTMENT:

Electric Services

ACCOUNT NO.

UNIT 8 SUPERHEAT AND GENERATING BANK REPLACEMENT

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to replace the tubing in the superheats and generating bank section of the Unit 8 boiler. After switching from coal to natural gas, the plant has found the tubes to be degrading much faster than anticipated. The high moisture created during the combustion of natural gas, combined with the chlorides and acid gases created when combusting RDF, causes the tube metal surface to corrode very quickly. The current superheat sections and the generating bank tubes thicknesses have been dramatically reduced and need to be replaced. An Inconel coating will be added to the new tubes to help them stand up to the harsh environment.

COMMENTS

| | | |
|---------|---------------------------------------|-------------|
| 2017/18 | Engineering | \$ 50,000 |
| 2018/19 | Materials and Labor – Superheat | 4,500,000 |
| 2023/24 | Materials and Labor – Generating Bank | 2,000,000 |
| | | \$6,550,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|------------------|------------------|---------|---------|---------|---------|
| COST: | | | | | | |
| Construction - Superheat | 4,500,000 | 4,500,000 | | | | |
| TOTAL | 4,500,000 | 4,500,000 | | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 4,500,000 | 4,500,000 | | | | |
| TOTAL | 4,500,000 | 4,500,000 | | | | |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

530-4864-489

POWER PLANT RELAY/CONTROL REPLACEMENT

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will replace existing electro-mechanical 13.8kV feeders and 4160kv bus differential relays in the Power Plant. The existing relays are obsolete electro-mechanical devices which are becoming difficult to maintain and repair, as replacement parts are no longer manufactured. By installing modern, programmable relays and updated controls in this location, long-term reliability can be improved by eliminating the obsolete and maintenance-intensive electro-mechanical relays. This project will likely take three to four years to complete.

These upgrades are consistent with recommended electric utility industry engineering practices.

COMMENTS

| | | |
|---------|--|------------|
| 2017/18 | Engineering, Materials and Labor (estimated) | 175,000 |
| 2018/19 | Materials and Labor (estimated) | 125,000 |
| 2019/20 | Materials and Labor (estimated) | 125,000 |
| | | \$ 425,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|----------------|----------------|---------|---------|---------|
| COST: | | | | | | |
| Construction | 250,000 | 125,000 | 125,000 | | | |
| TOTAL | 250,000 | 125,000 | 125,000 | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 250,000 | 125,000 | 125,000 | | | |
| TOTAL | 250,000 | 125,000 | 125,000 | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|---------------------------------|--------------------|--------------------|
| Utilities - Electric Production | Electric Services | 530-4862-489 |

UNIT 7 SURFACE CONDENSER TUBE REPLACEMENT

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Unit 7 surface condenser tubes were replaced in 2007 with Original Equipment Manufacturer materials of admiralty brass. The main alloys in admiralty brass are Copper and Zinc, both of which are now regulated metals on our National Pollutant Discharge Elimination System permit that was issued by the Iowa Department of Natural Resources in July of 2017. These tubes need to be replaced with stainless steel to maintain compliance with the permit.

COMMENTS

| | | |
|---------|---------------------|-----------------|
| 2018/19 | Engineering | \$ 50,000 |
| 2019/20 | Materials and Labor | 750,000 |
| | | <hr/> \$800,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 50,000 | 50,000 | | | | |
| Materials and Labor | 750,000 | | 750,000 | | | |
| TOTAL | 800,000 | 50,000 | 750,000 | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 800,000 | 50,000 | 750,000 | | | |
| TOTAL | 800,000 | 50,000 | 750,000 | | | |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric

ACCOUNT NO.

530-4863-489

POWER PLANT PARTS INVENTORY BUILDING

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to build a heated storage building for power plant inventory parts. Inventory is currently located throughout the Power Plant due to space restrictions. This has caused issues with inventory tracking, cataloging and location. This building would allow for precise organization and control of inventory, simplify plant shipping and receiving, and it would also house the staging of parts and tools for scheduled repairs.

COMMENTS

The building will be located within the utility campus. Exact location has not yet been identified.

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Materials And Labor | 200,000 | 200,000 | | | | |
| TOTAL | 200,000 | 200,000 | | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 200,000 | 200,000 | | | | |
| TOTAL | 200,000 | 200,000 | | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|---------------------------------|--------------------|--------------------|
| Utilities - Electric Production | Electric Services | 530-4881-489 |

UNIT 7 BOILER TUBE REPAIR

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to replace the tubing in the water wall and superheat sections of the Unit 7 boiler. The Unit 7 boiler is 40 years old and in need of tube repairs. Staff has devised a long-term plan to maintain the operation of the unit through maintenance, engineering, and re-tubing of the boiler. After switching from coal to natural gas, the plant has found the tubes to be degrading much faster than anticipated. The high moisture created during the combustion of natural gas, combined with the chlorides and acid gases created when combusting RDF, causes the tube metal surface to corrode very quickly. The current boiler tube section thicknesses have been dramatically reduced and need to be replaced. An Inconel coating will be added to the new tubes to help them stand up to the harsh environment. The cost estimates include labor and materials.

COMMENTS

| | | |
|---------|--|--------------|
| 2015/16 | Engineering | 5,150 |
| 2016/17 | Engineering | 125,796 |
| 2017/18 | Engineering | 50,000 |
| 2019/20 | Materials/labor – superheat and water wall | 5,650,000 |
| Total | | \$ 5,830,946 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|------------------|---------|------------------|---------|---------|---------|
| COST: | | | | | | |
| Construction | 5,650,000 | | 5,650,000 | | | |
| TOTAL | 5,650,000 | | 5,650,000 | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 5,650,000 | | 5,650,000 | | | |
| TOTAL | 5,650,000 | | 5,650,000 | | | |

PROGRAM - ACTIVITY:

Utilities - Electric

DEPARTMENT:

Electric Services

ACCOUNT NO.

UNDERGROUND STORAGE TANK REMOVAL

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

There are two 42,000 gallon underground tanks in service that store #2 fuel oil for Units #7 and #8. These are original tanks installed during the construction of Unit #8. They have been in the ground for 30 years and are functional with no operational issues at this time. Testing completed in 2011 indicated that there are no problems. However, due to the age of these tanks (30 years is the expected safe life), it is very possible that an oil leak could occur, causing expensive cleanup. They are no longer needed now that the plant has been converted to natural gas.

COMMENTS

It is prudent to plan to remove these tanks rather than leave them in the ground.

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------------|----------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 15,000 | | 15,000 | | | |
| Equipment and Labor | 235,000 | | | 235,000 | | |
| TOTAL | 250,000 | | 15,000 | 235,000 | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 250,000 | | 15,000 | 235,000 | | |
| TOTAL | 250,000 | | 15,000 | 235,000 | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Utilities - Electric Production | | Electric Services | | | | |

UNIT 7 EXCITER REPLACEMENT

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to replace the Unit 7 exciter. The current exciter is water-cooled, using copper tubes to run through the electronics. The tubes are fouled and plugged. Efforts to clear the tubes have not been successful. The exciter must constantly have the cabinet doors open with a large fan blowing air across the hardware to reduce the temperature. The replacement will install new, updated controls and cooling system, not only allowing for better cooling but also more control and better monitoring of the exciter.

COMMENTS

| | | |
|---------|-----------------------------------|-----------|
| 2020/21 | Engineering, materials, and labor | \$250,000 |
| | | \$250,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|---------|---------|----------------|---------|---------|
| COST: | | | | | | |
| Engineering | 50,000 | | | 50,000 | | |
| Construction | 200,000 | | | 200,000 | | |
| TOTAL | 250,000 | | | 250,000 | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 250,000 | | | 250,000 | | |
| TOTAL | 250,000 | | | 250,000 | | |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

COAL YARD RECLAMATION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

In the spring of 2016, the Power Plant was converted from coal-fired to natural gas-fired. This project is to perform activities to reclaim the area used for coal storage, and turn it into a green space.

COMMENTS

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------------|----------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 50,000 | | | 50,000 | | |
| Construction | 450,000 | | | 450,000 | | |
| TOTAL | 500,000 | | | 500,000 | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 500,000 | | | 500,000 | | |
| TOTAL | 500,000 | | | 500,000 | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Utilities - Electric Production | | Electric Services | | | | |

COMBUSTION TURBINE 2 CONTROLS UPGRADE

PROJECT STATUS: Delayed

Cost Increase

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to replace the current outdated controls on Combustion Turbine 2 (CT2) with updated controls. The current control hardware and software is over 11 years old and is no longer supported by GE. This project will also integrate the Balance of Plant (BOP) control system that is currently run on a separate system. The BOP control system is a unique system that was created specifically for the Ames site when CT2 was built. It is used to operate all of the balance of plant equipment on the Combustion Turbine. It is also used to remotely run the Combustion Turbine by allowing the Operator to control it from the Power Plant control room. The BOP system does not allow the Operator to see all the Combustion Turbine controls and is supported by a system that is not able to be run on new computers.

This project will replace the BOP system software and hardware, replace the outdated Combustion Turbine control software and hardware, and allow for remote operation from the Power Plant control room through a reliable connection with full view of all controls.

COMMENTS

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------------|----------------|---------|---------|---------|---------------|----------------|
| COST: | | | | | | |
| Engineering/Design/Construction | 750,000 | | | | 50,000 | 700,000 |
| TOTAL | 750,000 | | | | 50,000 | 700,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 750,000 | | | | 50,000 | 700,000 |
| TOTAL | 750,000 | | | | 50,000 | 700,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

UNIT 7 CLOSED LOOP COOLING WATER SYSTEM

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to install a new closed loop Glycol cooling system on Unit 7. Currently all of the equipment on Unit 7 that needs to be cooled, such as Boiler Feed Pumps, hydrogen coolers, Air Heater, Force Draft fan bearings, and the Exciter, are cooled with open loop systems from well water, cooling tower water, or City water. These waters are difficult to treat and cause equipment to get dirty quickly, preventing good heat exchange and higher running temperatures. A closed loop Glycol system would allow for better cooling efficiencies and be more economical.

COMMENTS

| | | | |
|---------|---------------------------------|--|-----------|
| 2022/23 | Engineering, Material and Labor | | \$400,000 |
| | | | \$400,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|---------|---------|---------|---------|----------------|
| COST: | | | | | | |
| Engineering | 50,000 | | | | | 50,000 |
| Construction | 350,000 | | | | | 350,000 |
| TOTAL | 400,000 | | | | | 400,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 400,000 | | | | | 400,000 |
| TOTAL | 400,000 | | | | | 400,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

POWER PLANT FIRE PROTECTION SYSTEM

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The City's insurance carrier has made several loss prevention recommendations for the Power Plant. The cost, schedule for installation, and recent history of the recommendations are as follows:

| | | |
|------------|---------------------------------|--------------|
| FY 2011/12 | Engineering for Plant Fire Plan | 30,000 |
| FY 2014/15 | Gas Turbine 2 | 45,997 |
| FY 2015/16 | Gas Turbine 1 | 204,003 |
| FY 2017/18 | GT Fire Protection | 782,005 |
| FY 2022/23 | Turbine Generator #8 | 250,000 |
| | | \$ 1,312,005 |

COMMENTS

A serious fire in any one of the systems can force the outage of either Unit 7 or 8 or the entire Power Plant. Replacement power during an extended period of time can be very expensive.

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------------|----------------|--------------------|--------------------|---------|---------|----------------|
| COST: | | | | | | |
| Construction | 250,000 | | | | | 250,000 |
| TOTAL | 250,000 | | | | | 250,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 250,000 | | | | | 250,000 |
| TOTAL | 250,000 | | | | | 250,000 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Utilities - Electric Production | | Electric Services | | | | |

**ENGINEERING STUDY FOR NEW SOLID WASTE
BOILER UNIT**

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Given the market conditions of lower cost electricity and the amount of money spent on natural gas to burn Refuse Derived Fuel, the utility will explore the cost and feasibility of building a solid waste boiler and then generating electricity from the steam produced. The retired Unit 6 turbine/generator could possibly be used with the new boiler to substantially lower the overall cost to build such a unit. Reducing run times for the existing baseload Units #7 and #8 would extend their life and reduce electric rates to our customers. An Engineering Study will be needed to perform a feasibility study for building and operating the boiler and emissions controls.

COMMENTS

2022/23

Engineering

\$50,000

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 50,000 | | | | | 50,000 |
| Construction | | | | | | |
| TOTAL | 50,000 | | | | | 50,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 50,000 | | | | | 50,000 |
| TOTAL | 50,000 | | | | | 50,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|---------------------------------|--------------------|--------------------|
| Utilities - Electric Production | Electric Services | |

UNIT 7 TURBINE GENERATOR OVERHAUL

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The Unit 7 turbine generator will be disassembled and necessary repairs made after 20,000 hours of operation. An inspection was last done in 2007 and the unit is now due for an overhaul in FY 2018/19.

COMMENTS

This work is required to inspect the turbine and generator for repairs that may be needed to avoid catastrophic failure of equipment. This overhaul is recommended by boiler and machinery insurance carriers and follows accepted industry standards. Repairs and replacement of worn parts will be done as problems are located during the inspection. The budget covers the inspection process and normal repair/replacement work that should be expected after 20,000 hours of operation. The cost increase is due to a change from a minor overhaul to a major overhaul which requires the physical opening of the turbine housing.

| | | |
|------------|-------------------|---------------------|
| FY 2017/18 | Engineering/Parts | 750,000 |
| FY 2018/19 | Labor | 1,500,000 |
| FY 2018/19 | GE Tech Support | 300,000 |
| | Total | \$ 2,550,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|------------------|------------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Turbine Overhaul | 1,500,000 | 1,500,000 | | | | |
| GE Tech Support | 300,000 | 300,000 | | | | |
| TOTAL | 1,800,000 | 1,800,000 | | | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 1,800,000 | 1,800,000 | | | | |
| TOTAL | 1,800,000 | 1,800,000 | | | | |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

530-4874-489

UNIT 8 TURBINE GENERATOR OVERHAUL

PROJECT STATUS: Delayed

Cost Decrease

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The Unit 8 turbine generator will be disassembled and inspected after 20,000 hours of operation. An overhaul/inspection was done in FY 2012/13 and is due again. This work is required to replace worn parts and inspect the turbine and generator for repairs that may be needed to avoid catastrophic failure of equipment. This overhaul is recommended by boiler and machinery insurance carriers and follows accepted industry standards.

COMMENTS

During the last overhaul/inspection of the unit in FY 2012/13, the contractor was able to repair or rebuild most of the worn parts, but noted that some parts will need to be replaced during the next overhaul. Turbine generator parts have long lead delivery times and need to be ordered well in advance of the generator repair process to prevent unnecessary delays in the assembly of the unit. This project involves procuring parts for the Unit 8 turbine generator overhaul, and then installing them in the following fiscal year. Parts to be ordered include a first stage nozzle, several blading stages, and one diaphragm. Other parts to be procured will include a pilot valve and cylinder, main operating valve, shaft and piston, speed relay valve shaft, cylinder and linkage, shaft packing sets, shaft and thrust bearings, and hydrogen seals.

| | | |
|---------|----------------|---------------------|
| 2019/20 | Material/Parts | 1,000,000 |
| 2020/21 | Construction | 2,000,000 |
| | Total | \$ 3,000,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|------------------|---------|------------------|------------------|---------|---------|
| COST: | | | | | | |
| Materials/Parts | 1,000,000 | | 1,000,000 | | | |
| Construction | 2,000,000 | | | 2,000,000 | | |
| TOTAL | 3,000,000 | | 1,000,000 | 2,000,000 | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 3,000,000 | | 1,000,000 | 2,000,000 | | |
| TOTAL | 3,000,000 | | 1,000,000 | 2,000,000 | | |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

POWER PLANT BUILDING MODIFICATIONS

PROJECT STATUS: Cost Decrease Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will bring much needed improvements to the Power Plant. The Power Plant is a City building that has gone through several changes over the last 50 years. This project is a multi-year effort to make the building more energy efficient, meet current building requirements, and install security features.

| | | |
|---------|--|--------------|
| 2017/18 | Repair/replace block windows and Install Card reader security system | 350,000 |
| 2018/19 | HVAC replacement for old relay room | 150,000 |
| 2021/22 | Office, design, and build new entrance; ADA compliant | 500,000 |
| 2022/23 | Turbine Deck improvements: Walls - clean and paint; Replace south windows; Floor - epoxy floor | 300,000 |
| | Total | \$ 1,300,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|----------------|---------|---------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 50,000 | | | | 50,000 | |
| Construction | 900,000 | 150,000 | | | 450,000 | 300,000 |
| TOTAL | 950,000 | 150,000 | | | 500,000 | 300,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 950,000 | 150,000 | | | 500,000 | 300,000 |
| TOTAL | 950,000 | 150,000 | | | 500,000 | 300,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

530-4870-489

UNIT 8 PRECIPITATOR RECONSTRUCTION

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will provide for the replacement of the lagging, insulation and support steel of a 33-year-old precipitator. There have been numerous repairs done over the years, but the outer lagging and insulation are now in need of a complete replacement. Over time, the support steel has failed due to rusting and fatigue with the breaking of attachment tabs. Due to the precipitator's height of approximately 155 to 210 feet in the air and approximately 20,000 square feet, it will require scaffolding and be costly to repair. Failure to repair all four sides from top to bottom could result in a catastrophic failure. If the lagging were to let go, the "skin" could fall on people, equipment, or the railroad track.

COMMENTS

The entire lagging, insulation, and some support steel need to be replaced for the safe, continued operation of the precipitator.

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------------|------------------|--------------------|--------------------|------------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 45,000 | | | 45,000 | | |
| Materials and Labor | 955,000 | | | 955,000 | | |
| TOTAL | 1,000,000 | | | 1,000,000 | | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 1,000,000 | | | 1,000,000 | | |
| TOTAL | 1,000,000 | | | 1,000,000 | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Utilities - Electric Production | | Electric Services | | | | |

UNIT 7 MAIN STEAM LINE INSULATION REPLACEMENT PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The entire main steam line on Unit 7, from the boiler to the turbine, is insulated with asbestos insulation. The asbestos has caused issues with performing repairs around the line as well as performing high energy pipe testing. The asbestos will be entirely removed and new insulation and lagging will be installed.

COMMENTS

| | | |
|---------|---------------------|-----------|
| 2021/22 | Engineering | \$ 10,000 |
| 2021/22 | Materials and Labor | 200,000 |
| | | \$210,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|---------|---------|---------|----------------|---------|
| COST: | | | | | | |
| Engineering | 10,000 | | | | 10,000 | |
| Construction | 200,000 | | | | 200,000 | |
| TOTAL | 210,000 | | | | 210,000 | |
| FINANCING: | | | | | | |
| Electric Utility Fund | 210,000 | | | | 210,000 | |
| TOTAL | 210,000 | | | | 210,000 | |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

UNIT 5 AND 6 BOILER REMOVAL

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to remove the Unit 5 boiler and Turbine/Generator and Unit 6 Boiler. Unit 5 and 6 were decommissioned in 1986. The equipment is very outdated and unusable. The boilers were built with asbestos refractory and pipe insulation, and while the equipment is not used any longer, the area around the equipment is, so the asbestos material poses a risk for employees to work around. The area the equipment occupies can be better used to serve the plant such as better maintenance shop space.

COMMENTS

| | | |
|---------|-------------------------------------|-----------|
| 2022/23 | Engineering, demolition and removal | \$500,000 |
| | | \$500,000 |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|----------------|---------|---------|---------|---------|----------------|
| COST: | | | | | | |
| Engineering | 30,000 | | | | | 30,000 |
| Demolition and Removal | 470,000 | | | | | 470,000 |
| TOTAL | 500,000 | | | | | 500,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 500,000 | | | | | 500,000 |
| TOTAL | 500,000 | | | | | 500,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

UNIT 8 STACK EXTERIOR REFINISHING

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The coating on the outside of the Unit 8 stack has delaminated and needs to be repaired. The exterior of the stack will be prepped and then a new coating will be applied.

COMMENTS

| | | | |
|---------|-----------------------------------|-----------|--|
| 2022/23 | Engineering, Materials, and Labor | \$150,000 | |
| | | \$150,000 | |

LOCATION

Power Plant, 200 East 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|---------|---------|---------|---------|----------------|
| COST: | | | | | | |
| Engineering | 25,000 | | | | | 25,000 |
| Construction | 125,000 | | | | | 125,000 |
| TOTAL | 150,000 | | | | | 150,000 |
| FINANCING: | | | | | | |
| Electric Utility Fund | 150,000 | | | | | 150,000 |
| TOTAL | 150,000 | | | | | 150,000 |

PROGRAM - ACTIVITY:

Utilities - Electric Production

DEPARTMENT:

Electric Services

ACCOUNT NO.

UTILITIES - WATER PRODUCTION/TREATMENT

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--|-------------------|------------------|------------------|------------------|------------------|----------------|------|
| PROJECT: | | | | | | | |
| Advanced Metering Infrastructure | 1,056,000 | 197,000 | 204,000 | 211,000 | 218,000 | 226,000 | 53 |
| Water Plant Facility Improvements | 1,861,000 | 440,000 | 100,000 | - | 670,000 | 651,000 | 54 |
| Water Supply Expansion | 577,500 | 577,500 | - | - | - | - | 55 |
| Wellhead Rehabilitation | 370,000 | 370,000 | - | - | - | - | 56 |
| Old Water Treatment Plant Demolition | 3,520,000 | 35,000 | 3,485,000 | - | - | - | 57 |
| Well Field Standby Power | 904,000 | - | - | 904,000 | - | - | 58 |
| Lime Lagoon Expansion | 1,104,000 | - | - | 114,000 | 990,000 | - | 59 |
| Distribution System Monitoring Network | 985,000 | - | - | - | 985,000 | - | 60 |
| TOTAL PROJECT EXPENDITURES | 10,377,500 | 1,619,500 | 3,789,000 | 1,229,000 | 2,863,000 | 877,000 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| State Revolving Fund Loans | 3,520,000 | 35,000 | 3,485,000 | - | - | - | |

UTILITIES - WATER PRODUCTION/TREATMENT, continued

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------------------|-------------------|------------------|------------------|------------------|------------------|----------------|
| FUNDING SOURCES, continued | | | | | | |
| City: | | | | | | |
| Water Utility Fund | 5,824,500 | 1,564,500 | 304,000 | 551,000 | 2,528,000 | 877,000 |
| Sewer Utility Fund | 355,000 | 20,000 | - | - | 335,000 | - |
| Total City Funding | 6,179,500 | 1,584,500 | 304,000 | 551,000 | 2,863,000 | 877,000 |
| Other: | | | | | | |
| FEMA Hazard Mitigation Grant | 678,000 | - | - | 678,000 | - | - |
| TOTAL FUNDING SOURCES | 10,377,500 | 1,619,500 | 3,789,000 | 1,229,000 | 2,863,000 | 877,000 |

ADVANCED METERING INFRASTRUCTURE

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

This is a multi-year project to convert the water meter reading system from the existing generator/remote technology to the current industry standard of Automated Meter Reading/Advanced Metering Infrastructure (AMR/AMI). While the project includes water meter reading only, the system being implemented will accommodate electric meters as well, should that be desired in the future.

COMMENTS

The water meter reading system installed prior to 2015 is a mechanical system that transmits the meter reading from the water meter (located inside the property) to a remote register on the outside of the property using a low-voltage cable. This technology is obsolete and is no longer available. A cross-departmental team evaluated multiple technology platforms utilizing various combinations of “walk-by” or “drive-by” reads, radio reads, cellular reads, and other methods of obtaining meter readings. The team concluded that an AMR walk-by or drive-by system would be the most cost-effective, short-term solution to replace the old technology. The City has entered into a contract with Itron, Inc. to provide the radio read system, reading equipment, and software; and Badger Meter, Inc. to provide water meters for this project. This system is capable of being upgraded to a more sophisticated AMI system in the future that could provide more detailed data collection and could allow meter reading from the office without the need to send a meter reader out into the field.

The replacement program began in FY 2014/15, focusing initially on meter locations that were problematic for the Meter Readers to access. Much of the next two years focused on replacing meters in areas that are not served by the Ames Municipal Electric System, which, as a result, are locations that are more expensive to read on a per-meter basis. The final years will pick up the balance of the meter inventory.

The cost to replace 1,400 meters per year is budgeted in the Water Meter Division’s operating budget (400 meters for new construction and 1,000 for routine meter replacement). The cost for an additional 1,100 replacements is included annually as a part of this CIP project. This is the same number of meters per year as was shown in last year’s CIP. The final year of this CIP (FY 2022/23) is the final year of this multi-year project.

LOCATION

City-wide

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Equipment | 1,056,000 | 197,000 | 204,000 | 211,000 | 218,000 | 226,000 |
| TOTAL | 1,056,000 | 197,000 | 204,000 | 211,000 | 218,000 | 226,000 |
| FINANCING: | | | | | | |
| Water Utility Fund | 1,056,000 | 197,000 | 204,000 | 211,000 | 218,000 | 226,000 |
| TOTAL | 1,056,000 | 197,000 | 204,000 | 211,000 | 218,000 | 226,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|-----------------------------|--------------------|
| Utilities - Water Meter | Water and Pollution Control | 510-3947-489 |

WATER PLANT FACILITY IMPROVEMENTS

PROJECT STATUS: Cost Change

Scope Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project involves annual equipment repairs, major maintenance activities, replacement, and upgrades at the Water Treatment Plant, Technical Services Complex (TSC), and associated remote facilities such as wells, elevated tanks, and booster pump stations.

COMMENTS

The schedule for these improvements is as follows:

| | | |
|---------|--------------------|--|
| 2018/19 | 440,000 | Dehumidification in Lime Slaking Building (\$400,000); TSC HVAC Controls (\$40,000) |
| 2019/20 | 100,000 | SCADA / Security Modifications |
| 2021/22 | 670,000 | TSC improvements (split with WPC) |
| 2022/23 | 651,000 | Add (2) High Service Pumps at E 13 th St. Pump Station (\$370,000); Switchgear Preventative Maintenance (\$81,000); Supervisory Control and Data Acquisition (SCADA) Server Replacement (\$200,000) |
| Total | <u>\$1,861,000</u> | |

Dehumidification of the Lime Slaking Building (FY 2018/19) is needed to preserve the life span of electrical systems and piping. Supervisory Control and Data Acquisition (SCADA) & Security Modifications (FY 2019/20) are to address modifications and improvements to these systems that come to light after utilizing them for approximately two years. The main electrical switchgear at the new plant is scheduled for routine preventative maintenance every five years. The TSC Improvements (FY 2021/22) will provide: heated storage bays and new garage stalls for laboratory equipment and vehicles; and the addition of an elevator to the building. Chemical Feed Modifications (FY 2020/21) provide additional redundancy and improved operations by installing redundant lime dosing assemblies, revising the auger on the lime slaker feeds, and straightening the lime fill lines. The new Water Plant was initially constructed with two high service pumps, with provisions to add four additional pumps over time. Two of the four additional pumps are planned to be added in FY 2022/23. The SCADA Server Replacement (FY 2022/23) is a planned replacement of the critical computer components of the plant's control system. Additional improvements may be identified in future years. The schedule may change in response to impending failures, regulatory agency requirements, etc.

LOCATION

Technical Services Complex, 300 E 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 55,500 | 43,000 | 7,500 | | | 5,000 |
| Construction | 1,605,500 | 397,000 | 92,500 | | 670,000 | 446,000 |
| Equipment | 200,000 | | | | | 200,000 |
| TOTAL | 1,861,000 | 440,000 | 100,000 | | 670,000 | 651,000 |
| FINANCING: | | | | | | |
| Water Utility Fund | 1,506,000 | 420,000 | 100,000 | | 335,000 | 651,000 |
| Sewer Utility Fund | 355,000 | 20,000 | | | 335,000 | |
| TOTAL | 1,861,000 | 440,000 | 100,000 | | 670,000 | 651,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|-----------------------------|-----------------------------|--|
| Utilities - Water Treatment | Water and Pollution Control | 510-3914-489 510-3907-489 520-3907-489 |

WATER SUPPLY EXPANSION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

As old wells fail and need to be replaced and as demand for treated water increases, additional wells must be drilled. This project will provide new and replacement source water capacity. With the development of the North River Valley Well Field budgeted in the current year, the developed water supply is estimated to be adequate to meet normal demands until approximately 2030.

COMMENTS

The oldest well field still in use was developed in the 1950s and 1960s. Many of these wells are losing capacity and the effectiveness of rehabilitating them is decreasing. Site separation constraints make it impossible to re-drill replacement wells in the same well field. Source water capacity is currently being increased in conjunction with the increased treatment capacity now available at the new Water Plant. While development of the next incremental capacity increase is projected to be approximately 10 years away, this project will proactively seek to secure land rights now.

The Water Utility currently owns land east of Interstate 35 just north of the South Skunk River. This project would seek to secure land at a location somewhere between the existing Youth Sports Complex Well Field and the I-35 Well Field. The exact location is yet to be determined, and will be dictated by both surface and underground features as well as finding a landowner interested in selling the land. The budget is based on a 50 acre site. The actual cost will depend on the particular site that is selected.

LOCATION

South Skunk River Valley south of Ames

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Appraisals, Legal, Administrative | 27,500 | 27,500 | | | | |
| Land Acquisition | 550,000 | 550,000 | | | | |
| TOTAL | 577,500 | 577,500 | | | | |
| FINANCING: | | | | | | |
| Water Utility Fund | 577,500 | 577,500 | | | | |
| TOTAL | 577,500 | 577,500 | | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|------------------------------|-----------------------------|--------------------|
| Utilities - Water Production | Water and Pollution Control | 510-3943-489 |

WELLHEAD REHABILITATION

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

This project involves the rehabilitation of the above-ground components of seven existing municipal supply wells.

COMMENTS

Each year the Water Plant's operating budget includes funds to rehabilitate four or five of the twenty-two wells. The routine well rehabilitation focuses on the below-ground portions of the wells such as the screens, casings, and pumps. In general, it does not address the condition of the above-ground parts of a well.

This project will focus primarily on replacing and updating the well controls in seven wells. It will involve replacing the existing control panels with two panels for each well, separating the high voltage power from the low voltage controls. It will also replace the outdated programmable logic controllers (PLC's) that are obsolete and no longer have replacements available. The project will also sandblast and repaint the above-ground discharge heads of 10 wells, preventing corrosion that could lead to contamination and a premature well failure.

LOCATION

Southeast Well Field and Hunziker Youth Sports Complex

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction - Controls | 286,000 | 286,000 | | | | |
| Construction - Painting | 84,000 | 84,000 | | | | |
| TOTAL | 370,000 | 370,000 | | | | |
| FINANCING: | | | | | | |
| Water Utility Fund | 370,000 | 370,000 | | | | |
| TOTAL | 370,000 | 370,000 | | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|------------------------------|-----------------------------|--------------------|
| Utilities - Water Production | Water and Pollution Control | 510-3950-489 |

DEMOLITION OF OLD WATER TREATMENT PLANT**PROJECT STATUS:** Revenue ChangeCity of Ames, Iowa
Capital Improvements Plan**DESCRIPTION/JUSTIFICATION**

This project will demolish the treatment structures at the old Water Treatment Plant site.

COMMENTS

The new Water Treatment Plant began operation during the summer of 2017. Now that the facility has been fully commissioned and is performing reliably, the treatment structures at the old plant can be torn down. This project will demolish the filter building, chemical feed building, external treatment basins, administrative offices, and ¾ million gallon ground storage reservoir. The two-story Technical Services Complex that houses the department's Water Meter and Laboratory Services Divisions will remain. Demolition will take place over a period of three years beginning in FY 2019/20.

The funding for the project has been changed to utilize the low-interest loans available through the State Revolving Fund administered by the Iowa DNR.

LOCATION300 E. 5th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------------------------|------------------|----------------|------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering/Admin | 382,000 | | 382,000 | | | |
| Construction | 3,138,000 | 35,000 | 3,103,000 | | | |
| TOTAL | 3,520,000 | 35,000 | 3,485,000 | | | |
| FINANCING: | | | | | | |
| Drinking Water State Revolving Fund | 3,520,000 | 35,000 | 3,485,000 | | | |
| TOTAL | 3,520,000 | 35,000 | 3,485,000 | | | |

| | | |
|------------------------------|-----------------------------|--------------------|
| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
| Utilities - Water Production | Water and Pollution Control | 512-3960-489 |

WELL FIELD STANDBY POWER

PROJECT STATUS: Delayed

Cost Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will provide standby electrical power to select wells located in the Hunziker Youth Sports Complex.

COMMENTS

Iowa's Water Supply Design Standards require that a water system have redundant electrical power available. Redundancy may be provided either through "connection to at least two independent public power sources" or by "portable or in-place internal-combustion engines." Redundant power is provided at the Water Treatment Plant and in the High Service Pump Station. Currently, however, none of the City wells are connected to a redundant power supply. Installing standby power was one of the recommendations contained in the utility's 2005 Vulnerability Assessment and Emergency Response Plan. Now that immediate priority recommendations in those documents have been addressed, standby power is now being proposed.

The wells located in the Hunziker Youth Sports Complex are among the highest capacity wells in the City's inventory. Installing standby power to at least some of these five wells would allow the water utility to continue to produce treated water, at a reduced capacity, in the event of a prolonged power outage. As future well fields are developed, standby power will become a standard design element.

The most recent update to the Story County Hazard Mitigation Plan specifically included the need for standby power for existing wells. This makes the project eligible for Pre-Hazard Mitigation Grants. The funding source is shown as a FEMA Hazard Mitigation Grant with a 25% local match from the Water Utility Fund. The project is again delayed one year, remaining in the third year of the CIP. The project will continue to always be shown in the third year until grant funding becomes available, in which case it will be accelerated. The cost change in the project is solely the inflationary cost increase from delaying the project by one year.

LOCATION

Hunzkier Youth Sports Complex

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 108,000 | | | 108,000 | | |
| Construction | 796,000 | | | 796,000 | | |
| TOTAL | 904,000 | | | 904,000 | | |
| FINANCING: | | | | | | |
| Water Utility Fund | 226,000 | | | 226,000 | | |
| FEMA Hazard Mitigation Grant | 678,000 | | | 678,000 | | |
| TOTAL | 904,000 | | | 904,000 | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|------------------------------|-----------------------------|--------------------|
| Utilities - Water Production | Water and Pollution Control | |

LIME LAGOON EXPANSION

PROJECT STATUS: Delayed

Cost Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will construct a new lime sludge storage cell inside the existing large Cell 4. The timing for constructing additional cells is staggered over time to match growth in demand.

COMMENTS

As a part of the conceptual design for the new Water Treatment Plant, a reconfiguration of the large Cell 4 was proposed. This reconfiguration will sub-divide the large cell into a series of smaller cells that are easier to operate and clean out. A total of five smaller interior cells were originally proposed. Later in the design process, the timeline for constructing the smaller cells was altered to include only the first cell as part of the construction of the new treatment facility. The additional cells will be added at five to seven year intervals; keeping pace with anticipated growth in demand.

This project includes: the construction of a new interior berm; underdrains, a decant/drain structure, inlet, outlet, and telescoping valves, and the associated engineering activities. The project does not include the necessary lime removal from the existing large cell; funding for lime removal will be included in the operating budget with the annual lime disposal activities.

The project has been delayed one year, based on both the timing of its anticipated need and the workload of staff to be able to move it forward. The cost change in the project is solely the inflationary cost increase from delaying the project by one year.

LOCATION

Water Plant lime lagoons south of East 13th Street west of the Skunk River

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 114,000 | | | 114,000 | | |
| Construction | 990,000 | | | | 990,000 | |
| TOTAL | 1,104,000 | | | 114,000 | 990,000 | |
| FINANCING: | | | | | | |
| Water Utility Fund | 1,104,000 | | | 114,000 | 990,000 | |
| TOTAL | 1,104,000 | | | 114,000 | 990,000 | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|------------------------------|-----------------------------|--------------------|
| Utilities - Water Production | Water and Pollution Control | |

DISTRIBUTION SYSTEM MONITORING NETWORK

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project will install a network of sensors in the drinking water distribution system to monitor pressure fluctuations in real time. The sensors will be connected to the Water Plant’s Supervisory Control and Data Acquisition (SCADA) network, allowing both treatment plant staff and distribution system staff access to the information.

COMMENTS

Pressure management in distribution systems is fundamental to providing safe drinking water. The loss of pressure can potentially allow ground water to contaminate the system. Pressure fluctuations can negatively impact the physical integrity of the pipes and result in water main breaks. When a water main breaks, it causes a pressure wave that is carried through the pipe network by the water. These sudden pressure changes, or transients, can be detected by pressure sensing instruments inserted into a water main. By installing and continuously monitoring a network of sensors, treatment plant operators and field crews can pinpoint the location of a water main break much more easily and quickly, improving the response time to isolate and repair a break. It also will provide real-time data to better determine if a boil water advisory is needed and to better delineate the areas that should be covered by a boil advisory.

Currently, pressure monitoring is done only at a very small number of locations that are connected to the Water Plant’s SCADA system, such as pump stations and elevated tanks. This project includes the addition of up to 25 monitoring nodes installed at key locations in the distribution system. The data would be monitored by the Water Plant Supervisory Control and Data Acquisition (SCADA) system, serving as an extension of the system into the distribution system.

LOCATION

Various locations

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Design | 105,000 | | | | 105,000 | |
| Equipment/Installation | 880,000 | | | | 880,000 | |
| TOTAL | 985,000 | | | | 985,000 | |
| FINANCING: | | | | | | |
| Water Utility Fund | 985,000 | | | | 985,000 | |
| TOTAL | 985,000 | | | | 985,000 | |

PROGRAM - ACTIVITY:

Utilities - Water Production

DEPARTMENT:

Water and Pollution Control

ACCOUNT NO.

UTILITIES - WATER POLLUTION CONTROL

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-----------------------------------|-------------------|------------------|------------------|------------------|------------------|-------------------|------|
| PROJECT: | | | | | | | |
| Digester Improvements | 2,777,000 | 2,600,000 | 177,000 | - | - | - | 62 |
| Cogeneration System Maintenance | 6,105,000 | 1,515,000 | - | - | - | 4,590,000 | 63 |
| WPC Plant Facility Improvements | 940,000 | 200,000 | 45,000 | - | - | 695,000 | 64 |
| Clarifier Maintenance | 705,000 | 705,000 | - | - | - | - | 65 |
| Structural Rehabilitation | 2,430,000 | 1,113,000 | - | 1,317,000 | - | - | 66 |
| Flow Equalization Expansion | 1,231,000 | - | 1,231,000 | - | - | - | 67 |
| Nutrient Reduction Modifications | 13,530,000 | - | - | - | 2,950,000 | 10,580,000 | 68 |
| Electrical System Maintenance | 97,000 | - | - | - | - | 97,000 | 69 |
| TOTAL PROJECT EXPENDITURES | 27,815,000 | 6,133,000 | 1,453,000 | 1,317,000 | 2,950,000 | 15,962,000 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| State Revolving Fund Loans | 19,351,000 | - | 1,231,000 | - | 2,950,000 | 15,170,000 | |
| City: | | | | | | | |
| Sewer Utility Fund | 8,464,000 | 6,133,000 | 222,000 | 1,317,000 | - | 792,000 | |
| TOTAL FUNDING SOURCES | 27,815,000 | 6,133,000 | 1,453,000 | 1,317,000 | 2,950,000 | 15,962,000 | |

DIGESTER IMPROVEMENTS**PROJECT STATUS:** Scope Change Cost ChangeCity of Ames, Iowa
Capital Improvements Plan**DESCRIPTION/JUSTIFICATION**

Recent process evaluations (Residuals Handling Study, 2010; Long-Range Facility Plan, 2012) identified a series of maintenance needs and improvements to the digesters to maintain the facility's solids handling capacity over the next 20 years. These activities include replacing pumping, piping, valves, and gas safety equipment.

COMMENTS

The WPC Facility uses anaerobic digestion as a core process for treating wastewater solids. The digestion process stabilizes waste, reduces the volume of solids, and provides a measure of pathogen destruction. The process also generates methane gas as a by-product. This gas is captured and used as a fuel source for on-site electrical generation.

The anticipated project schedule and budget are as follows:

| | | |
|---------|--------------|---|
| 2017/18 | 1,239,000 | Replace pump room pipes and valves (\$543,000); Replace primary pumps (\$360,000); replace secondary pumps (\$336,000) |
| 2018/19 | 2,600,000 | Replace methane gas piping and safety equipment (\$1,404,000); Repaint pump room (\$340,000); Fire/Electric code Safety Modifications (\$856,000) |
| 2019/20 | 177,000 | Replace three waste activated sludge pumps (\$177,000) |
| Total | \$ 2,777,000 | |

The cost and scope change come from the addition of the safety modifications in FY 2018/19. Initial design investigations have revealed that the existing equipment configurations, while in compliance with the applicable codes at the time of the original plant construction, would be required to be upgraded to meet current day codes as a result of the modifications planned for the Digester Complex. Approximately \$600,000 of the \$856,000 in increased cost is offset by savings in current year (FY 2017/18) projects.

LOCATION

WPC Facility; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------------|------------------|------------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering & Administration | 379,000 | 357,000 | 22,000 | | | |
| Construction & Equipment | 2,398,000 | 2,243,000 | 155,000 | | | |
| TOTAL | 2,777,000 | 2,600,000 | 177,000 | | | |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 2,777,000 | 2,600,000 | 177,000 | | | |
| TOTAL | 2,777,000 | 2,600,000 | 177,000 | | | |

PROGRAM - ACTIVITY:

Utilities - WPC Plant

DEPARTMENT:

Water and Pollution Control

ACCOUNT NO.

520-3450-489

COGENERATION SYSTEM MAINTENANCE

PROJECT STATUS: Scope Change Cost Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The WPC Facility uses anaerobic digestion as a core treatment process for wastewater solids. The digestion process stabilizes waste, reduces the volume of solids, and provides a measure of pathogen destruction. The process also generates methane “bio-gas” as a by-product. This gas is captured and used as a fuel source for on-site electrical generation. The facility has three gas-fired engines capable of operating on either the bio-gas or natural gas. Each engine drives a dedicated electric generator. A heat recovery system on the engines uses the waste heat to warm the digesters.

COMMENTS

The work plan incorporates the conclusions from the October 17, 2017 workshop with City Council. FY 2018/19 now includes the addition of a new dual fuel boiler that will operate alongside the existing cogeneration engines, as well as replacement of the controls and switchgear. The work planned for FY 2022/23 assumes that the level of gas production achieved continues to justify the ongoing use of the cogeneration system, and includes the replacement of Methane Generator 2 with a new engine, the addition of gas conditioning, and construction of a new high strength waste receiving station. Approximately \$790,000 of the cost of the projects shown in FY 2018/19 is offset by savings in current year (FY 2017/18) projects.

| | | |
|---------|--------------|---|
| 2018/19 | \$ 1,515,000 | Demolition of MG #1 (\$115,000), new boiler (\$453,000), controls (\$370,000), switchgear (\$577,000) |
| 2022/23 | \$ 4,590,000 | Demolition of MG #2 (\$205,000) new engine (\$1,422,000), gas conditioning (\$1,688,000), new receiving station (\$1,275,000) |

LOCATION

WPC Facility; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------------|------------------|------------------|---------|---------|---------|------------------|
| COST: | | | | | | |
| Engineering | 915,000 | 227,000 | | | | 688,000 |
| Construction | 5,190,000 | 1,288,000 | | | | 3,902,000 |
| TOTAL | 6,105,000 | 1,515,000 | | | | 4,590,000 |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 1,515,000 | 1,515,000 | | | | |
| Clean Water State Revolving Fund | 4,590,000 | | | | | 4,590,000 |
| TOTAL | 6,105,000 | 1,515,000 | | | | 4,590,000 |

PROGRAM - ACTIVITY:

Utilities - WPC Plant

DEPARTMENT:

Water and Pollution Control

ACCOUNT NO.

520-3447-489

WPC PLANT FACILITY IMPROVEMENTS

PROJECT STATUS: Cost Change

Scope Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

It is necessary to plan for the orderly repair, replacement, and upgrade of the Water Pollution Control Facility equipment in order to continue high-quality treatment and comply with environmental regulations. This project involves annual equipment repairs, maintenance, replacement, and upgrades at the plant. This facility became fully operational in November 1989. Life expectancies for plant equipment vary from five to six years to more than ten years.

COMMENTS

Replacing the drives on the screw pumps completes a multi-year rehabilitation of these unique pumps. The new grain storage bin is needed in conjunction with the acquisition of additional farm ground budgeted in the current year (FY 17/18). Replacement of the facility's Programmable Logic Controllers (PLC's) is recommended due to their age. Replacement of the Supervisory Control and Data Acquisition (SCADA) servers is scheduled for every five years. The cost and scope change is a result of planned FY 2022/23 projects now showing in the five-year CIP.

The schedule for these improvements is as follows.

| | | |
|---------|-------------------|--|
| 2018/19 | \$ 200,000 | Screw Pump Drives (\$200,000) |
| 2019/20 | 45,000 | Grain Storage Bin (\$45,000) |
| 2022/23 | 695,000 | Replace PLC's (\$635,000) & SCADA Servers (\$60,000) |
| Total | <u>\$ 940,000</u> | |

LOCATION

WPC Plant; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | | | | | | |
| Construction & Equipment | 940,000 | 200,000 | 45,000 | | | 695,000 |
| TOTAL | 940,000 | 200,000 | 45,000 | | | 695,000 |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 940,000 | 200,000 | 45,000 | | | 695,000 |
| TOTAL | 940,000 | 200,000 | 45,000 | | | 695,000 |

PROGRAM - ACTIVITY:

Utilities - WPC Plant

DEPARTMENT:

Water and Pollution Control

ACCOUNT NO.

520-3415-489

WPC CLARIFIER MAINTENANCE

PROJECT STATUS: Cost Change

Scope Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project includes major structural and mechanical maintenance activities for the eight clarifiers at the WPC facility.

COMMENTS

The clarifier drives and mechanisms were inspected in 2012. No significant structural concerns were identified with the metal mechanisms. A schedule for replacement of the drives and repairs to failing coatings was developed at that time. The final year of a multi-year rehabilitation of the clarifiers concludes in FY 2018/19 with the replacement of the (4) primary clarifier drives (\$510,000).

A new project has been added in FY 2018/19 to install sunlight covers over the launders of the final clarifiers (\$195,000). The treated water leaving the clarifiers is so clear that algae grow on the launders. These long, stringy algae will break off and get caught on the ultraviolet bulbs of the disinfection system, hindering the effectiveness of the system. The algae can also cause the facility to violate its permit limit for suspended solids. Placing sunlight covers over the launders should help cut down on this problem.

LOCATION

WPC Facility; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Replace Primary Clarifier Drives | 510,000 | 510,000 | | | | |
| Install Launder Covers | 195,000 | 195,000 | | | | |
| TOTAL | 705,000 | 705,000 | | | | |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 705,000 | 705,000 | | | | |
| TOTAL | 705,000 | 705,000 | | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|-----------------------------|--------------------|
| Utilities - WPC Plant | Water and Pollution Control | 520-3429-489 |

STRUCTURAL REHABILITATION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

In order to preserve the significant investment in infrastructure at the Water Pollution Control Facility, periodic structural rehabilitation of buildings and structures is necessary. Because of the value and significance of the structures identified in this project, it is essential that rehabilitation be made prior to a structural failure.

COMMENTS

A comprehensive evaluation of the structural condition of the buildings and structures was performed in 2012. Based on that assessment, the facility is generally in good condition; however, the facility is now 28 years old and is showing signs of age-related deterioration. As a part of the condition assessment, a schedule for structural rehabilitation was developed. The drivers for the schedule are the estimated remaining useful life in each structure and coordination with future improvements to the facility.

It should be noted that structural repairs to the trickling filters are not included in this budget, in anticipation of their removal as a part of the Nutrient Reduction Modifications project. If that project does not proceed as envisioned, additional funds will be needed to repair and stabilize those structures.

| | | |
|---------|--------------|---|
| 2018/19 | \$ 1,113,000 | Repairs to the Administration Building entrance slab (\$184,000); repairs to joints in precast wall panels (all structures except trickling filters) (\$450,000); stair support and sidewalk at SW clarifier stair (\$18,000); repair drainage and moisture issues around multiple structures (\$461,000) |
| 2020/21 | \$ 1,317,000 | Repairs to the precast and concrete masonry at the Raw Water Pump Station Building (\$1,317,000) |

LOCATION

WPC Facility; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------|--------------|------------------|------------------|------------------|---------|---------|
| COST: | | | | | | |
| Engineering | 316,500 | 119,000 | | 197,500 | | |
| Construction | 2,113,500 | 994,000 | | 1,119,500 | | |
| | TOTAL | 2,430,000 | 1,113,000 | 1,317,000 | | |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 2,430,000 | 1,113,000 | | 1,317,000 | | |
| | TOTAL | 2,430,000 | 1,113,000 | 1,317,000 | | |

PROGRAM - ACTIVITY:

Utilities - WPC Plant

DEPARTMENT:

Water and Pollution Control

ACCOUNT NO.

520-3455-489

FLOW EQUALIZATION EXPANSION**PROJECT STATUS:** No ChangeCity of Ames, Iowa
Capital Improvements Plan**DESCRIPTION/JUSTIFICATION**

The Ames WPC Facility uses an advanced secondary (i.e. biological) treatment process. The biological processes are designed to operate within a range of flow rates. If the flows increase too high or too rapidly, the biomass can be washed out of the treatment basins, negatively impacting the treatment effectiveness for several days or weeks to follow. Facilities like Ames' are commonly constructed with flow equalization basins. Ames currently has an effective flow equalization storage capacity of 4.4 million gallons.

When flows coming in to the plant exceed the hydraulic capacity of the biological process, the excess flow is diverted to the equalization basins and is later brought back through the treatment process after the incoming flow rate drops below the capacity of the plant. On those rare occasions when the basins are completely filled and the influent flow rate has not yet dropped below capacity, the equalization basins begin a controlled overflow. The overflow is recombined with the treated plant effluent prior to discharge to the receiving stream. Over the facility's 28 year history, this combined flow has always met all numeric discharge limits contained in the NPDES permit.

COMMENTS

The 2012 Long-Range Facility Plan evaluated the wet-weather flow handling capability of the WPC Facility. It concluded that, in conjunction with the increased sewer rehabilitation being pursued by Public Works, a flow equalization capacity increase of six million gallons at the treatment plant would be needed to achieve the performance required by the Iowa Department of Natural Resources (IDNR). The IDNR is currently drafting a statewide Wet Weather Flow Policy to help utilities determine how much equalization capacity they should have. While this project remains in FY 2019/20 as shown last year, staff intends to not move forward until the IDNR's policy has been released and the need for additional equalization capacity is confirmed.

LOCATION

WPC Plant; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------------|------------------|----------------|------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 101,000 | | 101,000 | | | |
| Construction | 1,130,000 | | 1,130,000 | | | |
| TOTAL | 1,231,000 | | 1,231,000 | | | |
| FINANCING: | | | | | | |
| Clean Water State Revolving Fund | 1,231,000 | | 1,231,000 | | | |
| TOTAL | 1,231,000 | | 1,231,000 | | | |

PROGRAM - ACTIVITY:

Utilities - WPC Plant

DEPARTMENT:

Water and Pollution Control

ACCOUNT NO.

NUTRIENT REDUCTION MODIFICATIONS

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

In early 2013, the Iowa Department of Natural Resources (IDNR) released the Iowa Nutrient Reduction Strategy. This strategy will require the State's 102 largest municipal wastewater facilities to install "technically and economically feasible process changes for nutrient removal." This project will convert the WPC facility to a "Simultaneous Nitrification/Denitrification" treatment scheme to achieve the new numeric nutrient limits.

COMMENTS

The Iowa Nutrient Reduction Strategy lays out a schedule for point source discharges based on the National Pollutant Discharge Elimination System (NPDES) permit renewal cycle for each facility. The current NPDES permit for Ames has expired, but remains in effect until a new permit is issued. According to the draft permit, Ames must submit to IDNR a preliminary engineering report that evaluates the cost and feasibility of installing nutrient reduction at the facility. The facility will then receive a compliance schedule requiring the construction of nutrient reduction facilities during the term of the following NPDES permit.

| | | |
|-------------------|-------------------|--------------------------------|
| 2017/18 | \$ 285,000 | Preliminary Engineering Report |
| 2021/22 – 2024/25 | 4,600,000 | Engineering Services |
| 2022/23 – 2024/25 | <u>31,220,000</u> | Construction |
| Total | \$ 36,105,000 | |

There are major capital needs at the facility (such as an Integrated Fixed-film Activated Sludge modification to the solids contact units to achieve lower ammonia limits - \$3.16 million and a trickling filter media replacement - \$8.13 million) that can potentially be avoided by the nutrient modification project. The IDNR has temporarily placed the renewal of the Ames NPDES permit on hold; meaning the mandatory obligation to start the feasibility study has not yet been imposed. Staff is concerned, however, that if the nutrient modifications are delayed for too long, these other expensive projects will need to proceed in the interim. Funds are authorized in the current year (FY 2017/18) to initiate the feasibility study so that the long-term direction can be determined. The engineering design work for this project is anticipated to begin in FY 2021/22, with construction occurring over the following two fiscal years. If the project is not needed due to changes in nutrient standards or other alternative watershed-based solutions, then some of the funds set aside for this project will need to be diverted to the other capital projects described above.

LOCATION

WPC Facility; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------------|-------------------|---------|---------|---------|------------------|-------------------|
| COST: | | | | | | |
| Engineering | 3,480,000 | | | | 2,950,000 | 530,000 |
| Construction | 10,050,000 | | | | | 10,050,000 |
| TOTAL | 13,530,000 | | | | 2,950,000 | 10,580,000 |
| FINANCING: | | | | | | |
| Clean Water State Revolving Fund | 13,530,000 | | | | 2,950,000 | 10,580,000 |
| TOTAL | 13,530,000 | | | | 2,950,000 | 10,580,000 |

PROGRAM - ACTIVITY:

Utilities - WPC Plant

DEPARTMENT:

Water and Pollution Control

ACCOUNT NO.

WPC ELECTRICAL SYSTEM MAINTENANCE

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project covers the periodic maintenance of the overall electrical system for the facility. It includes routine preventative maintenance projects intended to sustain the safety and functionality of the electrical components at a high level. It also may include periodic major repair or replacement projects not directly associated with other CIP projects.

COMMENTS

A main component of the facility’s electrical system is the switchgear, which is a series of electrical cabinets that contain the disconnect switches and circuit breakers used to protect and isolate electrical equipment. Over time, the equipment can build up dust, insects, and other debris. The connections can become loose over time, and the insulation can degrade. These issues can create a reliability problem, and can also pose a serious fire hazard. To help ensure that the equipment performs as needed, a routine schedule of preventative maintenance has been used, with the main switchgear and the Total Energy Building switchgear being cleaned every five years. The main switchgear was last cleaned in early 2017. The Total Energy switchgear is proposed to be replaced as a part of the Cogeneration System CIP project in 2018. Both sets of switchgear are planned for routine maintenance in FY 2022/23.

LOCATION

WPC Plant; four miles south of Highway 30, east of I-35

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | | | | | | |
| Construction | 97,000 | | | | | 97,000 |
| TOTAL | 97,000 | | | | | 97,000 |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 97,000 | | | | | 97,000 |
| TOTAL | 97,000 | | | | | 97,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|-----------------------------|--------------------|
| Utilities - WPC Plant | Water and Pollution Control | |

UTILITIES - WATER DISTRIBUTION

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------|
| PROJECT: | | | | | | | |
| Water System Improvements | 7,550,000 | 1,300,000 | 1,400,000 | 1,500,000 | 1,600,000 | 1,750,000 | 71 |
| Campustown Public Improvements | 1,700,000 | 100,000 | 1,600,000 | - | - | - | 72 |
| TOTAL PROJECT EXPENDITURES | 9,250,000 | 1,400,000 | 3,000,000 | 1,500,000 | 1,600,000 | 1,750,000 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 1,000,000 | - | 1,000,000 | - | - | - | |
| City: | | | | | | | |
| Road Use Tax | 100,000 | 100,000 | - | - | - | - | |
| Water Utility Fund | 7,975,000 | 1,300,000 | 1,825,000 | 1,500,000 | 1,600,000 | 1,750,000 | |
| Sewer Utility Fund | 125,000 | - | 125,000 | - | - | - | |
| Electric Utility Fund | 50,000 | - | 50,000 | - | - | - | |
| Total City Funding | 8,250,000 | 1,400,000 | 2,000,000 | 1,500,000 | 1,600,000 | 1,750,000 | |
| TOTAL FUNDING SOURCES | 9,250,000 | 1,400,000 | 3,000,000 | 1,500,000 | 1,600,000 | 1,750,000 | |

WATER SYSTEM IMPROVEMENTS

PROJECT STATUS: Cost Increase

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This program provides for replacing water mains in areas that experience rusty water problems. It also provides for installing larger distribution mains in areas that have 4" supply lines, transferring water services from 4" water mains in streets where larger water mains exist, and abandoning 4" water mains. Eliminating duplicate water mains, where possible, improves water flow and helps reduce rusty water. Installing larger distribution lines in areas that have a high concentration of 4" supply lines and less than desirable fire-fighting capacity (predominantly in the older areas of the community) provides larger supply quantities in relation to the current and proposed land uses, in accordance with the Land Use Policy Plan. This program may also include the replacement of leaking valves on larger water mains along major roadways where the complexity of the project encourages replacement by a contractor.

COMMENTS

Water system improvements and water service transfers will be completed at various locations in the community. Project locations will be coordinated with upcoming roadway improvement projects to minimize construction impacts to neighborhoods.

Rusty water complaints highlight the continuing need to replace the 4" water mains in order to provide fire-fighting capacity and improved water quality in the system. The system currently has 10.4 miles of active 4" water main (estimated \$15 million to install a new main and transfer existing services to the new main). Improvements to these water mains will result in reduced maintenance costs. Replacing these mains will also result in improved fire safety and water quality. Annual funding has been increased in this program to accelerate replacement of utilities.

LOCATION

2018/19 Water Main Replacement:

Hickory Drive, Burnett (13th Street to 16th Street) and various other locations to be determined

2018/19 Water Service Transfer:

Woodland Street (Hickory Drive to 300 feet east) and various other locations to be determined

The Cost and Revenue changes are due to increasing cost of public infrastructure projects and the high priority need to continue to improvement the public water system to provide water quality and fire-fighting capacity to the community.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| COST: | | | | | | |
| Engineering | 1,110,000 | 185,000 | 210,000 | 225,000 | 240,000 | 250,000 |
| Construction | 6,440,000 | 1,115,000 | 1,190,000 | 1,275,000 | 1,360,000 | 1,500,000 |
| TOTAL | 7,550,000 | 1,300,000 | 1,400,000 | 1,500,000 | 1,600,000 | 1,750,000 |
| FINANCING: | | | | | | |
| Water Utility Fund | 7,550,000 | 1,300,000 | 1,400,000 | 1,500,000 | 1,600,000 | 1,750,000 |
| TOTAL | 7,550,000 | 1,300,000 | 1,400,000 | 1,500,000 | 1,600,000 | 1,750,000 |

PROGRAM - ACTIVITY:

Utilities - Water Distribution

DEPARTMENT:

Public Works

ACCOUNT NO.

510-8461-489

CAMPUSTOWN PUBLIC IMPROVEMENTS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project identifies public improvements that will complement the current revitalization projects in Campustown.

COMMENTS

The water mains, storm sewers, and sanitary sewers along a portion of Welch Avenue (Lincoln Way to Hunt Street) date back to the early 1900s. Water mains along Lincoln Way (Hayward Avenue to Welch Avenue) also date back to the early 1900s, so this program also includes improvements at this location. Considering the age of the infrastructure as well as the increased demand from redevelopment, updated water, storm, and sanitary mains will be constructed. These improvements will be coupled with new pavement improvements on Welch Avenue.

LOCATION

Welch Avenue (Lincoln Way to Knapp Street) and Lincoln Way (Hayward Avenue to Welch Avenue)

Planning funds were included in this project in 2017/18 to coordinate outreach/stakeholder input for the City's project. Design will commence in 2018/19 with the City's construction following in 2019/20.

Bicycle facilities as part of this project (ON 16 Welch Ave. on-street treatment from Mortensen Road to Union Drive) are estimated to cost \$120,000.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|------------------|----------------|------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 260,000 | 100,000 | 160,000 | | | |
| Construction | 1,390,000 | | 1,390,000 | | | |
| Electric | 50,000 | | 50,000 | | | |
| TOTAL | 1,700,000 | 100,000 | 1,600,000 | | | |
| FINANCING: | | | | | | |
| Road Use Tax | 100,000 | 100,000 | | | | |
| G.O. Bonds | 1,000,000 | | 1,000,000 | | | |
| Water Utility Fund | 425,000 | | 425,000 | | | |
| Sewer Utility Fund | 125,000 | | 125,000 | | | |
| Electric Utility Fund | 50,000 | | 50,000 | | | |
| TOTAL | 1,700,000 | 100,000 | 1,600,000 | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|---|--------------------|--------------------|
| Utilities - Water Distribution, Storm Sewer, & Sanitary Sewer | Public Works | 060-8401-489 |

UTILITIES - SANITARY SEWER SYSTEM

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|------------------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------|
| PROJECT: | | | | | | | |
| Sanitary Sewer System Improvements | 20,478,000 | 3,820,000 | 3,934,000 | 4,052,000 | 4,272,000 | 4,400,000 | 74 |
| Clear Water Diversion | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 | 75 |
| TOTAL PROJECT EXPENDITURES | 20,603,000 | 3,845,000 | 3,959,000 | 4,077,000 | 4,297,000 | 4,425,000 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| State Revolving Fund Loans | 19,028,000 | 3,570,000 | 3,684,000 | 3,802,000 | 3,922,000 | 4,050,000 | |
| City: | | | | | | | |
| Sewer Utility Fund | 1,575,000 | 275,000 | 275,000 | 275,000 | 375,000 | 375,000 | |
| TOTAL FUNDING SOURCES | 20,603,000 | 3,845,000 | 3,959,000 | 4,077,000 | 4,297,000 | 4,425,000 | |

SANITARY SEWER SYSTEM IMPROVEMENTS**PROJECT STATUS:** No ChangeCity of Ames, Iowa
Capital Improvements Plan**DESCRIPTION/JUSTIFICATION**

This is the annual program for rehabilitation/reconstruction of deficient sanitary sewers and deteriorated manholes at various locations throughout the city. Most of the problem areas are in sewers that can be bundled into a construction package for cost efficiency, or in problem areas deeper than City crews are equipped to handle. This program, therefore, provides for those repairs by outside firms. The goal of this program is to identify and remove major sources of inflow/infiltration as a means of lowering the peak wet weather flow at the treatment plant.

COMMENTS

System improvement locations have been identified through the Sanitary Sewer System Evaluation field investigation completed over the last several years. Through manhole inspections, smoke testing, and televising, severe structural defects (ratings of 4 or 5) have been identified as priorities within this program. It is highly recommended by national standards to fix structural defects with ratings of "5" within 12 months. According to national standards, structural defects with ratings of "4" are necessary to be fixed within five years. It is estimated that there are \$25.7 million in improvements to be made in the system. It is estimated that improvements may take 10 years to complete, which commenced in FY 2015/16. This program does not reflect any capacity issues that may be identified. Suggested work activities include rehabilitating or replacing manholes, repairing or lining pipe, and similar work. City maintenance crews are continuing to also complete projects identified by the SSSE, as equipment and staffing allows.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|-------------------|--------------------|------------------------------|------------------|------------------|------------------|
| COST: | | | | | | |
| Engineering | 3,420,000 | 684,000 | 684,000 | 684,000 | 684,000 | 684,000 |
| Construction | 17,058,000 | 3,136,000 | 3,250,000 | 3,368,000 | 3,588,000 | 3,716,000 |
| TOTAL | 20,478,000 | 3,820,000 | 3,934,000 | 4,052,000 | 4,272,000 | 4,400,000 |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 1,450,000 | 250,000 | 250,000 | 250,000 | 350,000 | 350,000 |
| State Revolving Fund (SRF) | 19,028,000 | 3,570,000 | 3,684,000 | 3,802,000 | 3,922,000 | 4,050,000 |
| TOTAL | 20,478,000 | 3,820,000 | 3,934,000 | 4,052,000 | 4,272,000 | 4,400,000 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Utilities - Sanitary Sewer | | Public Works | 520-8542-489 522-8542-489 | | | |

CLEAR WATER DIVERSION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This is the annual program providing for diversion of footing drain discharge from sanitary sewers to storm sewers.

Clear water from footing drains causes overloading and backups in the sanitary sewer as well as increases in the volume of clean water that is treated at the sewage treatment facility. The Clear Water Diversion program historically involved diverting footing drain discharge from sanitary sewers to storm sewers. This diversion results in lower volumes of clean water needing treatment at the sewage treatment facility, thereby decreasing operating and maintenance costs of that facility. In addition, customers should experience fewer, less severe sewer backups.

COMMENTS

The Inflow and Infiltration Study, undertaken in 1995, showed that in order for clear water diversion to be cost effective, an individual sump pump must discharge in excess of 1,000 gallons per day. To encourage participation in the footing drain grant program, City Council authorized grants to participating property owners. In all, 2,334 footing drain grants were paid to property owners under this program through July 1, 2011, when the grant program was suspended.

After 2010/11, **the footing drain grant portion of this program was suspended and construction of collector lines to eliminate icing on streets has been reduced.** Through completion of the Sanitary Sewer System Evaluation, the future need of the footing drain grant program will be analyzed.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|--------------------|----------------|--------------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| TOTAL | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| FINANCING: | | | | | | |
| Sewer Utility Fund | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| TOTAL | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| PROGRAM - ACTIVITY: | | | | | | |
| Utilities - Sanitary Sewer | | | | | | |
| | | DEPARTMENT: | | ACCOUNT NO. | | |
| | | Public Works | | 520-8585-489 | | |

UTILITIES - STORM WATER

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------|
| PROJECT: | | | | | | | |
| Storm Water Erosion Control Program | 3,822,000 | 1,000,000 | 800,000 | 630,000 | 642,000 | 750,000 | 77 |
| Low Point Drainage Improvements | 1,000,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 78 |
| Storm Water Improvement Program | 1,650,000 | 250,000 | 250,000 | 250,000 | 400,000 | 500,000 | 79 |
| Storm Water System Analysis | 540,000 | 180,000 | 180,000 | 180,000 | - | - | 80 |
| Storm Water Facility Rehabilitation | 450,000 | 150,000 | 150,000 | 150,000 | - | - | 81 |
| Storm Water Quality Improvements | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 82 |
| TOTAL PROJECT EXPENDITURES | 7,962,000 | 1,880,000 | 1,680,000 | 1,510,000 | 1,342,000 | 1,550,000 | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Storm Water Utility Fund | 6,076,000 | 1,534,000 | 1,312,000 | 1,130,000 | 950,000 | 1,150,000 | |
| Other: | | | | | | | |
| Grant Funds | 1,886,000 | 346,000 | 368,000 | 380,000 | 392,000 | 400,000 | |
| TOTAL FUNDING SOURCES | 7,962,000 | 1,880,000 | 1,680,000 | 1,510,000 | 1,342,000 | 1,550,000 | |

STORM WATER EROSION CONTROL PROGRAM**PROJECT STATUS:** No ChangeCity of Ames, Iowa
Capital Improvements Plan**DESCRIPTION/JUSTIFICATION**

This annual program provides for stabilization of areas that have become eroded in streams, channels, swales, gullies, or drainage ways that are part of the storm water system. This program provides a more permanent control of the erosion and will reduce recurring maintenance costs in these areas.

COMMENTS

An inventory of drainage ways within the city has been established based on National Pollution Discharge Elimination System (NPDES) Phase II requirements. Following the floods of 2010, an Urban Stream Assessment was updated, which rated the stream banks of each tributary of Ada Hayden, College Creek, Clear Creek, Onion Creek, Worle Creek, Squaw Creek, and the South Skunk River. This assessment identified areas where stabilization is a priority. As monitoring activities associated with the NPDES permit requirements continue, further locations for future improvements will be identified.

LOCATION

- 2018/19: South Skunk River bank stabilization (Southeast 16th Street to East Lincoln Way)
- 2019/20: Squaw Creek (various locations from 6th Street to 13th Street) (coordinated with Parks & Recreation)
- 2020/21: Clear Creek bank stabilization (north of Oakland Street) (coordinated with Parks & Recreation)
- 2021/22: Waterway north of Bloomington Townhomes (Eisenhower Lane)
- 2022/23: Clear Creek bank stabilization (at Utah Drive area) and Inis Grove Park outlet (near north Duff Avenue restroom facilities)

The 2018/19 South Skunk River bank stabilization project will be coordinated with construction of a segment of the Skunk River Trail (Shared Use Path System Expansion). The South Skunk River continues to erode toward the existing raw well line on the east side of the river. The new trail is being planned on the west side of the river which is also continuing to meander/erode rapidly during high flow events.

The State Revolving Fund (SRF) Sponsored Project funding for this program is a grant connected with SRF funding for the Sanitary Sewer Rehabilitation Program.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|------------------|------------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 750,000 | 200,000 | 160,000 | 120,000 | 120,000 | 150,000 |
| Construction | 3,072,000 | 800,000 | 640,000 | 510,000 | 522,000 | 600,000 |
| TOTAL | 3,822,000 | 1,000,000 | 800,000 | 630,000 | 642,000 | 750,000 |
| FINANCING: | | | | | | |
| Storm Sewer Utility Fund | 1,936,000 | 654,000 | 432,000 | 250,000 | 250,000 | 350,000 |
| State Revolving Fund (SRF) | 1,886,000 | 346,000 | 368,000 | 380,000 | 392,000 | 400,000 |
| TOTAL | 3,822,000 | 1,000,000 | 800,000 | 630,000 | 642,000 | 750,000 |

PROGRAM - ACTIVITY:

Utilities - Storm Water

DEPARTMENT:

Public Works

ACCOUNT NO.

560-8635-489

LOW POINT DRAINAGE IMPROVEMENTS**PROJECT STATUS:** No Change**DESCRIPTION/JUSTIFICATION**

This is the annual program for drainage improvements to decrease flooding at low points. Low point drainage improvements are not only focused on residential street locations, but specifically on those locations most in need of the improvements as affected by standing water, flooding, and insufficient pipe capacity. The program identifies core locations for improvements each year. In addition, improvements are made at miscellaneous locations identified throughout the year. During heavy rain, some areas become flooded, and damage to private property occasionally occurs. This program provides for installation of drainage improvements to decrease this flooding at low points. In 1994, the following criteria were established for evaluating and prioritizing drainage situations: 1) Potential damage from storm runoff; 2) Emergency vehicle access limitations created by runoff; 3) Number of people affected; 4) Number of structures affected; 5) Street classification; 6) Land use; and 7) Benefits of a project to adjacent areas. Based on these criteria, target areas for improvements are established. These improvements may include construction of detention areas, new pipe systems, and replacement systems to increase the ability to control the runoff so it can be carried by downstream systems.

COMMENTS

Addressing these drainage issues will reduce flooding problems on both public and private property. The amount of time spent setting out barricades in areas that flood during heavy rains will also be reduced. The other locations already identified for improvements as part of this program, in addition to new complaints received over the past year, have been prioritized as shown below.

LOCATION

| | |
|---------|--|
| 2018/19 | Airport Road and South Riverside Drive area |
| 2019/20 | Top O Hollow Road (1100 block), 28 th Street (1100 block), and Kennedy Street (1100 block) |
| 2020/21 | McKinley Dr (1400/1500 block), Barr Dr, Jensen Ave (2100/2200 block), Stonebrook Rd/Harrison Rd area, and Fletcher Blvd (3700 block) |
| 2021/22 | Ferndale Avenue/Hunziker Drive area and Northridge Lane |
| 2022/23 | Garnet Drive/Meadow Place and Christofferson Park |

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 200,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Construction | 800,000 | 160,000 | 160,000 | 160,000 | 160,000 | 160,000 |
| TOTAL | 1,000,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| FINANCING: | | | | | | |
| Storm Sewer Utility Fund | 1,000,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| TOTAL | 1,000,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |

PROGRAM - ACTIVITY:

Utilities - Storm Water

DEPARTMENT:

Public Works

ACCOUNT NO.

560-8657-489

STORM WATER IMPROVEMENT PROGRAM

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This annual program is to repair or replace deteriorated storm sewer pipes and intakes. Areas of concentration for storm sewer repairs will be those locations programmed for street improvements and those areas where structural deficiencies are identified.

Many intakes are brick or concrete and have experienced repeated “freeze/thaw” conditions during winters and springs. This repeated freeze/thaw action causes bricks and mortar to deteriorate, resulting in collapsed intakes. This program provides for a proactive response by contractually repairing/replacing intakes on a scheduled basis. In addition to the contractual work provided in this program, City crews provide immediate repair of those intakes that pose an immediate concern for life, health, or safety.

COMMENTS

Maintenance crews, through citizen inquiries and/or storm sewer inspections, have identified storm sewer structural deficiencies within the system. These include areas where the pipe has cracked or is missing sections or pieces of pipe. This program will provide funding to correct these deficiencies.

Completion of the Storm Water System Analysis may identify the need for additional improvements as part of the program.

LOCATIONS

2018/19: Various locations as determined

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 230,000 | 35,000 | 35,000 | 35,000 | 50,000 | 75,000 |
| Construction | 1,420,000 | 215,000 | 215,000 | 215,000 | 350,000 | 425,000 |
| TOTAL | 1,650,000 | 250,000 | 250,000 | 250,000 | 400,000 | 500,000 |
| FINANCING: | | | | | | |
| Storm Sewer Utility Fund | 1,650,000 | 250,000 | 250,000 | 250,000 | 400,000 | 500,000 |
| TOTAL | 1,650,000 | 250,000 | 250,000 | 250,000 | 400,000 | 500,000 |

PROGRAM - ACTIVITY:

Utilities - Storm Water

DEPARTMENT:

Public Works

ACCOUNT NO.

560-8642-489

STORM WATER SYSTEM ANALYSIS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

In recent years, localized flash flooding has occurred at various locations around the city of Ames during high rainfall events. The City does not currently have an accurate mapping of the storm sewer system within the Geographic Information System (GIS) as it does with other utility systems. As the Sanitary Sewer System Evaluation highlighted, removing clean water from the sanitary sewer system can cause additional pressure to the storm sewer system. Localized flooding could potentially increase. Therefore, this project includes establishment of an accurate GIS storm sewer system and hydraulic modeling of the network.

COMMENTS

This analysis will aid in identifying deficient storm water capacity and future improvements. The length of this program will be updated based on progress being made for the whole system being analyzed.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 540,000 | 180,000 | 180,000 | 180,000 | | |
| TOTAL | 540,000 | 180,000 | 180,000 | 180,000 | | |
| FINANCING: | | | | | | |
| Storm Sewer Utility Fund | 540,000 | 180,000 | 180,000 | 180,000 | | |
| TOTAL | 540,000 | 180,000 | 180,000 | 180,000 | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Utilities - Storm Water | | Public Works | 560-8605-489 | | | |

STORM WATER FACILITY REHABILITATION PROGRAM

PROJECT STATUS: Cost Decrease

DESCRIPTION/JUSTIFICATION

In accordance with the *Municipal Code*, new developments within the community are required to provide storm water management quantity control. This means maintaining storm water runoff discharge at pre-developed conditions through use of extended detention and/or retention. Through establishment of developers' agreements, the City of Ames has accepted responsibility for the long-term maintenance of many of these facilities in residential areas. As these facilities age, sediment accumulates, volunteer vegetation becomes more prevalent, erosion occurs, and structures need to be improved. This annual program addresses those concerns.

COMMENTS

As part of the new post-construction storm water management ordinance adopted in April 2014, commercial and industrial land owners are responsible to maintain their own storm water facilities. This ordinance also outlines that the homeowner's association/owner for residential development will maintain all water quality features. However, the City is responsible for long-term maintenance of the regional detention facilities providing water quantity control.

LOCATION

| | |
|---------|--|
| 2018/19 | Little Bluestem Court (Gateway Hills Lots W, X, Y, and Z as owned by the City of Ames) |
| 2019/20 | Bloomington Heights West Subdivision (west of Hyde Avenue) |
| 2020/21 | Northridge Heights Subdivision (near GW Carver) |
| 2021/22 | No project |
| 2022/23 | No project |

The cost change is due to funding being included in this program for year 2021/22 in the previous CIP, however no project was identified.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 90,000 | 30,000 | 30,000 | 30,000 | | |
| Construction | 360,000 | 120,000 | 120,000 | 120,000 | | |
| TOTAL | 450,000 | 150,000 | 150,000 | 150,000 | | |
| FINANCING: | | | | | | |
| Storm Sewer Utility Fund | 450,000 | 150,000 | 150,000 | 150,000 | | |
| TOTAL | 450,000 | 150,000 | 150,000 | 150,000 | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|--------------------|
| Utilities - Storm Water | Public Works | 560-8624-489 |

STORM WATER QUALITY IMPROVEMENTS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Improvement/treatment of water quality for new development and re-development in the Ames community has been incorporated into the newly adopted Post Construction Stormwater Management Ordinance. This addresses removal of sediment and nutrients before they enter waterways such as Squaw Creek and South Skunk River. This program includes treatment of the water quality volume from public impervious areas (e.g. streets and parking lots).

COMMENTS

This program includes installation of bioretention cells, vegetated swales, native landscape, and rain gardens, soil quality restoration, and other approved best management practices at various locations in the community. These best management practices may be combined with a street improvement project, where the neighborhood/adjacent land owners agree to help with day-to-day maintenance.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 75,000 | 15,000 | 15,000 | 15,000 | 15,000 | 15,000 |
| Construction | 425,000 | 85,000 | 85,000 | 85,000 | 85,000 | 85,000 |
| TOTAL | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| FINANCING: | | | | | | |
| Storm Sewer Utility Fund | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| TOTAL | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |

PROGRAM - ACTIVITY:

Utilities - Storm Water

DEPARTMENT:

Public Works

ACCOUNT NO.

560-8601-489

UTILITIES - RESOURCE RECOVERY

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|---------------------------------------|------------------|----------------|----------------|----------------|----------------|----------------|------|
| PROJECT: | | | | | | | |
| Resource Recovery System Improvements | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 | 84 |
| TOTAL PROJECT EXPENDITURES | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Resource Recovery Fund | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 | |
| TOTAL FUNDING SOURCES | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 | |

RESOURCE RECOVERY SYSTEM IMPROVEMENTS

PROJECT STATUS: Scope Change

Cost Increase

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This program is to purchase new and replacement components and equipment at the Resource Recovery Plant. Also included is funding for materials for two annual preventive maintenance projects (replacement of the rotary disc screen rollers (RDS) and chains, and rebuilding C-1 conveyor). Resource Recovery personnel perform the work to complete the preventive maintenance projects.

COMMENTS

Proposed projects:

- 2018/19 Preventive Maintenance materials for the replacement of the RDS rollers and chains (\$46,250); conveyor upgrades (\$19,550); #1 mill armored teeth and combs (\$39,300); #1 mill planetary motor/drum motor (\$25,000); locker room remodel (\$20,000); replace spark detection system/fire suppression system (\$20,000); process area roof replacement (\$185,000); metal heat treating kiln (\$15,000); electrical breaker upgrades (\$20,000)
- 2019/20 Preventive Maintenance materials for the replacement of the RDS rollers and chains (\$46,250); conveyor upgrades (\$19,550); #1 mill armored teeth and combs (\$39,300); #1 mill synchronous motor/engine assembly group (\$30,000); replace in-plant air knives (\$8,000), replacement conveyor belts (\$7,000); replace east alley concrete (\$40,000); DPH Circuit Breaker to Starter Conversion (\$78,000); maintenance/inventory control software (\$18,000)
- 2020/21 Preventive Maintenance materials for the replacement of the RDS rollers and chains (\$46,250); conveyor upgrades (\$19,550); #1 mill armored teeth and combs (\$39,300); dust pipe replacement (\$200,000); conveyor chutes (\$20,000); replace C-7 belt (\$32,000)
- 2021/22 Preventive Maintenance materials for the replacement of the RDS rollers and chains (\$75,000); conveyor upgrades (\$19,550); #1 mill armored teeth and combs (\$39,300); DPH Circuit Breaker to Starter Conversion (\$78,000)
- 2022/23 Preventive maintenance materials for the replacement of the RDS rollers and chains (\$46,250); conveyor upgrades (\$19,550); #1 mill armored teeth and combs (\$39,300)

LOCATION

Arnold O. Chantland Resource Recovery Plant, 110 Center Avenue

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| System Improvements | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 |
| TOTAL | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 |
| FINANCING: | | | | | | |
| Resource Recovery Fund | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 |
| TOTAL | 1,350,250 | 390,100 | 286,100 | 357,100 | 211,850 | 105,100 |

PROGRAM - ACTIVITY:

Utilities - Resource Recovery

DEPARTMENT:

Public Works

ACCOUNT NO.

590-9003-489

HIGH SERVICE PUMP STATION



TRANSPORTATION

TRANSPORTATION

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|---------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|------|
| EXPENDITURES: | | | | | | | |
| Streets Engineering | 57,960,000 | 11,700,000 | 8,370,000 | 13,625,000 | 13,865,000 | 10,400,000 | 87 |
| Shared Use Path System | 5,004,800 | 735,000 | 1,266,000 | 943,000 | 935,800 | 1,125,000 | 99 |
| Traffic Engineering | 6,469,250 | 1,373,000 | 1,303,750 | 1,921,500 | 781,000 | 1,090,000 | 104 |
| Street Maintenance | 3,484,000 | 601,000 | 810,000 | 618,000 | 1,175,000 | 280,000 | 113 |
| Transit | 12,082,289 | 2,405,400 | 2,500,400 | 2,560,400 | 2,440,763 | 2,175,326 | 119 |
| Airport | 858,000 | - | 180,000 | 396,000 | 180,000 | 102,000 | 125 |
| TOTAL EXPENDITURES | 85,858,339 | 16,814,400 | 14,430,150 | 20,063,900 | 19,377,563 | 15,172,326 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 46,480,000 | 6,850,000 | 7,265,000 | 9,940,000 | 12,350,000 | 10,075,000 | |
| City: | | | | | | | |
| Road Use Tax | 8,769,650 | 2,309,000 | 1,486,950 | 1,990,900 | 1,569,000 | 1,413,800 | |
| Local Option Sales Tax | 3,821,800 | 466,000 | 1,207,000 | 686,000 | 746,800 | 716,000 | |
| Water Utility Fund | 375,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | |
| Sewer Utility Fund | 375,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | |
| Storm Water Utility Fund | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | |
| Transit Fund | 4,487,258 | 1,117,400 | 875,400 | 895,400 | 860,473 | 738,585 | |
| Airport Construction Fund | 109,800 | - | 30,000 | 39,600 | 30,000 | 10,200 | |
| Total City Funding | 18,188,508 | 4,092,400 | 3,799,350 | 3,811,900 | 3,406,273 | 3,078,585 | |

TRANSPORTATION, continued

| | TOTAL | 2016/17 | 2017/18 | 2018/19 | 2019/20 | 2020/21 |
|-----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| FUNDING SOURCES, continued | | | | | | |
| Other: | | | | | | |
| MPO/STP Funds | 4,175,000 | 2,859,000 | 839,000 | 159,000 | 159,000 | 159,000 |
| Federal/State Grants | 16,531,631 | 3,013,000 | 2,491,800 | 5,796,600 | 3,462,290 | 1,767,941 |
| Private Funds | 35,000 | - | 35,000 | - | - | - |
| Federal Aviation Administration | 448,200 | - | - | 356,400 | - | 91,800 |
| Total Other Funding | 21,189,831 | 5,872,000 | 3,365,800 | 6,312,000 | 3,621,290 | 2,018,741 |
| TOTAL FUNDING SOURCES | 85,858,339 | 16,814,400 | 14,430,150 | 20,063,900 | 19,377,563 | 15,172,326 |

TRANSPORTATION - STREET ENGINEERING

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|------|
| PROJECT: | | | | | | | |
| Grand Avenue Extension | 7,725,000 | 7,725,000 | - | - | - | - | 89 |
| Collector Street Pavement Improvements | 8,310,000 | 1,750,000 | 1,200,000 | 2,500,000 | 1,660,000 | 1,200,000 | 90 |
| Asphalt Street Pavement Improvements | 10,700,000 | 1,400,000 | 1,000,000 | 1,400,000 | 3,200,000 | 3,700,000 | 91 |
| Seal Coat Pavement Improvements | 3,500,000 | 500,000 | 750,000 | 750,000 | 750,000 | 750,000 | 92 |
| Right-of-Way Restoration | 1,625,000 | 325,000 | 325,000 | 325,000 | 325,000 | 325,000 | 93 |
| Cherry Avenue Extension | 2,700,000 | - | 300,000 | 2,400,000 | - | - | 94 |
| Arterial Street Pavement Improvements | 7,500,000 | - | 1,500,000 | 2,500,000 | 2,750,000 | 750,000 | 95 |
| Downtown Street Pavement Improvements | 495,000 | - | 245,000 | - | - | 250,000 | 96 |
| Concrete Pavement Improvements | 13,080,000 | - | 2,450,000 | 3,750,000 | 5,180,000 | 1,700,000 | 97 |
| CyRide Route Pavement Improvements | 2,325,000 | - | 600,000 | - | - | 1,725,000 | 98 |
| TOTAL PROJECT EXPENDITURES | 57,960,000 | 11,700,000 | 8,370,000 | 13,625,000 | 13,865,000 | 10,400,000 | |

TRANSPORTATION - STREET ENGINEERING, continued

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------------------|-------------------|-------------------|------------------|-------------------|-------------------|-------------------|
| FUNDING SOURCES: | | | | | | |
| Debt: | | | | | | |
| G.O. Bonds | 45,380,000 | 6,850,000 | 7,145,000 | 9,610,000 | 11,700,000 | 10,075,000 |
| City: | | | | | | |
| Road Use Tax | 1,565,000 | 625,000 | 125,000 | 325,000 | 365,000 | 125,000 |
| Water Utility Fund | 375,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 |
| Sewer Utility Fund | 375,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 |
| Storm Water Utility Fund | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Total City Funding | 2,565,000 | 825,000 | 325,000 | 525,000 | 565,000 | 325,000 |
| Other: | | | | | | |
| MPO/STP Funds | 2,980,000 | 2,300,000 | 680,000 | - | - | - |
| Federal/State Grants | 7,035,000 | 1,725,000 | 220,000 | 3,490,000 | 1,600,000 | - |
| Total Other Funding | 10,015,000 | 4,025,000 | 900,000 | 3,490,000 | 1,600,000 | - |
| TOTAL FUNDING SOURCES | 57,960,000 | 11,700,000 | 8,370,000 | 13,625,000 | 13,865,000 | 10,400,000 |

GRAND AVENUE EXTENSION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is for the extension of Grand Avenue from Lincoln Way to South 16th Street. Included is South 5th Street (Grand Avenue to South Duff Avenue) as well as improvement to the South Duff Avenue (US Highway 69)/South 16th Street intersection. Extending Grand Avenue to South 16th Street will divert traffic from the US Highway 69 corridor (Grand Avenue to Lincoln Way to South Duff Avenue) to the new extension. It will help alleviate the existing congestion and allow for easier access to businesses along US Highway 69. In addition, through traffic on the Grand Avenue extension will also encounter less traffic congestion.

COMMENTS

This roadway will include turn lanes, a bridge over Squaw Creek, a golf cart underpass at Coldwater Golf Course, and a bike path along the west side of the roadway. Street lighting has also been included in the project costs. The total cost of the project is estimated to be \$18,753,000.

LOCATION

- 2013/14 South Grand Avenue (Squaw Creek Drive to S 16th St) and S 5th St (S Grand Ave to S Duff Ave) (Planning and NEPA Phase I) (\$423,000)
- 2015/16 South Grand Avenue (Squaw Creek Drive to S 16th St) and S 5th St (S Grand Ave to S Duff Ave) (NEPA Phase II) (\$280,000)
- 2016/17 South Grand Avenue (Squaw Creek Drive to S 16th St) and S 5th St (S Grand Ave to S Duff Ave) (NEPA Phase II, planning, engineering, and land acquisition) (\$2,000,000)
- 2017/18 South Grand Avenue (Squaw Creek Drive to S 16th St) and S 5th St (S Grand Ave to S Duff Ave) (engineering, grading, bridge, and box culverts/golf cart passage) and S Duff Ave (S 16th St intersection improvements) (\$7,725,000)
- 2018/19 South Grand Avenue (Squaw Creek Drive to S 16th St) and S 5th St (S Grand Ave to S Duff Ave) (engineering and paving) (\$8,325,000)

A Transportation Funding Study in 2012/13 identified federal and state grants that may be available for funding this project. Bicycle facilities as part of this project (off-street 10-ft wide shared use path) are estimated to cost \$775,000, including related bridge infrastructure.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------|------------------|------------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 725,000 | 725,000 | | | | |
| Construction | 7,000,000 | 7,000,000 | | | | |
| TOTAL | 7,725,000 | 7,725,000 | | | | |
| FINANCING: | | | | | | |
| G.O. Bonds | 3,700,000 | 3,700,000 | | | | |
| Federal/State Grants | 1,725,000 | 1,725,000 | | | | |
| MPO/STP Funds | 2,300,000 | 2,300,000 | | | | |
| TOTAL | 7,725,000 | 7,725,000 | | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|-------------------------------------|--------------------|------------------------------|
| Transportation - Street Engineering | Public Works | 320-8181-439 379-8181-439 |

COLLECTOR STREET PAVEMENT IMPROVEMENTS

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

This is the annual program for reconstruction or rehabilitation of collector streets. Locations are chosen in accordance with the most current street condition inventory.

COMMENTS

| | |
|---------|---|
| 2018/19 | Hickory Drive (Westbrook Drive to Woodland Street) |
| 2019/20 | East 20 th Street (Duff Avenue to Meadowlane Avenue) |
| 2020/21 | Hoover Avenue (24 th Street to Top-O-Hollow Road) |
| 2021/22 | Woodland Street (Hickory Drive to Forest Glen) |
| 2022/23 | 6 th Street (Brookridge Avenue to Northwestern Avenue) |

Collector street pavement improvements should result in lower street maintenance costs.

The Hoover Avenue project in 2020/21 will include Long Range Transportation Plan projects ON 4 (on-street bike treatment with estimated cost of \$80,000) and OFF 23 (on-street bike treatment with estimated cost of \$20,000).

The Woodland Street project in 2021/22 will include the City's portion of Long Range Transportation Plan project ON 21 (on-street bike treatment with estimated cost of \$160,000)

Sixth Street project in 2022/23 will include on-street bike facilities with an estimated cost of \$75,000.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| COST: | | | | | | |
| Engineering | 1,325,000 | 250,000 | 150,000 | 425,000 | 300,000 | 200,000 |
| Construction | 6,985,000 | 1,500,000 | 1,050,000 | 2,075,000 | 1,360,000 | 1,000,000 |
| TOTAL | 8,310,000 | 1,750,000 | 1,200,000 | 2,500,000 | 1,660,000 | 1,200,000 |
| FINANCING: | | | | | | |
| G.O. Bonds | 8,050,000 | 1,750,000 | 1,200,000 | 2,400,000 | 1,500,000 | 1,200,000 |
| Road Use Tax | 260,000 | | | 100,000 | 160,000 | |
| TOTAL | 8,310,000 | 1,750,000 | 1,200,000 | 2,500,000 | 1,660,000 | 1,200,000 |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

379-8137-439

ASPHALT STREET PAVEMENT IMPROVEMENTS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This is the annual program for reconstruction and resurfacing (rehabilitation) asphalt streets, typically located within residential neighborhoods. Streets within residential subdivisions have been installed using full-depth asphalt pavement since mid-1970. Full-depth replacement of these streets has become necessary due to structural pavement failure. Rehabilitation of existing asphalt streets is possible where the base asphalt layer is solid, but the surface course has failed. This program was created in accordance with City Council’s goal of strengthening our neighborhoods.

COMMENTS

- 2018/19 Reliable Street (Florida Avenue to North Dakota Avenue); Florida Avenue (Ontario Street to Reliable Street); Delaware Avenue (Ontario Street to Reliable Street); and Hutchison Street (Georgia Avenue to Florida Avenue)
- 2019/20 14th Street (Burnett Avenue to Duff Avenue); and 15th Street (Clark Avenue to Duff Avenue)
- 2020/21 McKinley Drive (Hayes to Northwestern Avenue); Jensen Drive (24th Street to Luther Drive); and Luther Drive (Kellogg Avenue to 28th Street)
- 2021/22 Opal Drive (Jewel Drive to Crystal Street); Opal Circle; Harcourt Drive (Garnet Drive to Jewel Drive); Turquoise Circle; Oakwood Road (State Avenue to University Boulevard); and Top-O-Hollow Road (Bloomington Road to Dawes Drive)
- 2022/23 Oakwood Road (State Avenue to University Boulevard), 28th Street (Hoover Avenue to Ferndale Avenue), and Oakland Street (Franklin Avenue to Hawthorne Avenue)

Reconstructing these streets will reduce maintenance costs.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|-------------------|------------------|------------------|------------------|------------------|------------------|
| COST: | | | | | | |
| Engineering | 1,650,000 | 200,000 | 150,000 | 200,000 | 400,000 | 700,000 |
| Construction | 9,050,000 | 1,200,000 | 850,000 | 1,200,000 | 2,800,000 | 3,000,000 |
| TOTAL | 10,700,000 | 1,400,000 | 1,000,000 | 1,400,000 | 3,200,000 | 3,700,000 |
| FINANCING: | | | | | | |
| G.O. Bonds | 10,700,000 | 1,400,000 | 1,000,000 | 1,400,000 | 3,200,000 | 3,700,000 |
| TOTAL | 10,700,000 | 1,400,000 | 1,000,000 | 1,400,000 | 3,200,000 | 3,700,000 |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

379-8112-439

SEAL COAT STREET PAVEMENT IMPROVEMENTS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This is the annual program for removal of built-up seal coat from streets with asphalt surface. This program restores surface texture, corrects structural deficiencies, removes built-up seal coat, and prevents deterioration of various streets. This resurfacing process results in better riding surfaces, increased safety with improved surface texture, and increased life expectancy of streets. Built-up seal coat on streets causes excess crown which results in vehicles dragging at driveway entrances. Complete removal of this built-up seal coat allows for repair to curb and gutter and placement of 4 inches of asphalt surface.

COMMENTS

The areas to be resurfaced are chosen each spring based on the current street condition inventory and funding availability. Funding for this program may vary from year to year in order to maintain a consistent overall bond issue each year over five years. Cost estimates include funding for concrete curb and gutter repairs that need to be made prior to street asphalt being placed and also include pedestrian improvements to meet the most recent state and federal accessibility requirements.

Street maintenance operation costs for patching will be reduced for the streets involved in this program.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------------------------|--------------------|----------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 525,000 | 75,000 | 112,500 | 112,500 | 112,500 | 112,500 |
| Construction | 2,975,000 | 425,000 | 637,500 | 637,500 | 637,500 | 637,500 |
| TOTAL | 3,500,000 | 500,000 | 750,000 | 750,000 | 750,000 | 750,000 |
| FINANCING: | | | | | | |
| G.O. Bonds | 3,000,000 | | 750,000 | 750,000 | 750,000 | 750,000 |
| Road Use Tax | 500,000 | 500,000 | | | | |
| TOTAL | 3,500,000 | 500,000 | 750,000 | 750,000 | 750,000 | 750,000 |
| PROGRAM - ACTIVITY: | DEPARTMENT: | | ACCOUNT NO. | | | |
| Transportation - Street Engineering | Public Works | | 060-8101-439 | | | |

RIGHT-OF-WAY RESTORATION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

In recent years, staff has continued to observe and analyze restoration of the Right-of-Way areas associated with CIP projects. Some areas have been restored with sod, while other areas have been restored using seed or dormant seed. Restoration appears to depend on the weather at the time of installation. In areas where vegetation is not anticipated to be successful, other forms of restoration have been used (such as pervious pavement or standard concrete). This program will enable better restoration through a separate contract with a contractor specializing in vegetation establishment (instead of having this as a subcontract in each CIP contract as has been past practice).

COMMENTS

Conditions for each restoration area will be considered independently to select the appropriate and sustainable alternative. Restoration examples include sod, native turf, and pervious and standard colored/stained concrete.

LOCATION

Various locations (coordinated with Public Works streets and utility projects)

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 200,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Construction | 1,425,000 | 285,000 | 285,000 | 285,000 | 285,000 | 285,000 |
| TOTAL | 1,625,000 | 325,000 | 325,000 | 325,000 | 325,000 | 325,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 625,000 | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| Water Utility Fund | 375,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 |
| Sewer Utility Fund | 375,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 |
| Storm Sewer Utility Fund | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 1,625,000 | 325,000 | 325,000 | 325,000 | 325,000 | 325,000 |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

Various

CHERRY AVENUE EXTENSION

PROJECT STATUS: Delayed

Cost Decrease

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The Long Range Transportation Plan identifies the extension of Cherry Avenue south of East Lincoln Way as an important transportation connection for the community. By extending Cherry Avenue south and connecting both Southeast 3rd Street and Southeast 5th Street, traffic congestion will be further relieved from the South Duff Avenue corridor. This project will open additional opportunities for transit connections to the South Duff Avenue commercial district.

COMMENTS

A Transportation Funding Study in 2012/13 identified federal and state grants that may be available for funding this project. The addition of this street extension will result in increased snow removal and ice control costs.

- 2019/20 Cherry Avenue (Southeast 5th Street to East Lincoln Way) and Southeast 3rd Street and Southeast 5th Street (Cherry Avenue west to end) (land acquisition, planning, environmental analysis, and engineering)
- 2020/21 Cherry Avenue (Southeast 5th Street to East Lincoln Way) and Southeast 3rd Street and Southeast 5th Street (Cherry Avenue west to end) (engineering and construction)

Bicycle facilities as part of this project (off-street 10-ft wide shared use path) are estimated to cost \$250,000. The delayed and cost decrease statuses are the result of rescheduling planning originally projected in FY 2018/19 to FY 2019/20 and reducing the cost.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------|------------------|---------|----------------|------------------|---------|---------|
| COST: | | | | | | |
| Planning | | | | | | |
| Land Acquisition/Planning | 150,000 | | 150,000 | | | |
| Engineering | 350,000 | | 150,000 | 200,000 | | |
| Construction | 2,200,000 | | | 2,200,000 | | |
| TOTAL | 2,700,000 | | 300,000 | 2,400,000 | | |
| FINANCING: | | | | | | |
| G.O. Bonds | 810,000 | | 300,000 | 510,000 | | |
| Federal/State Grants | 1,890,000 | | | 1,890,000 | | |
| TOTAL | 2,700,000 | | 300,000 | 2,400,000 | | |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

ARTERIAL STREET PAVEMENT IMPROVEMENTS

PROJECT STATUS: Site Change

Cost Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This annual program utilizes current repair and reconstruction techniques to improve arterial streets with asphalt or concrete. These pavement improvements are needed to restore structural integrity, serviceability, and rideability. Targeted streets are reaching a point of accelerated deterioration. By improving these streets prior to excessive problems, the service life will be extended.

COMMENTS

| | |
|---------|---|
| 2018/19 | No project (Funding prioritized for Grand Avenue Extension) |
| 2019/20 | North Dakota Avenue (UPRR to Ontario Street) and Ontario Street (North Dakota Avenue to Woodstock Avenue) |
| 2020/21 | E. 13 th Street (Duff Avenue to Meadowlane Avenue) |
| 2021/22 | 13 th Street (Wilson Avenue to Duff Avenue) |
| 2022/23 | Airport Road (University Boulevard to S. Riverside Drive) |

Improving these streets will reduce maintenance costs. This reduction will allow for additional and earlier maintenance of other streets.

The Site Change and Cost Change are related to East Lincoln Way (South Duff Avenue to South Skunk River) being removed from this five year plan due to other arterial street pavement conditions being of higher priority.

Bike Facilities as part of this program will include (FY 2020/21: E. 13th Street Duff Avenue to Meadowlane Avenue on-street \$250,000) and (FY 2021/22: 13th Street Wilson Avenue to Duff Avenue on-street \$275,000).

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------|------------------|----------------|------------------|------------------|------------------|----------------|
| COST: | | | | | | |
| Engineering | 1,150,000 | | 250,000 | 425,000 | 325,000 | 150,000 |
| Construction | 6,350,000 | | 1,250,000 | 2,075,000 | 2,425,000 | 600,000 |
| TOTAL | 7,500,000 | | 1,500,000 | 2,500,000 | 2,750,000 | 750,000 |
| FINANCING: | | | | | | |
| G.O. Bonds | 5,000,000 | | 600,000 | 900,000 | 2,750,000 | 750,000 |
| MPO/STP Funds | 680,000 | | 680,000 | | | |
| Federal/State Grants | 1,820,000 | | 220,000 | 1,600,000 | | |
| TOTAL | 7,500,000 | | 1,500,000 | 2,500,000 | 2,750,000 | 750,000 |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

DOWNTOWN STREET PAVEMENT IMPROVEMENTS

PROJECT STATUS: Scope Change

Cost Decrease

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This annual program is for the rehabilitation/reconstruction of streets and alleys within the downtown area (Lincoln Way to 7th Street and Grand Avenue to Duff Avenue). These projects involve pavement reconstruction, rehabilitation of storm and sanitary sewers, and streetscapes. This program will meet the recommendations of the Downtown Improvements Study for the side streets in the downtown area.

COMMENTS

Improvements to the streets in the downtown area will enhance the Main Street Cultural District.

LOCATION

- 2018/19 No Project
- 2019/20 Lincoln Way Alley (Duff Avenue to Sherman Avenue)
- 2020/21 No Project
- 2021/22 No Project
- 2022/23 North/South Alley (Duff Avenue/Douglas Avenue behind Adams Funeral Home)

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 70,000 | | 35,000 | | | 35,000 |
| Construction | 425,000 | | 210,000 | | | 215,000 |
| TOTAL | 495,000 | | 245,000 | | | 250,000 |
| FINANCING: | | | | | | |
| G.O. Bonds | 495,000 | | 245,000 | | | 250,000 |
| TOTAL | 495,000 | | 245,000 | | | 250,000 |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

CONCRETE PAVEMENT IMPROVEMENTS

PROJECT STATUS: Cost Decrease

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This annual program is to rehabilitate or reconstruct concrete street sections that have deteriorated in order to prevent premature breakdown of the pavement. This work will provide enhanced rideability to residents and visitors.

COMMENTS

2018/19: No project

2019/20: Des Moines Avenue (Lincoln Way to East 3rd Street); Center Avenue (Lincoln Way to East 2nd Street); East 3rd Street (Duff Avenue to East Avenue); East 2nd Street (Duff Avenue to Center Avenue); 5th Street (Northwestern Avenue to Allan Drive); Douglas Avenue (7th Street to 10th Street); Gaskill Drive (250 feet south of Friley Road to Country Club Boulevard); and Crawford Avenue (end to East 9th Street)

2020/21: S 17th Street (S Kellogg Avenue to end); S Kellogg Avenue (S 17th Street to S 16th Street); 8th Street (Northwestern Avenue to Duff Avenue); Ford Street (South Dayton Avenue to Bell Avenue); and Bell Avenue (East Lincoln Way to Ford Street)

2021/22: N. 2nd Street (Maple Avenue to Elm Avenue)(\$650,000 G.O. Bonds); S Kellogg Avenue (S 2nd Street to S 3rd Street)(\$250,000 G.O. Bonds and \$80,000 Road Use Tax); and 24th Street (Stange Road to UPRR) and Stange Road (Blankenburg Drive to 24th Street) (\$2,700,000 G.O. Bonds and \$1,500,000 Federal/State Grant)

2022/23: Ridgewood Avenue/Brookridge Avenue/9th Street area (and North Loop Drive (\$400,000)

Repair of these streets will reduce maintenance and repairs needed for them. The S Kellogg Avenue project in 2021/22 will include the Long Range Transportation Plan project ON 29 (on-street bike treatment with estimated cost of \$80,000).

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------|-------------------|----------------|------------------|------------------|------------------|------------------|
| COST: | | | | | | |
| Engineering | 2,145,000 | | 300,000 | 545,000 | 1,000,000 | 300,000 |
| Construction | 10,935,000 | | 2,150,000 | 3,205,000 | 4,180,000 | 1,400,000 |
| TOTAL | 13,080,000 | | 2,450,000 | 3,750,000 | 5,180,000 | 1,700,000 |
| FINANCING: | | | | | | |
| G.O. Bonds | 11,300,000 | | 2,450,000 | 3,650,000 | 3,500,000 | 1,700,000 |
| Road Use Tax | 180,000 | | | 100,000 | 80,000 | |
| Federal/State Grants | 1,600,000 | | | | 1,600,000 | |
| TOTAL | 13,080,000 | | 2,450,000 | 3,750,000 | 5,180,000 | 1,700,000 |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

CYRIDE ROUTE PAVEMENT IMPROVEMENTS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This is the annual program for pavement improvements to streets that are or were bus routes.

These streets were designed and built for light residential traffic. With these streets now designated as bus routes, accelerated deterioration of the street surface has occurred. Pavement improvements will restore street sections that will carry higher traffic volumes.

COMMENTS

2019/20 9th Street (Grand Avenue to Clark Avenue)
 2020/21 No Project
 2021/22 No Project
 2022/23 Lincoln Way (Marshall Avenue to Franklin Avenue)

Improving these streets will reduce maintenance needs for them. This reduction will allow for additional and earlier maintenance of other streets, which will prolong their useful life.

Bike facilities will be included in the 2022/23 project on Lincoln Way from (Marshall Ave to Franklin Ave). The bike facilities will consist of off-street improvements with an estimated cost of \$172,500.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|------------------|----------------|----------------|----------------|----------------|------------------|
| COST: | | | | | | |
| Engineering | 310,000 | | 85,000 | | | 225,000 |
| Construction | 2,015,000 | | 515,000 | | | 1,500,000 |
| TOTAL | 2,325,000 | | 600,000 | | | 1,725,000 |
| FINANCING: | | | | | | |
| G.O. Bonds | 2,325,000 | | 600,000 | | | 1,725,000 |
| TOTAL | 2,325,000 | | 600,000 | | | 1,725,000 |

PROGRAM - ACTIVITY:

Transportation - Street Engineering

DEPARTMENT:

Public Works

ACCOUNT NO.

TRANSPORTATION - SHARED USE PATHS

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-----------------------------------|------------------|----------------|------------------|----------------|----------------|------------------|------|
| PROJECT: | | | | | | | |
| Shared Use Path System Expansion | 3,491,800 | 400,000 | 1,141,000 | 620,000 | 680,800 | 650,000 | 101 |
| Multi-Modal Roadway Improvements | 888,000 | 210,000 | - | 198,000 | 130,000 | 350,000 | 102 |
| Shared Use Path Maintenance | 625,000 | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 | 103 |
| TOTAL PROJECT EXPENDITURES | 5,004,800 | 735,000 | 1,266,000 | 943,000 | 935,800 | 1,125,000 | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Local Option Sales Tax | 3,321,800 | 366,000 | 1,107,000 | 586,000 | 646,800 | 616,000 | |
| Road Use Tax | 888,000 | 210,000 | - | 198,000 | 130,000 | 350,000 | |
| Total City Funding | 4,209,800 | 576,000 | 1,107,000 | 784,000 | 776,800 | 966,000 | |
| Other: | | | | | | | |
| MPO/STP Funds | 795,000 | 159,000 | 159,000 | 159,000 | 159,000 | 159,000 | |
| TOTAL FUNDING SOURCES | 5,004,800 | 735,000 | 1,266,000 | 943,000 | 935,800 | 1,125,000 | |

TRANSPORTATION - SHARED USE PATH SUMMARY

| PROJECT BY ACTIVITY | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--|------------------|------------------|------------------|------------------|------------------|------------------|-------------|
| WATER DISTRIBUTION: | | | | | | | |
| Campustown Public Improvements | 120,000 | - | 120,000 | - | - | - | 72 |
| STREET ENGINEERING: | | | | | | | |
| Grand Avenue Extension | 775,000 | 775,000 | - | - | - | - | 89 |
| Collector Street Improvements | 335,000 | - | - | 100,000 | 160,000 | 75,000 | 90 |
| Cherry Avenue Extension | 250,000 | - | - | 250,000 | - | - | 94 |
| Arterial Street Pavement Improvements | 525,000 | - | - | 250,000 | 275,000 | - | 95 |
| Concrete Pavement Improvements | 80,000 | - | - | - | 80,000 | - | 97 |
| CyRide Route Pavement Improvements | 172,500 | - | - | - | - | 172,500 | 98 |
| Total Street Engineering Projects | 2,137,500 | 775,000 | - | 600,000 | 515,000 | 247,500 | |
| SHARED USE PATH SYSTEM: | | | | | | | |
| Shared Use Path System Expansion | 3,491,800 | 400,000 | 1,141,000 | 620,000 | 680,800 | 650,000 | 101 |
| Multi-Modal Roadway Improvements | 888,000 | 210,000 | - | 198,000 | 130,000 | 350,000 | 102 |
| Shared Use Path Maintenance | 625,000 | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 | 103 |
| Total Shared Use Path Projects | 5,004,800 | 735,000 | 1,266,000 | 943,000 | 935,800 | 1,125,000 | |
| STREET MAINTENANCE: | | | | | | | |
| Bridge Rehabilitation Program | 650,000 | - | - | - | 650,000 | - | 118 |
| TOTAL SHARED USE PATH PROJECTS | 7,912,300 | 1,510,000 | 1,386,000 | 1,543,000 | 2,100,800 | 1,372,500 | |
| AVERAGE EXPENDITURE/FISCAL YEAR | 1,582,460 | | | | | | |

SHARED USE PATH SYSTEM EXPANSION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This program provides for construction of shared use paths on street rights-of-way, adjacent to streets, and through greenbelts. The Long Range Transportation Plan (LRTP) identifies those paths that separate bicycle traffic from higher-speed automobile traffic.

COMMENTS

The projects included in this program are subject to acquiring voluntary easements from property owners. Construction of the 2018/19, 2019/20, and 2021/22 segments are contingent upon acquisition of land. Shared use path maintenance costs will increase due to new shared use path construction.

- 2018/19 Trail Connection south of Lincoln Way (Beedle Drive to Intermodal Facility) (OFF 5 from Long Range Transportation Plan) (construction) (\$400,000)
- 2019/20 Skunk River Trail (Southeast 16th Street to East Lincoln Way) (trail paving) (\$521,000) and Vet Med Trail (S 16th Street to ISU Research Park (\$620,000) trail paving
- 2020/21 Vet Med Trail (South 16th Street to South Grand Avenue) (\$620,000) trail paving
- 2021/22 Squaw Creek (South Skunk River to South Duff Avenue) (\$680,800)
- 2022/23 S. Dayton Trail (E. Lincoln way to S.E. 16th Street) (\$650,000)

The Vet Med Trail project has been coordinated with the S. Grand Avenue Extension project that includes the bridge infrastructure as part of this trail alignment (estimated to be completed in 2018/19).

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|------------------|----------------|------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 608,000 | | 295,000 | 120,000 | 118,000 | 75,000 |
| Land Acquisition | 88,800 | | | | 88,800 | |
| Construction | 2,795,000 | 400,000 | 846,000 | 500,000 | 474,000 | 575,000 |
| TOTAL | 3,491,800 | 400,000 | 1,141,000 | 620,000 | 680,800 | 650,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 2,696,800 | 241,000 | 982,000 | 461,000 | 521,800 | 491,000 |
| MPO/STP Funds | 795,000 | 159,000 | 159,000 | 159,000 | 159,000 | 159,000 |
| TOTAL | 3,491,800 | 400,000 | 1,141,000 | 620,000 | 680,800 | 650,000 |

PROGRAM - ACTIVITY:

Transportation - Shared Use Paths

DEPARTMENT:

Public Works

ACCOUNT NO.

030-8810-439
320-8810-439

MULTI-MODAL ROADWAY IMPROVEMENTS

PROJECT STATUS: Scope Change Cost Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Multi-modal transportation refers to the various modes used by Ames residents to travel the transport system. The modes specifically addressed in this program include bicycling and automobiles. This program is aimed at improving the roadway to create a safer interaction between these modes using alternatives such as improved crossing visibility at intersections, bike detection, and on-street facilities (e.g. bike lanes, sharrows). Bike lanes consist of a portion of the roadway designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists. Sharrows, also known as shared lane markings, are markings used in lanes shared by bicycles and motor vehicles when a travel lane is too narrow to provide a standard width bike lane. Bike detection improvements include retrofitting signalized intersections to radar detection to facilitate the movement of bicycles. These improvements retrofit the existing street to provide a useful and appropriate route of travel for these popular modes used by Ames residents. The proposed locations and treatments that are identified in the Long-Range Transportation Plan (LRTP) will be noted by project numbers (e.g. ON15) from the LRTP.

LOCATIONS

- 2018/19 **On-Street:** ON- 24: 16th Street (Ridgewood to Meadowlane) & Meadowlane (E. 13th Street to E. 16th Street) (\$210,000)
- 2019/20 No Project
- 2020/21 **On-Street:** Clark Avenue/S. Walnut Avenue (ON15: S. 3rd Street to 6th Street) (\$138,000) and Wilder Avenue (ON20: Mortensen Road to Lincoln Way) (\$60,000)
- 2021/22 **Enhanced Intersection Crossing:** Intersection Grand Avenue/6th Street (CR5: improve crossing visibility) (\$130,000)
- 2022/23 **Enhanced Intersection Crossing:** (CR 24, 16th and Grand) (\$350,000)

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 125,000 | 25,000 | | 20,000 | 30,000 | 50,000 |
| Construction | 763,000 | 185,000 | | 178,000 | 100,000 | 300,000 |
| TOTAL | 888,000 | 210,000 | | 198,000 | 130,000 | 350,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 888,000 | 210,000 | | 198,000 | 130,000 | 350,000 |
| TOTAL | 888,000 | 210,000 | | 198,000 | 130,000 | 350,000 |

PROGRAM - ACTIVITY:

Transportation - Shared Use Paths

DEPARTMENT:

Public Works

ACCOUNT NO.

060-8821-439

SHARED USE PATH MAINTENANCE

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

The shared use path recreational and transportation system has continued to expand throughout the community. The shared use paths have typically been constructed with five inches of asphalt or concrete pavement. Structural failure, drainage problems, and vegetation infringement are several causes for the need to improve the pavement. This annual program provides for those improvements.

COMMENTS

The pavement management system for shared use paths is used to guide maintenance activities to segments of the shared use path system that are in need of repair. This inventory aids in prioritizing those segments throughout the community.

Spot repairs that are identified will be prioritized by severity of the repair that is needed and then addressed in the operations budget.

Improvement to the shared use path pavement will enhance the safety and usability of the transportation/recreational system and improve the aesthetics of the right-of-way.

Newer rehabilitation techniques such as mastic joint repair and micro-surface treatments are being utilized as a part of this program.

LOCATIONS

Various locations throughout Ames

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------------------|----------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 90,000 | 18,000 | 18,000 | 18,000 | 18,000 | 18,000 |
| Construction | 535,000 | 107,000 | 107,000 | 107,000 | 107,000 | 107,000 |
| TOTAL | 625,000 | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 625,000 | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| TOTAL | 625,000 | 125,000 | 125,000 | 125,000 | 125,000 | 125,000 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Transportation - Shared Use Paths | | Public Works | 030-8811-439 | | | |

TRANSPORTATION - TRAFFIC ENGINEERING

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|---|------------------|------------------|------------------|------------------|----------------|------------------|-------------|
| PROJECT: | | | | | | | |
| Traffic Signal Program | 1,794,250 | 353,000 | 370,750 | 389,500 | 255,000 | 426,000 | 106 |
| Accessibility Enhancements Program | 1,000,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 | 107 |
| Regional Transportation Count Program | 280,000 | 80,000 | 50,000 | 50,000 | 50,000 | 50,000 | 108 |
| Traffic Calming Program | 72,000 | 60,000 | 12,000 | - | - | - | 109 |
| Long Range Transportation Plan | 500,000 | 500,000 | - | - | - | - | 110 |
| U.S. Highway 69 Improvements | 960,000 | 180,000 | 50,000 | 730,000 | - | - | 111 |
| Intelligent Transportation System Program | 1,863,000 | - | 621,000 | 552,000 | 276,000 | 414,000 | 112 |
| TOTAL PROJECT EXPENDITURES | 6,469,250 | 1,373,000 | 1,303,750 | 1,921,500 | 781,000 | 1,090,000 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 230,000 | - | - | 230,000 | - | - | |
| City: | | | | | | | |
| Road Use Tax | 3,737,650 | 873,000 | 706,950 | 949,900 | 549,000 | 658,800 | |
| Local Option Sales Tax | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | |
| Total City Funding | 4,237,650 | 973,000 | 806,950 | 1,049,900 | 649,000 | 758,800 | |

TRANSPORTATION - TRAFFIC ENGINEERING, continued

| PROJECT/FUNDING SOURCE | TOTAL | 2017/18 | 2018/19 | 2019/20 | 2020/21 | 2021/22 |
|------------------------------------|------------------|------------------|------------------|------------------|----------------|------------------|
| FUNDING SOURCES, continued: | | | | | | |
| Other: | | | | | | |
| MPO/STP Funds | 400,000 | 400,000 | - | - | - | - |
| Federal/State Grants | 1,601,600 | - | 496,800 | 641,600 | 132,000 | 331,200 |
| Total Other Funding | 2,001,600 | 400,000 | 496,800 | 641,600 | 132,000 | 331,200 |
| TOTAL FUNDING SOURCES | 6,469,250 | 1,373,000 | 1,303,750 | 1,921,500 | 781,000 | 1,090,000 |

TRAFFIC SIGNAL PROGRAM

PROJECT STATUS: Location Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The Traffic Signal Program is the annual program that provides for replacing older traffic signals and for constructing new traffic signals in the City. This program will result in improved visibility, reliability, and appearance of signals. Although recent advances in technology have elongated the normal, useful life for traffic signal installations well past the previously expected 25 years, some of the older-generation traffic signals still in use exceed their functional age. Components at those installations (including conduits, wiring, signal heads, and poles) need to be completely replaced. This program also provides funding for those maintenance needs. Also, this program provides for the necessary upgrading of the traffic signal system as technology continues to change. In recent years, traffic signal replacements have included radar detection systems instead of in-pavement loop detection systems that had previously been used (and that were frequently the point of vehicle detection failure). Another advantage of the radar detection system is that it detects bicycles in addition to vehicles.

LOCATIONS

- 2018/19 Lincoln Way/Hyland Avenue signal replacement
- 2019/20 S. Duff & S. 5th Street signal replacement
- 2020/21 Lincoln Way/Beach Avenue signal replacement
- 2021/22 Various equipment upgrades (modernization) at existing signal locations
- 2022/23 S. Duff Avenue/Chestnut Street signal replacement

A continued trend in increasing material costs (specifically for copper wiring and steel for the poles and mast arms) and additional Federal design requirements (such as additional ADA facilities) have resulted in an increased cost of a standard traffic signal. The cost for signalized intersection replacements has been increasing by approximately 3% per year based upon historical bid pricing. Staff tracks this trend and will adjust projected funding for this program each annual CIP cycle. When a full replacement is not necessary, staff will identify equipment within existing signal locations that can be replaced to achieve similar operational improvements to a major reconstruction.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 171,000 | 38,000 | 40,000 | 42,000 | 5,000 | 46,000 |
| Construction | 1,623,250 | 315,000 | 330,750 | 347,500 | 250,000 | 380,000 |
| TOTAL | 1,794,250 | 353,000 | 370,750 | 389,500 | 255,000 | 426,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 1,794,250 | 353,000 | 370,750 | 389,500 | 255,000 | 426,000 |
| TOTAL | 1,794,250 | 353,000 | 370,750 | 389,500 | 255,000 | 426,000 |

PROGRAM - ACTIVITY:

Transportation - Traffic

DEPARTMENT:

Public Works

ACCOUNT NO.

060-7566-439

ACCESSIBILITY ENHANCEMENT PROGRAM

PROJECT STATUS: Cost Increase

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This annual program combines sidewalk and ADA ramp improvements with additional accessibility upgrades at traffic signals and other publicly owned parking facilities. This program will provide for removing and replacing sidewalk intersection crosswalk panels and handicap ramps at locations that fail to meet the Americans with Disabilities Act (ADA) requirement to have truncated dome warning panels installed. It also includes retrofitting existing signalized traffic control devices with audible and vibrotactile push-buttons, and upgrading parking stalls to current accessible standards in any on-street location or parking lot owned by the City of Ames. This program may be combined with and used in conjunction with roadway, traffic signal replacement, or shared use path improvement projects for pedestrian ramp reconstruction.

This program provides safer pedestrian facilities and limits the City's liability for injury to residents using public sidewalks that are in a deteriorated condition. The program also improves ADA accessibility at municipal facilities.

COMMENTS

The City Manager's Office facilitates a survey stakeholders to help prioritize the retrofitting of existing traffic signals that currently do not have audible and vibrotactile operation. These locations will be prioritized along with other ADA improvement needs that are identified throughout the year.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|------------------|--------------------|------------------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 150,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Construction | 850,000 | 170,000 | 170,000 | 170,000 | 170,000 | 170,000 |
| TOTAL | 1,000,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| Local Option Sales Tax | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 |
| TOTAL | 1,000,000 | 200,000 | 200,000 | 200,000 | 200,000 | 200,000 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Transportation - Traffic | | Public Works | 030-7510-439 060-7510-439 | | | |

REGIONAL TRANSPORTATION COUNT PROGRAM

PROJECT STATUS: Cost Increase

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This program is the result of an ongoing need for transportation-related data in the Ames regional area. This program will be for the collection and management of travel demand data from all transportation modes: walking, biking, and various forms of motorized travel. Data from this program will be used to track critical transportation system performance measures which are used to analyze and forecast transportation system needs and priorities. Each year consists of an annual base for data collections services.

COMMENTS

- 2018/19 Data collection base (\$50,000); Traffic Data Management Platform (\$30,000)
- 2019/20 Data collection base (\$50,000)
- 2020/21 Data collection base (\$50,000)
- 2021/22 Data collection base (\$50,000)
- 2022/23 Data collection base (\$50,000)

The data collectors continuously record traffic volumes, speeds, and classification on arterial and collector streets throughout the network. This data supports Long Range Transportation Planning and Modeling efforts, as well as Pavement Management, Safety Analysis, and other system performance measures as needed.

FY 2018/19 includes the licensing cost for a comprehensive traffic data management platform, which in the future can include a public portal for citizens or consultants to freely access traffic data collected in the City of Ames. This platform also creates significant efficiencies for staff through extensive built-in analysis tools that auto-process data as it is uploaded.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Software | | 30,000 | | | | |
| TOTAL | 280,000 | 80,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 280,000 | 80,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 280,000 | 80,000 | 50,000 | 50,000 | 50,000 | 50,000 |

PROGRAM - ACTIVITY:

Transportation - Traffic

DEPARTMENT:

Public Works

ACCOUNT NO.

060-7515-439

TRAFFIC CALMING PROGRAM

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

This program is the result of completing the Neighborhood Traffic Calming Handbook. The handbook is meant to serve as a technical guide, compiling nationally recognized best practices in the field of traffic calming, and then modifying those methods and their application to fit the context of the Ames community.

LOCATIONS

- 2018/19 Traffic Calming in the S. Hazel Avenue area (Lincoln Way to S. 4th Street)
- 2019/20 Traffic Calming in the Burnett Avenue area (near Meeker Elementary School)

The FY 2018/19 location is in response to a City Council referral related to potential traffic impacts from the Stadium View Apartments located at S.4th Street and S. Hazel Avenue.

The FY 2019/20 location is in response to a request from the Burnett Avenue neighborhood located near Meeker Elementary School.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|---------------|--------------------|--------------------|---------|---------|---------|
| COST: | | | | | | |
| Engineering | 11,000 | 10,000 | 1,000 | | | |
| Construction | 61,000 | 50,000 | 11,000 | | | |
| TOTAL | 72,000 | 60,000 | 12,000 | | | |
| FINANCING: | | | | | | |
| Road Use Tax | 72,000 | 60,000 | 12,000 | | | |
| TOTAL | 72,000 | 60,000 | 12,000 | | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Transportation - Traffic | | Public Works | 060-7512-439 | | | |

LONG RANGE TRANSPORTATION PLAN

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The project shown in 2018/19 will be an update to the Long Range Transportation Plan (LRTP) for the Ames region. Typically an update to the LRTP takes approximately 24 months to complete. The LRTP is federally required to be updated every five years, and therefore the latest date for approving this update is October 12, 2020.

COMMENTS

2018/19 2045 Long Range Transportation Plan Update

This program previously included a base amount of \$25,000 annually for smaller studies. This has been moved to the Traffic Engineering operating budget.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|--------------------|------------------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 500,000 | 500,000 | | | | |
| TOTAL | 500,000 | 500,000 | | | | |
| FINANCING: | | | | | | |
| Road Use Tax | 100,000 | 100,000 | | | | |
| MPO Planning Funds | 400,000 | 400,000 | | | | |
| TOTAL | 500,000 | 500,000 | | | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Transportation - Traffic | | Public Works | 060-7505-439 320-7505-439 | | | |

US HIGHWAY 69 IMPROVEMENTS

PROJECT STATUS: Scope Change Site Change

DESCRIPTION/JUSTIFICATION

Intersection and corridor improvement projects along US Highway 69 are included in this program to alleviate congestion and reduce accidents.

LOCATIONS

- 2018/19 Intersection Improvements and Traffic Signal (S. Duff Avenue and US Hwy 30 EB Off-Ramp) - Preliminary Design
- 2019/20 Lincoln Way (Duff Avenue to Gilchrist Street)
- 2020/21 Intersection Improvements and Traffic Signal (S. Duff Avenue and US Hwy 30 EB Off-Ramp) - Construction

As part of a traffic impact study for a proposed residential development along S. Duff Avenue, east of the Ames Airport property, unacceptable delays were identified at the eastbound off-ramp of US Highway 30 and S. Duff Avenue. Queuing on the ramp may be a significant safety issue on S. Duff Avenue and on US Highway 30 alike. Therefore, an engineering analysis (\$100,000 Road Use Tax) was programmed in 2016/17 to look at realigning Billy Sunday Road with the ramp/signal improvements.

The FY 2018/19 project will be to conduct preliminary design, generate a detailed cost estimate, and identify funding sources including potential Federal and State grants. Construction of improvements are programmed in FY 2020/21.

In FY 2019/20, the Iowa Department of Transportation (IDOT) will be resurfacing Lincoln Way between Duff Avenue and Gilchrist Street. The City of Ames is responsible for paying for curb and gutter repair and storm sewer intake repair in the corridor as part of the project.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|--------------------|----------------|--------------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 210,000 | 180,000 | | 30,000 | | |
| Construction | 750,000 | | 50,000 | 700,000 | | |
| TOTAL | 960,000 | 180,000 | 50,000 | 730,000 | | |
| FINANCING: | | | | | | |
| G.O. Bonds | | | | 230,000 | | |
| Road Use Tax | 230,000 | 180,000 | 50,000 | 300,000 | | |
| U-STEP | | | | 200,000 | | |
| TOTAL | 960,000 | 180,000 | 50,000 | 730,000 | | |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | | ACCOUNT NO. | | |
| Transportation - Traffic | | Public Works | | 060-7570-439 | | |

INTELLIGENT TRANSPORTATION SYSTEM PROGRAM

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The 2040 Ames Area Long Range Transportation Plan (LRTP), which became effective on October 12, 2015, identifies a wide range of transportation improvements including those projects that utilize technology that is referred to as Intelligent Transportation Systems (ITS) projects. In the 2040 LRTP, one of the highest priority corridors for installing traffic adaptive signal systems is along S. Duff Avenue and Lincoln Way arterial corridors respectively.

COMMENTS

- 2018/19 No Project
- 2019/20 Traffic Adaptive System (S. Duff Avenue – S 3rd Street to Airport Road) (LRTP Project 66)
- 2020/21 Traffic Adaptive System (Lincoln Way – Beach Avenue to Hyland Avenue) (LRTP Project 65)
- 2021/22 Traffic Adaptive System (Lincoln Way – Grand Avenue to Duff Avenue) (LRTP Project 69)
- 2022/23 Traffic Adaptive System (University Blvd – Lincoln Way to US Highway 30) (LRTP Project 67)

To prepare for these projects, an evaluation of the current traffic communication network is needed. Therefore, 2016/17 included a traffic network master plan that created a detailed inventory and evaluation of the communication network used along the City’s signalized corridors. The plan then identifies the upgrades necessary to support the modern technologies used to manage transportation. Also, included in 2016/17 was a Systems Engineering Analysis for Traffic Adaptive Signal Systems that establishes needs and functional requirements for traffic adaptive corridors throughout Ames. The analysis creates standards and specifications along with evaluation criteria for the various traffic adaptive systems that are currently available on the market. This process is following the FHWA guide for conducting systems engineering evaluation.

Traffic Adaptive Systems are a form of Intelligent Transportation System (ITS) infrastructure that conducts real-time optimization of traffic and pedestrian flow at signalized intersections. Traffic adaptive systems provide a significant improvement in efficiency and will provide reliable travel times during all times of the day. The delay is caused due to coordination with the Iowa DOT to take advantage of potential funding for design. Projects in this program have been delayed a year to allow application for congestion mitigation funds while not conflicting with funding needs of the S. Grand Avenue extension.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 243,000 | | 81,000 | 72,000 | 36,000 | 54,000 |
| Construction | 1,620,000 | | 540,000 | 480,000 | 240,000 | 360,000 |
| TOTAL | 1,863,000 | | 621,000 | 552,000 | 276,000 | 414,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 461,400 | | 124,200 | 110,400 | 144,000 | 82,800 |
| Federal/State Grants | 1,401,600 | | 496,800 | 441,600 | 132,000 | 331,200 |
| TOTAL | 1,863,000 | | 621,000 | 552,000 | 276,000 | 414,000 |

PROGRAM - ACTIVITY:

Transportation - Traffic

DEPARTMENT:

Public Works

ACCOUNT NO.

TRANSPORTATION - STREET MAINTENANCE

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--|------------------|----------------|----------------|----------------|------------------|----------------|------|
| PROJECT: | | | | | | | |
| Main Street Sidewalk Paver Replacement | 544,000 | 171,000 | 190,000 | 88,000 | 95,000 | - | 114 |
| Pavement Restoration | 1,250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 115 |
| Right-of-Way Appearance Enhancements | 220,000 | 30,000 | 100,000 | 30,000 | 30,000 | 30,000 | 116 |
| Neighborhood Curb Replacement Program | 600,000 | 150,000 | 150,000 | 150,000 | 150,000 | - | 117 |
| Bridge Rehabilitation Program | 870,000 | - | 120,000 | 100,000 | 650,000 | - | 118 |
| TOTAL PROJECT EXPENDITURES | 3,484,000 | 601,000 | 810,000 | 618,000 | 1,175,000 | 280,000 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 870,000 | - | 120,000 | 100,000 | 650,000 | - | |
| City: | | | | | | | |
| Road Use Tax | 2,579,000 | 601,000 | 655,000 | 518,000 | 525,000 | 280,000 | |
| Other: | | | | | | | |
| Private Funds | 35,000 | - | 35,000 | - | - | - | |
| TOTAL FUNDING SOURCES | 3,484,000 | 601,000 | 810,000 | 618,000 | 1,175,000 | 280,000 | |

MAIN STREET SIDEWALK PAVER REPLACEMENT

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project provides for the replacement of the pavers in the Main Street corridor. These pavers were installed with the Main Street Reconstruction project in 1999. At that time, the pavers were an aesthetic upgrade to traditional concrete sidewalks. Over time, the pavers have proven to be a difficult maintenance item. Uneven pavers appear every year, and Public Works Operations crews spend considerable amount of time to level or replace pavers. Additional pavers are now in short supply as the pavers are not produced anymore. Winter ice control chemicals applied by adjacent business owners have led to accelerated deterioration of the pavers, especially on the southern side of Main Street where the building provides continuous shade in the winter and no sunlight reaches to the sidewalk to aid in melting of snow and ice.

COMMENTS

The proposed projects would be broken up into block-long segments, and work will be coordinated continually with adjacent business owners to maintain access and safe pedestrian traffic flow through the corridor. This plan will replace the pavers along Main Street in five years.

The Kellogg Avenue and Main Street intersection is still performing well. This portion of the project could be delayed if necessary.

LOCATION

- 2018/19 Burnett to Kellogg (north side and south side sidewalks and crosswalks)
- 2019/20 Kellogg to Douglas (north side and south side sidewalks and crosswalks and Cynthia Duff Plaza)
- 2020/21 Douglas to Duff (north side and south side sidewalks and crosswalks)
- 2021/22 Kellogg Avenue and Main Street Intersection
- 2022/23 No Project

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 72,000 | 24,000 | 25,000 | 11,000 | 12,000 | |
| Construction | 472,000 | 147,000 | 165,000 | 77,000 | 83,000 | |
| TOTAL | 544,000 | 171,000 | 190,000 | 88,000 | 95,000 | |
| FINANCING: | | | | | | |
| Road Use Tax | 544,000 | 171,000 | 190,000 | 88,000 | 95,000 | |
| TOTAL | 544,000 | 171,000 | 190,000 | 88,000 | 95,000 | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|-------------------------------------|--------------------|--------------------|
| Transportation - Street Maintenance | Public Works | 060-7707-439 |

PAVEMENT RESTORATION

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This annual program is for preventive and proactive maintenance of the streets. This allows for a large variety of possible maintenance activities including, but not limited to, slurry seal, full-depth concrete paving, milling and patching of asphalt, joint sealing, diamond grinding, partial depth patching, and new maintenance techniques to preserve and enhance City streets. Locations will be coordinated with street construction to gain the best possible life cycle of streets.

COMMENTS

This program is funded at \$250,000 annually to help extend the longevity of the pavement system and supplement the current pavement restoration activities. Priorities for this program are identified using information from the pavement management system and input from citizens and maintenance crews.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------------------------|------------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 1,250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 |
| TOTAL | 1,250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 1,250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 |
| TOTAL | 1,250,000 | 250,000 | 250,000 | 250,000 | 250,000 | 250,000 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Transportation - Street Maintenance | | Public Works | 060-7723-439 | | | |

RIGHT-OF-WAY APPEARANCE ENHANCEMENTS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project provides for the enhancement of the rights-of-way in the city of Ames. The funding may be used for a number of elements including retaining walls, entryway enhancements, and median enhancements.

COMMENTS

In addition to retaining wall repairs, the entryway enhancement portion could be used to enhance or repair other right of way elements such as decorative signs or monuments.

The Lincoln Way Medians project shown below is for design activities only. Formalizing agreements with partners such as Iowa State University and the Ames Foundation is vital for the success of this project. Once these agreements are reached, the project design may begin as programmed and the construction will be budgeted in a future Capital Improvement Plan year.

LOCATION

- 2018/19 Various locations
- 2019/20 Various locations; Lincoln Way Medians (Beach Avenue to Sheldon Avenue - Engineering) (\$70,000)
- 2020/21 Various locations
- 2021/22 Various locations
- 2022/23 Various locations

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 70,000 | | 70,000 | | | |
| Right-of-Way Enhancements | 150,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| TOTAL | 220,000 | 30,000 | 100,000 | 30,000 | 30,000 | 30,000 |
| FINANCING: | | | | | | |
| Road Use Tax | 185,000 | 30,000 | 65,000 | 30,000 | 30,000 | 30,000 |
| Private Funds | 35,000 | | 35,000 | | | |
| TOTAL | 220,000 | 30,000 | 100,000 | 30,000 | 30,000 | 30,000 |

PROGRAM - ACTIVITY:

Transportation - Street Maintenance

DEPARTMENT:

Public Works

ACCOUNT NO.

060-7731-439

NEIGHBORHOOD CURB REPLACEMENT PROGRAM

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This is the annual program for replacement of deteriorated curb and gutter in selected neighborhood areas. Curb and gutter replacement enhances neighborhood and right-of-way aesthetics.

Areas to receive curb and gutter replacement are selected by staff using input of neighborhoods, the condition of the curb, and the extent of needed repairs.

COMMENTS

Neighborhood Curb Replacement Program decision criteria approved by City Council include the extent of curb deterioration, the number of residential structures in the block, and the longitudinal grade. Locations are coordinated with other pavement improvement locations in the CIP.

LOCATION

2018/19 West Street (Crane Avenue to Hillcrest Avenue)
 2019/20 Franklin Avenue (Lincoln Way to Oakland Street)
 2020/21 12th Street (Grand Avenue to Kellogg Avenue)
 2021/22 Murray Drive (Northwestern Avenue to Grand Avenue)
 2022/23 No Project

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 60,000 | 15,000 | 15,000 | 15,000 | 15,000 | |
| Construction | 540,000 | 135,000 | 135,000 | 135,000 | 135,000 | |
| TOTAL | 600,000 | 150,000 | 150,000 | 150,000 | 150,000 | |
| FINANCING: | | | | | | |
| Road Use Tax | 600,000 | 150,000 | 150,000 | 150,000 | 150,000 | |
| TOTAL | 600,000 | 150,000 | 150,000 | 150,000 | 150,000 | |

PROGRAM - ACTIVITY:

Transportation - Street Maintenance

DEPARTMENT:

Public Works

ACCOUNT NO.

060-7770-439

BRIDGE REHABILITATION PROGRAM

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This program provides funding for necessary repairs recommended by the biennial Iowa Department of Transportation (IDOT) bridge inspections. The IDOT requires inspections for bridges within the city of Ames.

COMMENTS

The 2016 Bridge Inspection and Maintenance Reports indicated minor rehabilitation work should be performed on the 6th Street Bridge over the Union Pacific Railroad and on the Minnesota Avenue Bridge over the Union Pacific Railroad. Work at both of these locations includes footing and concrete joint repairs. These repairs will help extend the lifespan of the existing structures.

The 2016 Bridge Inspection and Maintenance Reports also indicated that the handrail on the Lincoln Way Bridge over Squaw Creek is rapidly deteriorating. The handrail is beginning to rust through in locations and will begin to present further problems in the future if not repaired. The bridge is also in need of minor concrete repair to extend its useful life.

In 2021/22, a project to widen the South 4th Street Bridge to include a shared use path is proposed. This is a heavily trafficked pedestrian and bicycle corridor that is lacking in infrastructure to cross Squaw Creek. This project would address that concern and provide better flow across the bridge.

LOCATION

| | |
|---------|--|
| 2018/19 | No project |
| 2019/20 | 6 th Street Bridge over the UPRR and Minnesota Avenue Bridge over the UPRR (construction/engineering) |
| 2020/21 | Lincoln Way Bridge over Squaw Creek (construction/engineering) |
| 2021/22 | South 4 th Street Bridge over Squaw Creek (construction/engineering) |
| 2022/23 | No project |

Bicycle facilities will be included in the 2021/22 project on the South 4th Street Bridge Rehabilitation project. The project will widen the bridge to include an off-street, 10-ft wide shared use path. Estimated costs for the project include \$650,000.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------|----------------|---------|----------------|----------------|----------------|---------|
| COST: | | | | | | |
| Engineering | 135,000 | | 20,000 | 15,000 | 100,000 | |
| Construction | 735,000 | | 100,000 | 85,000 | 550,000 | |
| TOTAL | 870,000 | | 120,000 | 100,000 | 650,000 | |
| FINANCING: | | | | | | |
| G.O. Bonds | 870,000 | | 120,000 | 100,000 | 650,000 | |
| TOTAL | 870,000 | | 120,000 | 100,000 | 650,000 | |

PROGRAM - ACTIVITY:

Transportation - Street Maintenance

DEPARTMENT:

Public Works

ACCOUNT NO.

TRANSPORTATION - TRANSIT

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--------------------------------------|-------------------|------------------|------------------|------------------|------------------|------------------|------|
| PROJECT: | | | | | | | |
| Vehicle Replacement | 4,996,289 | 715,000 | 965,000 | 965,000 | 1,240,363 | 1,110,926 | 120 |
| Building Expansion and Modernization | 4,405,000 | 860,000 | 820,000 | 1,075,000 | 825,000 | 825,000 | 121 |
| CyRide Shop/Office Equipment | 431,000 | 70,400 | 155,400 | 70,400 | 70,400 | 64,400 | 122 |
| Bus Stop Improvements | 395,000 | 75,000 | 95,000 | 75,000 | 75,000 | 75,000 | 123 |
| Technology Improvements | 1,855,000 | 685,000 | 465,000 | 375,000 | 230,000 | 100,000 | 124 |
| TOTAL PROJECT EXPENDITURES | 12,082,289 | 2,405,400 | 2,500,400 | 2,560,400 | 2,440,763 | 2,175,326 | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Transit Fund | 4,487,258 | 1,117,400 | 875,400 | 895,400 | 860,473 | 738,585 | |
| Other: | | | | | | | |
| Federal/State Grants | 7,595,031 | 1,288,000 | 1,625,000 | 1,665,000 | 1,580,290 | 1,436,741 | |
| TOTAL FUNDING SOURCES | 12,082,289 | 2,405,400 | 2,500,400 | 2,560,400 | 2,440,763 | 2,175,326 | |

CYRIDE VEHICLE REPLACEMENT

PROJECT STATUS: Scope Change

DESCRIPTION/JUSTIFICATION

CyRide will replace/expand its bus fleet by five used buses each year to meet ridership demand and replace vehicles that can no longer be operated in daily service. Additionally, CyRide anticipates future state funding for new buses through the state's capital funding allocation process. CyRide has five vehicles used for administrative support and in the operations division for drivers to switch shifts. These vehicles are on a four- to six-year replacement schedule, ultimately replaced when they no longer are mechanically sound. The two maintenance trucks are on a ten-year replacement cycle. Dial-A-Ride vehicles are replaced every 4-6 years.

In total, these purchases are programmed as follows:

- 2018/19: Purchase five used 40' buses (\$125,000); purchase one new 40' buses (\$510,000), replace administrative vehicle (\$30,000); replace maintenance truck 007 (\$50,000)
- 2019/20: Purchase five used 40' buses (\$135,000); purchase one new 40' bus (\$800,000); replace administrative vehicle (\$30,000)
- 2020/21: Purchase five used 40' buses (\$135,000); purchase one new 40' bus (\$800,000); replace administrative vehicle (\$30,000)
- 2021/22: Purchase five used 40' buses (\$135,000); purchase one new 40' bus and six minibuses (\$1,016,945); replace administrative vehicle (\$30,000); replace the Dial-A-Ride van (\$58,418)
- 2022/23: Purchase five used 40' buses (\$135,000); purchase one new 40' bus (\$850,000); replace administrative vehicle (\$30,000);replace the Dial-A-Ride bus (\$95,926)

COMMENTS

All vehicles, except the new buses/Dial-A-Ride vehicles, will be 100% locally funded. The new buses will be funded with 80-85% federal funding, including the State of Iowa's Iowa Clean Air Attainment Program (ICAAP) funds that are a distribution of federal dollars. For budget year's 2019/20 and 2020/21, the Ames Area MPO approved \$225,000 each year to assist in funding the purchase of new buses.

LOCATION

CyRide, 601 N. University Boulevard

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------------|------------------|----------------|----------------|----------------|------------------|------------------|
| COST: | | | | | | |
| Large Buses - 40' New | 3,976,945 | 510,000 | 800,000 | 800,000 | 1,016,945 | 850,000 |
| Used Buses | 665,000 | 125,000 | 135,000 | 135,000 | 135,000 | 135,000 |
| Administrative Vehicles | 150,000 | 30,000 | 30,000 | 30,000 | 30,000 | 30,000 |
| Shop Vehicles | 50,000 | 50,000 | | | | |
| Dial-A-Ride Bus/Van | 154,344 | | | | 58,418 | 95,926 |
| TOTAL | 4,996,289 | 715,000 | 965,000 | 965,000 | 1,240,363 | 1,110,926 |
| FINANCING: | | | | | | |
| Transit Fund | 1,241,258 | 307,000 | 100,000 | 100,000 | 380,073 | 354,185 |
| PTMS Funds | 3,305,031 | 408,000 | 640,000 | 640,000 | 860,290 | 756,741 |
| STP Funds | 450,000 | | 225,000 | 225,000 | | |
| TOTAL | 4,996,289 | 715,000 | 965,000 | 965,000 | 1,240,363 | 1,110,926 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|------------------------------|
| Transportation - Transit | CyRide | 552-1159-439 552-1169-439 |

DESCRIPTION/JUSTIFICATION

CyRide's original bus storage building is 33 years old and major components of the building are at the end of their useful life. Additionally, the facility is housing more vehicles than it was originally designed for, creating higher wear and tear on the facility and a need to explore expansion options. As a result, this plan has been developed to keep the facility in a state of good repair, as is required by the Federal Transit Administration:

- 2018/19: Replace a portion of CyRide's HVAC system in the original portion of the building (\$100,000); Bus Wash Rehab. (\$650,000); replace EIFS coating (\$25,000); concrete replacement (\$50,000)
- 2019/20: Replace a portion of CyRide's HVAC system in the original portion of the building (\$700,000); concrete replacement (\$85,000)
- 2020/21: Construct an addition onto a new/existing facility (\$750,000); concrete replacement (\$40,000); replace fueling system with a high-speed fueling system (\$250,000)
- 2021/22: Construct an addition onto a new/existing facility (\$750,000); concrete replacement (\$40,000)
- 2022/23: Construct an addition onto a new/existing facility (\$750,000); concrete replacement (\$40,000)

In addition, A& E services will be utilized each year (\$35,000) to support construction projects/development of bid plans and specifications.

COMMENTS

The HVAC units are original to the building. CyRide's current bus washer will be 14 years old at the time of replacement, which is past the expected 10-year life for this type of equipment. The concrete work is for CyRide's two bus turnarounds and CyRide's facility where the pavement is crumbling under the weight of the buses. The A & E services would provide technical expertise during the various construction projects, as well as assisting with the preparation of bid documents. The EIFS coating is up to twenty years old and is in deteriorating condition. The new high speed fueling system would allow current employees to fuel each bus in the same amount of time as CyRide's continues to expand its fleet. This CIP assumes a plan to expand CyRide's facility is developed over this next year and that this plan/facility will be built in pieces as funding is identified. To-date, CyRide has reserved \$715,166 in local match dollars for a grant to begin constructing more facility space.

LOCATION

CyRide, 601 N. University Boulevard

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------|------------------|----------------|----------------|------------------|----------------|----------------|
| COST: | | | | | | |
| Architectural/Engineering | 175,000 | 35,000 | 35,000 | 35,000 | 35,000 | 35,000 |
| Equipment | 2,650,000 | 825,000 | 785,000 | 1,040,000 | | |
| Construction | 1,580,000 | | | | 790,000 | 790,000 |
| TOTAL | 4,405,000 | 860,000 | 820,000 | 1,075,000 | 825,000 | 825,000 |
| FINANCING: | | | | | | |
| Transit Fund | 1,445,000 | 260,000 | 260,000 | 475,000 | 225,000 | 225,000 |
| State of Iowa - PTIG | 2,960,000 | 600,000 | 560,000 | 600,000 | 600,000 | 600,000 |
| TOTAL | 4,405,000 | 860,000 | 820,000 | 1,075,000 | 825,000 | 825,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|------------------------------|
| Transportation - Transit | CyRide | 552-1159-439 552-1169-439 |

CYRIDE SHOP AND OFFICE EQUIPMENT

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project is to address replacement of shop and office equipment used for CyRide operations. While a majority of the 2018/19 – 2022/23 shop purchases in this category are smaller items where replacement need is less predictable, they have been generally described in this CIP. Specific shop needs will be identified annually to efficiently operate CyRide and address OSHA, Department of Natural Resources, and other federal requirements as they are implemented, at a total cost of \$50,000 per year, plus larger equipment as described below. Additionally, three to six computers, laptops and printers, as well as replacement of office chairs and standup style desks will be funded each year at an estimated cost of \$14,400 to \$20,400 per year.

2018/19 – 2022/23 larger equipment purchases include:

- 2019/20 – Replace CyRide’s current forklift (\$60,000); replace an air compressor (\$25,000)

COMMENTS

The 2018/19 smaller shop and office equipment expenditures include the replacement of three computers, three chairs and two standup desks, as well as the following shop equipment:

- Diesel Particulate (Trip Blaster) - (\$30,000)
- Tire Machine & Balancer - (\$20,000)

CyRide's Air Compressor will be 36 years old at the time of replacement and will have exceeded its useful life. CyRide’s forklift is 36 years old and is becoming unreliable and expensive to repair.

LOCATION

CyRide, 601 N. University Boulevard

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Computers | 96,000 | 20,400 | 20,400 | 20,400 | 20,400 | 14,400 |
| Forklift | 60,000 | | 60,000 | | | |
| Shop Equipment | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Air Compressor | 25,000 | | 25,000 | | | |
| TOTAL | 431,000 | 70,400 | 155,400 | 70,400 | 70,400 | 64,400 |
| FINANCING: | | | | | | |
| Transit Fund | 431,000 | 70,400 | 155,400 | 70,400 | 70,400 | 64,400 |
| TOTAL | 431,000 | 70,400 | 155,400 | 70,400 | 70,400 | 64,400 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Transportation - Transit | | CyRide | 552-1159-439 | | | |

BUS STOP IMPROVEMENTS

PROJECT STATUS: Scope Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

One of the most frequently requested customer suggestions received by CyRide is regarding the condition or lack of amenities at its more than 450 bus stop locations throughout the city. Therefore, over the next five-year period (2018/19 through 2022/23), CyRide will install two to three new bus shelters and move existing bus shelters to new locations each year, thereby increasing the total number of bus shelters for CyRide’s customers. The specific locations will be identified each year based on CyRide’s ability to complete installation at sites that year and the bus stop priority list based on a previous bus stop improvements study. In addition to shelters and concrete pads; amenities and connections to sidewalks will be included to make using the bus easier for customers. In total, approximately \$50,000 per year in improvements will be completed.

Additionally, a number of these improvements are small improvements, but must now complete a historical and environmental process under new federal regulations. This can take up to four months to document and received federal approval. In order to be more responsive to its customers, CyRide will budget an additional \$25,000 each year in local dollars for these smaller projects so that they can more quickly be accomplished.

In 2019/20, CyRide will design a new bus stop sign and install these at its bus stop locations (\$20,000). Current signage is more than 20 years old, with many signs needing to be replaced. This project will allow for a fresh, new image and replace signs that would need to be replaced due to wear from the outdoor elements.

COMMENTS

Funding for these improvements will be provided by 80% federal dollars administered under a grant from the State of Iowa and 20% local funding from CyRide’s budget.

LOCATION

Various locations throughout Ames

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Pads, Benches, Shelters | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Concrete | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| Bus Signs | 20,000 | | 20,000 | | | |
| TOTAL | 395,000 | 75,000 | 95,000 | 75,000 | 75,000 | 75,000 |
| FINANCING: | | | | | | |
| Transit Fund | 195,000 | 35,000 | 55,000 | 35,000 | 35,000 | 35,000 |
| Federal 5310 Grants | 200,000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| TOTAL | 395,000 | 75,000 | 95,000 | 75,000 | 75,000 | 75,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|------------------------------|
| Transportation - Transit | CyRide | 552-1159-439 552-1169-439 |

CYRIDE TECHNOLOGY IMPROVEMENTS

PROJECT STATUS: Scope Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

CyRide has equipped its bus fleet with video camera technology that has improved customer safety and information regarding its daily operation of service. As a result, CyRide has developed a bus video replacement system that replaces the video system on five to twelve buses each year (\$50,000 to \$60,000 annually) over the course of the five-year plan. These systems must be replaced periodically as the existing equipment has become obsolete and is not supported by the vendor. CyRide currently has three different video systems on its bus fleet, which are used to investigate customer complaints and identify operational issues.

CyRide will also upgrade its NextBus GPS vehicle tracking system over the next four years (\$80,000 to 100,000 each year) as it will be six to nine years old at the time the units are replaced or purchase a new vehicle location system based on an examination of available technology. CyRide will also replace its radio system (\$80,000), as part of the citywide emergency radio replacement program, anticipated in 2019/20. Up to 25 Automatic Passenger Counters (APCs) will be purchased in 2018/19, 2019/20, and 2020/21 to assist CyRide in counting passengers as they board the bus, thereby decreasing boarding time on its routes (\$25,000 per year). CyRide's maintenance shop and bus storage areas will be added to a new security system that was added to the administrative offices in 2017/18. This second phase of the facility security system in 2018/19 will complete coverage of the building (\$200,000).

The disabled community has requested new technology on the buses that will automatically announce bus stop locations when the bus arrives for visually impaired customers. CyRide will phase this project in over four years (2018/19, 2019/20, 2020/21 and 2021/22) at a total cost of \$850,000.

COMMENTS

This area of CyRide's capital budget is has become a larger portion of the budget over the past five years as the federal government focuses on transit security and CyRide customers demand more technology to make using its service more convenient.

LOCATION

CyRide, 1700 University Boulevard

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Bus Security Cameras | 270,000 | 60,000 | 60,000 | 50,000 | 50,000 | 50,000 |
| Building Security System | 200,000 | 200,000 | | | | |
| Annunciators | 850,000 | 300,000 | 200,000 | 200,000 | 100,000 | 50,000 |
| Radio System Upgrade | 80,000 | | 80,000 | | | |
| APCs | 75,000 | 25,000 | 25,000 | 25,000 | | |
| GPS Tracking System | 380,000 | 100,000 | 100,000 | 100,000 | 80,000 | |
| TOTAL | 1,855,000 | 685,000 | 465,000 | 375,000 | 230,000 | 100,000 |
| FINANCING: | | | | | | |
| Transit Fund | 1,175,000 | 445,000 | 305,000 | 215,000 | 150,000 | 60,000 |
| 5310 Funds | 680,000 | 240,000 | 160,000 | 160,000 | 80,000 | 40,000 |
| TOTAL | 1,855,000 | 685,000 | 465,000 | 375,000 | 230,000 | 100,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|------------------------------|
| Transportation - Transit | CyRide | 552-1159-439 552-1169-439 |

TRANSPORTATION - AIRPORT

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|--|----------------|----------|----------------|----------------|----------------|----------------|------|
| PROJECT: | | | | | | | |
| Airport Improvements | 858,000 | - | 180,000 | 396,000 | 180,000 | 102,000 | 126 |
| TOTAL PROJECT EXPENDITURES | 858,000 | - | 180,000 | 396,000 | 180,000 | 102,000 | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Airport Construction Fund | 109,800 | - | 30,000 | 39,600 | 30,000 | 10,200 | |
| Other: | | | | | | | |
| Federal Aviation Administration Grants | 448,200 | - | - | 356,400 | - | 91,800 | |
| | 300,000 | - | 150,000 | - | 150,000 | - | |
| Total Other Funding | 748,200 | - | 150,000 | 356,400 | 150,000 | 91,800 | |
| TOTAL FUNDING SOURCES | 858,000 | - | 180,000 | 396,000 | 180,000 | 102,000 | |

AIRPORT IMPROVEMENTS

PROJECT STATUS: Delayed

DESCRIPTION/JUSTIFICATION

Airport improvement projects are accomplished through this program.

COMMENTS

The projects included in this program are determined by the Airport Master Plan which details Airport development needs for a ten-year period. The Master Plan Update that was completed in 2007 identifies projects that qualify for Federal Aviation Administration (FAA) funding.

| | |
|---------|---|
| 2018/19 | No Project |
| 2019/20 | Miscellaneous Hangar Repairs |
| 2020/21 | Electric Vault and Old Terminal Building Demolition |
| 2021/22 | Miscellaneous Hangar Repairs |
| 2022/23 | Environmental Assessment (Runway 01/19 Extension) |

The Airport Master Plan outlines the steps necessary to extend the main runway 01/19 from approximately 6,000 feet to 8,000 feet. The purpose of the runway extension is to accommodate future growth of the airport by making it possible for larger aircraft to land in Ames year-round. The projects to relocate electrical equipment to an above-ground vault, demolish the old terminal building, and to perform the environmental assessment for the runway extension were all delayed one year from last year's CIP. The delay was recommended by FAA Central Region staff to ensure the availability of Federal funds for the projects. Miscellaneous Hangar Repairs will include structural and safety repairs to the City owned hangars.

LOCATION

Ames Municipal Airport

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 181,400 | | 10,000 | 59,400 | 10,000 | 102,000 |
| Construction | 676,600 | | 170,000 | 336,600 | 170,000 | |
| TOTAL | 858,000 | | 180,000 | 396,000 | 180,000 | 102,000 |
| FINANCING: | | | | | | |
| Airport Construction Fund | 109,800 | | 30,000 | 39,600 | 30,000 | 10,200 |
| DOT Funding | 300,000 | | 150,000 | | 150,000 | |
| FAA Funding | 448,200 | | | 356,400 | | 91,800 |
| TOTAL | 858,000 | | 180,000 | 396,000 | 180,000 | 102,000 |

PROGRAM - ACTIVITY:

Transportation - Airport

DEPARTMENT:

Public Works

ACCOUNT NO.

PIPE GALLERY



COMMUNITY
ENRICHMENT

COMMUNITY ENRICHMENT

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|------------------------------------|------------------|------------------|----------------|------------------|----------------|------------------|------|
| EXPENDITURES: | | | | | | | |
| Parks and Recreation | 4,620,000 | 1,110,000 | 790,000 | 840,000 | 590,000 | 1,290,000 | 128 |
| Cemetery | 100,000 | 25,000 | - | - | - | 75,000 | 142 |
| City Manager | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 | 144 |
| Planning and Housing Facilities | 500,000 | 100,000 | 100,000 | 100,000 | 100,000 | 100,000 | 146 |
| | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 | 149 |
| TOTAL EXPENDITURES | 5,770,000 | 1,335,000 | 990,000 | 1,090,000 | 790,000 | 1,565,000 | |
| FUNDING SOURCES: | | | | | | | |
| Debt: | | | | | | | |
| G.O. Bonds | 300,000 | - | - | - | - | 300,000 | |
| City: | | | | | | | |
| Local Option Sales Tax | 4,845,000 | 1,100,000 | 875,000 | 1,015,000 | 790,000 | 1,065,000 | |
| Park Development Fund | 370,000 | 90,000 | 80,000 | - | - | 200,000 | |
| Ice Arena Capital Reserve | 205,000 | 120,000 | 10,000 | 75,000 | - | - | |
| Total City Funding | 5,420,000 | 1,310,000 | 965,000 | 1,090,000 | 790,000 | 1,265,000 | |
| Other: | | | | | | | |
| Ames Community School District | 50,000 | 25,000 | 25,000 | - | - | - | |
| TOTAL FUNDING SOURCES | 5,770,000 | 1,335,000 | 990,000 | 1,090,000 | 790,000 | 1,565,000 | |

COMMUNITY ENRICHMENT - PARKS AND RECREATION

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|---------------------------------------|------------------|------------------|----------------|----------------|----------------|------------------|-------------|
| PROJECT: | | | | | | | |
| Park System/Facility Improvements | 1,625,000 | 45,000 | 440,000 | 215,000 | 350,000 | 575,000 | 130 |
| Furman Aquatic Center | 240,000 | 30,000 | - | - | 60,000 | 150,000 | 131 |
| Homewood Golf Course | 1,010,000 | 750,000 | 150,000 | - | 10,000 | 100,000 | 132 |
| Ames/ISU Ice Arena | 205,000 | 120,000 | 10,000 | 75,000 | - | - | 133 |
| Franklin Park Improvements | 80,000 | 80,000 | - | - | - | - | 134 |
| ADA Transition Plan Improvements | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 | 135 |
| Municipal Pool | 100,000 | 50,000 | 50,000 | - | - | - | 136 |
| Edwards Park Development | 90,000 | 10,000 | 80,000 | - | - | - | 137 |
| Moore Memorial Park Pedestrian Bridge | 385,000 | - | 35,000 | 350,000 | - | - | 138 |
| Playground Equipment Improvements | 490,000 | - | - | 175,000 | 135,000 | 180,000 | 139 |
| Ada Hayden Heritage Park | 70,000 | - | - | - | 10,000 | 60,000 | 140 |
| Rose Prairie Park Development | 200,000 | - | - | - | - | 200,000 | 141 |
| TOTAL PROJECT EXPENDITURES | 4,620,000 | 1,110,000 | 790,000 | 840,000 | 590,000 | 1,290,000 | |

COMMUNITY ENRICHMENT - PARKS AND RECREATION, continued

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|--------------------------------|------------------|------------------|----------------|----------------|----------------|------------------|
| FUNDING SOURCES: | | | | | | |
| Debt: | | | | | | |
| G.O. Bonds | 300,000 | - | - | - | - | 300,000 |
| City: | | | | | | |
| Local Option Sales Tax | 3,695,000 | 875,000 | 675,000 | 765,000 | 590,000 | 790,000 |
| Ice Arena Capital Reserve | 205,000 | 120,000 | 10,000 | 75,000 | - | - |
| Park Construction Fund | 370,000 | 90,000 | 80,000 | - | - | 200,000 |
| Total City Funding | 4,270,000 | 1,085,000 | 765,000 | 840,000 | 590,000 | 990,000 |
| Other: | | | | | | |
| Ames Community School District | 50,000 | 25,000 | 25,000 | - | - | - |
| TOTAL FUNDING SOURCES | 4,620,000 | 1,110,000 | 790,000 | 840,000 | 590,000 | 1,290,000 |

PARK SYSTEM/FACILITY IMPROVEMENTS

PROJECT STATUS: Delayed

Scope Change

DESCRIPTION/JUSTIFICATION

To maintain City parks in a safe and quality manner, the projects listed below address maintenance issues and improvements at various locations.

COMMENTS

- 2018/19: Park Maintenance: Address electric code issues in several buildings (\$45,000)
- 2019/20: Bandshell: Engineering/design for renovating changing rooms (\$5,000)
Gateway Hills Park: Exterior building improvements/repairs to administrative office (\$35,000); Install erosion control at Carroll Marty Disc Golf Course (\$75,000)
Inis Grove Park: Replace tennis court fencing (\$25,000)
Site to be determined: Remove wading pool and construct a spray pad out of the flood plain (\$300,000)
- 2020/21: Bandshell: Renovate changing rooms (\$50,000)
Carr Park: Engineering/design for removing bath house and new shelter with restroom (\$15,000)
Inis Grove Park: Install shared use paths along 24th Street and Duff Avenue (\$150,000)
- 2021/22: Carr Park: Remove bath house and construct new shelter with restroom (\$225,000)
Gateway Hills Park: Engineering/design for adding a restroom (\$10,000);
McCarthy Lee Park: Add gutters to the hill drive (\$40,000)
River Valley Park: Replace Cottonwood shelter (\$75,000)
- 2022/23: Community Center: Refinish wood gymnasium floor (\$30,000)
Gateway Hills Park: Construct restroom (\$50,000); Install new standards, drainage and borders on sand volleyball courts (\$50,000)
McCarthy Lee Park: Install irrigation system at McCarthy Lee sports fields (\$45,000)
Park Maintenance: Consolidate maintenance facilities (\$300,000)
River Valley Park: Install additional parking by Cottonwood shelter (\$100,000)

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 30,000 | | 5,000 | 15,000 | 10,000 | |
| Construction | 1,595,000 | 45,000 | 435,000 | 200,000 | 340,000 | 575,000 |
| TOTAL | 1,625,000 | 45,000 | 440,000 | 215,000 | 350,000 | 575,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 1,325,000 | 45,000 | 440,000 | 215,000 | 350,000 | 275,000 |
| G.O. Bonds | 300,000 | | | | | 300,000 |
| TOTAL | 1,625,000 | 45,000 | 440,000 | 215,000 | 350,000 | 575,000 |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

Parks and Recreation

ACCOUNT NO.

030-4902-459

FURMAN AQUATIC CENTER

PROJECT STATUS: Scope Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This facility opened in May of 2010. It has been operational for eight seasons with an average of approximately 100,000 visitors per summer. To ensure it remains a quality facility, structural and mechanical items have been identified and will be addressed in a systematic manner.

During the last two seasons, there has been an increase in people accessing the facility outside of normal business hours, which increases the City’s risk if an incident were to occur. In addition, staff has needed to clean up the effects of mischievous behavior. The current cameras are outdated and video quality is poor which does not help Police apprehend the perpetrators. Installing new state-of-the-art cameras will help identify the individuals.

Requests for a gathering space outside of the aquatic center have been received from users of the facility. Daycare providers would like a space to gather children for snack time and check-in. Potential renters of the facility have asked about a place to gather and picnic prior to their rental time. Adding a shelter will address these requests and potentially increase rental revenue.

The current light fixtures allow water to accumulate inside the fixture which has to be drained annually. Replacing with an LED lamp and better fixture will reduce maintenance and energy consumption. The play structure in the Splash Pool is becoming faded and needs to be refurbished.

COMMENTS

- 2018/19: Replace security cameras (\$30,000)
- 2021/22: Install a shelter adjacent the parking lot (\$60,000)
- 2022/23: Replace the light fixtures on the pool deck (\$100,000); Refurbish the play structure in the Splash Pool (\$50,000)

LOCATION

Furman Aquatic Center, 1365 13th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 240,000 | 30,000 | | | 60,000 | 150,000 |
| TOTAL | 240,000 | 30,000 | | | 60,000 | 150,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 240,000 | 30,000 | | | 60,000 | 150,000 |
| TOTAL | 240,000 | 30,000 | | | 60,000 | 150,000 |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

Parks and Recreation

ACCOUNT NO.

030-4907-459

DESCRIPTION/JUSTIFICATION

To enhance the services provided, the projects listed below will address facility needs.

The current clubhouse was moved to the site in 1970, is not energy efficient, and lacks adequate storage in the lower level for carts. This project will remove the clubhouse and replace it with a larger community room that could be used for weddings, family gatherings, and company outings. This project is a great opportunity to provide residents with a year-round facility while addressing the above-stated deficiencies. An open floor plan, with the ability to separate the community room from the golfer check-in area, will ensure this facility can be used in all seasons. Additionally, a shared use path will be installed along Duff Ave., along 20th Street, and to the clubhouse to meet code requirements.

The current bridge was designed for walking golfers. Since the demand for motorized carts at Homewood has increased, replacing this bridge with one designed for motorized carts will speed up play and reduce safety concerns for golfers having to drive along Hole #8 to get to the 9th green.

COMMENTS

- 2018/19: Replace the current clubhouse with a new building (\$750,000)
- 2019/20: Install shared use path along Duff Ave., along 20th Street, and to the new clubhouse (\$150,000)
- 2021/22: Engineering/design for replacing the bridge on Hole #9 so it can accommodate carts (\$10,000)
- 2022/23: Replace the bridge on Hole #9 so it can accommodate carts (\$100,000)

LOCATION

Homewood Golf Course, 401 E 20th Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|------------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 10,000 | | | | 10,000 | |
| Construction | 1,000,000 | 750,000 | 150,000 | | | 100,000 |
| TOTAL | 1,010,000 | 750,000 | 150,000 | | 10,000 | 100,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 1,010,000 | 750,000 | 150,000 | | 10,000 | 100,000 |
| TOTAL | 1,010,000 | 750,000 | 150,000 | | 10,000 | 100,000 |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

Parks and Recreation

ACCOUNT NO.

030-4917-459

AMES/ISU ICE ARENA

PROJECT STATUS: Cost Decrease

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The Ames/ISU Ice Arena is over 16 years old, and with the goal of maintaining a quality facility, the following items need to be replaced.

Funding for capital improvement projects is provided through the Ice Arena Capital Reserve Fund. Every year, the City and Iowa State University each contribute \$20,000 to this fund to ensure the facility is well-maintained. As of June 30, 2017, this fund totaled \$184,066.

COMMENTS

- FY 2018/19: Convert to new refrigerant (i.e. Freon) (\$40,000); Replace ice resurfacer (\$80,000) (Purchase price \$105,000 – Trade in \$25,000)
- FY 2019/20: Engineering/design parking lot reconstruction (\$10,000)
- FY 2020/21: Reconstruct parking lot (\$75,000)

LOCATION

Ames/ISU Ice Arena, 1505 Gateway Hills Park Drive

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|---------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Equipment | 80,000 | 80,000 | | | | |
| Construction | 115,000 | 40,000 | | 75,000 | | |
| Engineering/Design | 10,000 | | 10,000 | | | |
| TOTAL | 205,000 | 120,000 | 10,000 | 75,000 | | |
| FINANCING: | | | | | | |
| Ice Arena Capital Reserve Funds | 205,000 | 120,000 | 10,000 | 75,000 | | |
| TOTAL | 205,000 | 120,000 | 10,000 | 75,000 | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|----------------------|--------------------|
| Community Enrichment | Parks and Recreation | Various |

FRANKLIN PARK IMPROVEMENTS

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Staff was approached by the College Creek/Old Middle School Neighborhood Association regarding safety concerns and potential criminal activity in Franklin Park. This park is no longer leased from Iowa State University as the land was purchased from ISU in 2017. Staff has met with neighbors to identify their concerns, vision for the park, and potential improvements. The neighbors indicated the need for more lighting, a shelter, a path, additional seating, and a few other items. Parks staff have trimmed many trees and removed others to provide better visibility through the park, and the Electric Department installed additional LED lighting on existing poles to help address some of the safety concerns. This funding request will address the needs identified by the neighbors.

COMMENTS

FY 2018/19: Renovate the Franklin Neighborhood Park (\$80,000)

LOCATION

Franklin Park, 201 South Franklin Avenue

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Park Development | 80,000 | 80,000 | | | | |
| TOTAL | 80,000 | 80,000 | | | | |
| FINANCING: | | | | | | |
| Park Development Fund | 80,000 | 80,000 | | | | |
| TOTAL | 80,000 | 80,000 | | | | |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|----------------------|--------------------|
| Community Enrichment | Parks and Recreation | 340-4995-459 |

ADA TRANSITION PLAN IMPROVEMENTS

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

To better understand where Parks and Recreation does not comply with the 2010 Americans with Disabilities Act Standards for Accessible Design, an inventory and assessment of the park system and facilities is being conducted in FY 2017/18. Upon conclusion of the inventory and assessment, a transition plan will be developed in order to become compliant. In anticipation of items needing to be corrected, money is being put into each year of the CIP. This is an estimate and could be higher or lower, but will not be known until the transition plan is finalized.

COMMENTS

- 2018/19: ADA Transition Plan items to be determined (\$25,000)
- 2019/20: ADA Transition Plan items to be determined (\$25,000)
- 2020/21: ADA Transition Plan items to be determined (\$25,000)
- 2021/22: ADA Transition Plan items to be determined (\$25,000)
- 2022/23: ADA Transition Plan items to be determined (\$25,000)

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| TOTAL | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |
| TOTAL | 125,000 | 25,000 | 25,000 | 25,000 | 25,000 | 25,000 |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

Parks and Recreation

ACCOUNT NO.

030-4908-459

MUNICIPAL POOL

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

In 2006, 2009, and 2012, engineering consultants were retained to provide recommendations regarding mechanical, electrical, structural, and any other needed improvements for the Municipal Pool. In 2012, consultants were given the goal of keeping this facility operational until approximately 2017. Their 2012 study indicated substantial improvements, totaling \$450,000, were needed between 2013 and 2017. It was also suggested these improvements be made as soon as possible. The consultants also stated in their report that following **2017**, further repairs to this facility could be cost prohibitive.

The City and Ames Community School District's joint use agreement for Municipal Pool expires on **June 30, 2020**. All capital costs are shared equally by the City and Ames Community School District. With the agreement set to expire June 30, 2020, it is possible that the School District or the City will have a new facility by that time. Therefore, shared funding of capital expenses is being shown through FY 2019/20. A new agreement will be needed for FY 2020/21 and beyond if a new facility is not constructed prior to that time.

COMMENTS

2018/19: Total \$50,000 – To be determined
2019/20: Total \$50,000 – To be determined

LOCATION

Municipal Pool, 1925 Ames High Drive

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Architects/Engineering | 10,000 | 5,000 | 5,000 | | | |
| Construction | 90,000 | 45,000 | 45,000 | | | |
| TOTAL | 100,000 | 50,000 | 50,000 | | | |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 50,000 | 25,000 | 25,000 | | | |
| Ames School District | 50,000 | 25,000 | 25,000 | | | |
| TOTAL | 100,000 | 50,000 | 50,000 | | | |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

Parks and Recreation

ACCOUNT NO.

030-4916-459

EDWARDS PARK DEVELOPMENT

PROJECT STATUS: New

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The old Edwards School site is approximately six acres and is owned by the Ames Community School District. The Old Edwards Neighborhood Association raised funds to offset demolition costs of the school by the District. In exchange for these funds, the School Board agreed to transfer the land to the City to be developed into a neighborhood park. City Council agreed to accept the land in a “clean and green” condition and develop it into a park. This transfer may happen in late FY 2017/18. The site already houses playground equipment which the City helped fund several years ago. In preliminary conversation with the neighborhood association leadership, they indicated the need for additional amenities such as a shelter, basketball pad, benches, drinking fountain, and picnic tables. Meetings with the neighbors will be held to identify the needs and then a site plan will be developed. Development of the park would then follow. If the neighbors want features that require funding in excess of the \$80,000, the Association would be asked to fundraise for these additional amenities.

COMMENTS

FY 2018/19: Engineering and design for Edwards Neighborhood Park (\$10,000)
 FY 2019/20: Develop the Edwards Neighborhood Park (\$80,000)

LOCATION

Corner of Westwood Drive and Woodland Street

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 10,000 | 10,000 | | | | |
| Construction | 80,000 | | 80,000 | | | |
| TOTAL | 90,000 | 10,000 | 80,000 | | | |
| FINANCING: | | | | | | |
| Park Development Fund | 90,000 | 10,000 | 80,000 | | | |
| TOTAL | 90,000 | 10,000 | 80,000 | | | |

| PROGRAM - ACTIVITY | DEPARTMENT: | ACCOUNT NO. |
|---------------------------|----------------------|--------------------|
| Community Enrichment | Parks and Recreation | 340-4996-459 |

MOORE MEMORIAL PARK PEDESTRIAN BRIDGE

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

Moore Memorial Park is 90 acres; 50 acres are located east of Squaw Creek and 40 acres are west of the creek. The 50-acre parcel was developed into a community park in 1991. The 40-acre parcel has been leased to Iowa State as an agricultural research plot for \$3,000 per year.

In response to community input to connect parks via hard surface trails, a pedestrian bridge will link these two parcels of City property. The plan is to then have a trail from Moore Memorial Park along Scholl Road to Ontario Street. This improvement has become viable because ISU owns the land adjacent the City's 40-acre parcel. In the event ISU allows public access through its parcel, several miles of recreational trails would be linked together. Staff will meet with ISU officials to determine if public access will be allowed through this parcel of land in the future.

COMMENTS

- 2019/20: Engineering/design for a pedestrian bridge across Squaw Creek at Moore Memorial Park (\$35,000)
- 2020/21: Install a pedestrian bridge across Squaw Creek at Moore Memorial Park (\$350,000)

LOCATION

Moore Memorial Park, 3050 Northridge Parkway

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|----------------|---------|---------------|----------------|---------|---------|
| COST: | | | | | | |
| Engineering/Design | 35,000 | | 35,000 | | | |
| Construction | 350,000 | | | 350,000 | | |
| TOTAL | 385,000 | | 35,000 | 350,000 | | |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 385,000 | | 35,000 | 350,000 | | |
| TOTAL | 385,000 | | 35,000 | 350,000 | | |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

Parks and Recreation

ACCOUNT NO.

PLAYGROUND EQUIPMENT IMPROVEMENTS

PROJECT STATUS: Cost Increase

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

During the past 25 years, the City has replaced old play equipment throughout the park system. The life expectancy of play equipment is 20 – 25 years. Therefore, it is necessary to begin replacement of playground equipment that was installed at the beginning of this cycle.

COMMENTS

- 2020/21: Replace equipment adjacent to Shagbark Shelter in Inis Grove Park (\$100,000); Replace equipment in Lloyd Kurtz Park (\$75,000)
- 2021/22: Replace equipment in Country Gables Park (\$75,000); Replace equipment in Christopher Gartner Park (\$60,000)
- 2022/23: Install new equipment in Carr Park (\$60,000); Replace equipment in Stuart Smith Park (\$60,000) ; Install new equipment in North River Valley Park – Hawthorne Shelter (\$60,000)

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|----------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 490,000 | | | 175,000 | 135,000 | 180,000 |
| TOTAL | 490,000 | | | 175,000 | 135,000 | 180,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 490,000 | | | 175,000 | 135,000 | 180,000 |
| TOTAL | 490,000 | | | 175,000 | 135,000 | 180,000 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| Community Enrichment | | Parks and Recreation | | | | |

ADA HAYDEN HERITAGE PARK

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

By adding a wetland overlook to view wildlife, these portions of the park will be enhanced and able to be enjoyed more fully by park visitors.

COMMENTS

- 2021/22: Engineering/design a wetland overlook (\$10,000)
- 2022/23: Construct a wetland overlook (\$60,000)

LOCATION

Ada Hayden Heritage Park, 5205 Grand Avenue

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|---------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Engineering | 10,000 | | | | 10,000 | |
| Construction | 60,000 | | | | | 60,000 |
| TOTAL | 70,000 | | | | 10,000 | 60,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 70,000 | | | | 10,000 | 60,000 |
| TOTAL | 70,000 | | | | 10,000 | 60,000 |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

Parks and Recreation

ACCOUNT NO.

ROSE PRAIRIE PARK DEVELOPMENT

PROJECT STATUS: Delayed

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The Parks and Recreation Master Plan identifies neighborhood park service areas to cover a 1/4 to 1/2 mile radius. As the North Growth development occurs, this plan indicated a need for a neighborhood park to serve residents in this area. Standard amenities in neighborhood parks include a basketball pad with goals, a small shelter, a play structure and swings, and utilities. In addition, this park may require paths and sidewalks. The estimated costs for these improvements will total \$200,000.

COMMENTS

FY 2022/23: Develop the Rose Prairie Neighborhood Park (\$200,000)

LOCATION

Rose Prairie Development

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|-----------------------|----------------|---------|---------|---------|---------|----------------|
| COST: | | | | | | |
| Park Development | 200,000 | | | | | 200,000 |
| TOTAL | 200,000 | | | | | 200,000 |
| FINANCING: | | | | | | |
| Park Development Fund | 200,000 | | | | | 200,000 |
| TOTAL | 200,000 | | | | | 200,000 |

| PROGRAM - ACTIVITY | DEPARTMENT: | ACCOUNT NO. |
|----------------------|----------------------|-------------|
| Community Enrichment | Parks and Recreation | |

COMMUNITY ENRICHMENT - CEMETERY

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-----------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------|
| PROJECT: | | | | | | | |
| Municipal Cemetery Improvements | 100,000 | 25,000 | - | - | - | 75,000 | 143 |
| TOTAL PROJECT EXPENDITURES | 100,000 | 25,000 | - | - | - | 75,000 | |
| FUNDING SOURCES: | | | | | | | |
| City: | | | | | | | |
| Local Option Sales Tax | 100,000 | 25,000 | - | - | - | 75,000 | |
| TOTAL FUNDING SOURCES | 100,000 | 25,000 | - | - | - | 75,000 | |

AMES MUNICIPAL CEMETERY IMPROVEMENTS

PROJECT STATUS: Cost Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This program provides funding to enhance the public appearance at the Cemetery. A Scattering Garden and walking path is proposed for families that desire to scatter ashes in a serene setting located within the Cemetery. The Funeral Pavilion will give people a place to conduct a ceremony in the cemetery when weather conditions make it difficult to get to the grave site.

COMMENTS

2018/19 Scattering Garden (\$25,000)
2022/23 Funeral Pavilion (\$75,000)

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|----------------------|----------------|--------------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 100,000 | 25,000 | | | | 75,000 |
| TOTAL | 100,000 | 25,000 | | | | 75,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 100,000 | 25,000 | | | | 75,000 |
| TOTAL | 100,000 | 25,000 | | | | 75,000 |
| PROGRAM - ACTIVITY: | | | | | | |
| Community Enrichment | | | | | | |
| | | DEPARTMENT: | | ACCOUNT NO. | | |
| | | Parks and Recreation | | 030-5027-459 | | |

NEIGHBORHOOD IMPROVEMENT PROGRAM

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

The Neighborhood Improvement Program was originally designed to enhance the appearance of City neighborhoods with the addition of permanent physical improvements and to promote a greater sense of community through resident participation in neighborhood projects. The program focused solely on providing City grants to help residents accomplish those projects that they have identified as top priorities for their neighborhoods. Competitive proposals are solicited from neighborhood groups and are rated by a Review Panel, which consists of City staff and citizens, according to the following criteria approved by the City Council: public impact, neighborhood participation, safety, environment, housing, and public space. Neighborhood residents are expected to provide a local match to these grants on a dollar-for-dollar basis in the form of labor, materials, and/or cash.

Since the program was initiated in 1996/97, 123 neighborhood projects have been funded by the City, totaling \$362,900.61. Projects have included cul-de-sac, right-of-way and median landscaping; playground construction and/or restoration; alleyway beautification; street trees; pond renovation; installation of rain gardens, historic house plaques and medallions; prairie restoration; construction of a neighborhood message center; construction of a shelter house in a neighborhood City park; park sidewalks; neighborhood basketball courts; landscaping of neighborhood entryways; installation of neighborhood barbecue grills; renovating "DZ Triangle;" Monarch butterfly habitat restoration, and neighborhood clean-up days.

With the implementation of the Neighborhood Liaison Program, the City is committed to creating great neighborhoods with a sense of community. To complement this initiative, eligibility for these funds has been expanded beyond the original intent of the Neighborhood Improvement Grant Program to include such projects as sub-area planning elements and other support programs for neighborhood associations. In addition, the application period is now open-ended with the requirement that the funds be expended one year from date of Council approval.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Construction | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |

PROGRAM - ACTIVITY:

Community Enrichment

DEPARTMENT:

City Manager's Office

ACCOUNT NO.

030-0420-459

DOWNTOWN FAÇADE IMPROVEMENT PROGRAM

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This project was introduced in 2001/02 to facilitate private improvements to the façades of the buildings in the Downtown area. For three years, the City did not receive any requests for these funds.

Downtown Design Guidelines were approved by the City Council in 2001 to ensure that financial assistance for façade improvements is consistent with the historical character of Downtown. In order to qualify for these funds, improvements must be made to at least one of the following exterior elements: upper façades, storefronts, transoms, display windows, kick plates, entrances, signs, or awnings/canopies. Beginning in FY 2011/12, the City Council expanded the program guidelines, and implemented a review and award period in spring each year. Additionally, to aid in comparing applications, the City Council also established a scoring process.

Under this program, the City provides up to \$15,000 in grant funds to be matched dollar for dollar. In addition, a \$1,000 grant is available to subsidize the cost of an architect. Through September 2017, the program has awarded 41 grants to downtown businesses and has expensed a total of \$479,936 on 36 projects. FY 2018/19 will begin with a new \$50,000 allocation.

COMMENTS

This program continues to support the City Council's previous goals for the commercial revitalization of the Downtown. As interest in this program continues, funding can be expanded or City Council may consider appropriating funds to priority projects.

LOCATION

Downtown Ames

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------------|--------------------|----------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Incentives (Loans or Grants) | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| PROGRAM - ACTIVITY: | DEPARTMENT: | | ACCOUNT NO. | | | |
| Community Enrichment | Planning & Housing | | 030-1030-459 | | | |

CAMPUSTOWN FAÇADE IMPROVEMENT PROGRAM

PROJECT STATUS: No Change

DESCRIPTION/JUSTIFICATION

This purpose of the Campustown Facade Improvement Program is to improve the Campustown commercial district by providing financial incentives to enhance the appearance and use of existing buildings with commercial uses. The program design is to encourage and maintain the eclectic culture and 'uniqueness' of Campustown, to increase safety, security, and investments by property and business owners and to add to the vitality of Campustown.

The Campustown Facade Improvement Program seeks to encourage the creation of a place that is walkable, transparent, eclectic, sustainable, social, and historic. Beginning in FY 2014/15, the first step in the process was to hire a consultant to assist the City in the development of a "Vision Statement," prepare an "Idea Book," review design ideas and guidelines, provide assistance to applicants wanting to apply for the program, determine costs and feasibility, and conduct workshops and working meetings with applicants and City staff. The second step was to implement two pilot projects to include construction and evaluation.

In 2015/16, \$32,000 was awarded for two pilot projects. Under this program, the City would provide up to \$15,000 in grant funds to be matched dollar for dollar. In addition, a \$1,000 grant is available to subsidize the cost of an architect. Through September 2017, the program has awarded grants to five Campustown businesses and has expensed a total of \$64,000 on four projects. FY 2018/19 will begin with a new \$50,000 allocation.

COMMENTS

This program will address the City Council's goal to revitalize of the Campustown. As interest in this program continues, funding can be expanded or City Council may consider appropriating funds to priority projects.

LOCATION

Campustown Ames

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Incentives (Loans or Grants) | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| TOTAL | 250,000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |

| PROGRAM - ACTIVITY: | DEPARTMENT: | ACCOUNT NO. |
|----------------------------|--------------------|--------------------|
| Community Enrichment | Planning & Housing | 030-1031-459 |

GENERAL GOVERNMENT - FACILITIES

| PROJECT/FUNDING SOURCE | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 | Page |
|-----------------------------------|----------------|---------------|---------------|----------------|---------------|---------------|------|
| PROJECT: | | | | | | | |
| City Hall Improvements | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 | 150 |
| TOTAL PROJECT EXPENDITURES | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 | |
| FUNDING SOURCE: | | | | | | | |
| City: | | | | | | | |
| Local Option Sales Tax | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 | |
| TOTAL FUNDING SOURCES | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 | |

CITY HALL IMPROVEMENTS

PROJECT STATUS: No Change

City of Ames, Iowa
Capital Improvements Plan

DESCRIPTION/JUSTIFICATION

This City Hall improvements program is focused on major maintenance or replacement of items for the building, Veterans Memorial, and parking lots on the west side of the building and across the street to the east.

City Hall’s mechanical, electrical, plumbing, sprinkler, and numerous other support systems were installed in 1990. Funds have been allocated per year for equipment or system failures that may occur and are beyond the funding levels in the City Hall operating budget.

Due to the 24/7 operations of the Police Department, the replacement of flooring in this area will reach the end of its useful life in the area that was part of the first remodel. Currently the area is carpet but multiple options will be explored to provide a long lasting and safe environment.

LOCATION

City Hall, 515 Clark Avenue

2020/21 Add \$50,000 for replacement of flooring in Police Area.

| | TOTAL | 2018/19 | 2019/20 | 2020/21 | 2021/22 | 2022/23 |
|----------------------------|----------------|--------------------|--------------------|----------------|----------------|----------------|
| COST: | | | | | | |
| Maintenance | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 |
| TOTAL | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 |
| FINANCING: | | | | | | |
| Local Option Sales Tax | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 |
| TOTAL | 300,000 | 50,000 | 50,000 | 100,000 | 50,000 | 50,000 |
| PROGRAM - ACTIVITY: | | DEPARTMENT: | ACCOUNT NO. | | | |
| General Government | | Facilities | 030-2930-419 | | | |