

Project Title	Agency Priority	Strategic Score	Funding Source	Agency Request			Governor's Rec	Governor's Planning Estimates	
				2004	2006	2008	2004	2006	2008
Rural Finance Authority Loan Participation	1	440	GO/UF	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000
Joint Plant Pathology Research Facility	2	270	GO	245	4,000	0	0	0	0
Agriculture Water Management Research Partnership	3	260	GO	1,139	561	0	570	0	0

Project Total	\$19,384	\$22,561	\$18,000	\$18,570	\$18,000	\$18,000
General Obligation Bonding (GO)	\$1,384	\$4,561	\$0	\$570	\$0	\$0
User Finance Bonding (UF)	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000	\$18,000

<b>Funding Sources:</b>	GF = General Fund	THF = Trunk Highway Fund	OTH = Other Funding Sources
	GO = General Obligation Bonds	THB = Trunk Highway Fund Bonding	UF = User Financed Bonding

### Agency Profile At A Glance

Why is agriculture vital to 21<sup>st</sup> century Minnesota? In addition to providing us with the world's most abundant and wholesome food supply, agriculture remains a cornerstone industry.

- ◆ Agriculture and its related industries account for nearly 20% of all Minnesota jobs.
- ◆ Two-thirds of all agricultural jobs are off-farm, in processing, distribution, supply, and service sectors.
- ◆ Every ag production job helps create another three jobs in other sectors;
- ◆ The dairy sector alone employs more Minnesotans than Northwest Airlines, 3M and Target Corporation combined.
- ◆ Exports of farm products bring in more than \$2 billion to the state each year.
- ◆ Every dollar in agricultural and food export generates another \$2.5 in economic activities in other economic sectors.
- ◆ More than half of the state's total land area is farmland.

### Agency Purpose

The mission of the Minnesota Department of Agriculture (MDA) is to work toward a diverse agricultural industry that is profitable and environmentally sound; to protect public health and safety regarding food and agricultural products; and to ensure orderly commerce in agriculture and food products.

From the farm to your family, the MDA ensures that Minnesota agricultural products used in production or available for consumption meet or exceed regulatory standards. These standards are set by state and federal laws that ensure the quality of products and the safety of food. The MDA also helps sustain and enhance the economic and environmental conditions of the agricultural sector in a number of ways. Since Minnesota produces more food and agricultural products than its citizens can consume, it must focus on marketing strategies that encourage exports to other states and countries. The MDA plays a lead role in helping the state's farmers and agricultural businesses build trade relationships with potential customers in other states and countries.

### Core Functions

The Protection Services Program provides regulatory oversight for agricultural products from the farm to retail stores. Many of these regulatory activities touch consumers' everyday lives. For example, the MDA protects consumers by inspecting food and dairy products, dairy farms, food processing facilities, grocery stores, and even food stands at the Minnesota State Fair. The MDA also regulates, inspects and analyzes animal feed, fertilizers and pesticides; it performs laboratory analysis on food products; and inspects grain and fresh produce moving into or out of Minnesota. The MDA helps protect the environment by monitoring surface and ground water for possible contaminants and by preventing the establishment of destructive tree and plant pests such as gypsy moth and Japanese beetle.

The Agricultural Marketing and Development Services Program helps sustain and enhance farmers' economic and environmental well-being through a number of services. The program develops and tests new farming practices that help minimize environmental impacts, educates farmers about these practices and encourages their implementation with education and technical assistance. It gives farmers updated information on plant pests during the growing season, helping them determine how and when to take action to protect their crops. The program also helps the state's agricultural community expand existing markets and develop new markets for Minnesota agricultural products. This includes developing international trade opportunities, offering educational programs on risk management, and encouraging value-added activities.

The Ethanol Producer Payment Program was authorized by the 1986 legislature. Currently 13 ethanol plants located through Minnesota receive producer payments. Each plant is eligible for payment of 20 cents per gallon of ethanol produced up to a maximum of \$3 million per year. M.S. 41A.09 contains the formula for producer payments. Each plant submits a quarterly report of gallons of ethanol produced. These reports are independently audited, and payments are made in accordance with statute.

The Administration and Financial Assistance Program provides leadership and administrative support to the agency, gathers important statistical information for the farm sector, and offers financial assistance to producers. This program provides overall leadership and coordination of agency efforts.

It coordinates communication with internal and external stakeholders including farmers, media, and other government bodies. It provides fiscal oversight to the department and provides important information on employment and benefits to employees. Producers use the statistical information gathered by our joint federal/state division of Ag Statistics to learn about important trends in their industry. The publications provide valuable information on crop conditions, production statistics, and forwards information on Minnesota agriculture to the U.S. Department of Agriculture (USDA). Producers and rural lenders benefit from the Rural Finance Authority loan programs. These loans help beginning farmers get started and they help producers upgrade existing production facilities.

### Operations

The department's main office is at 90 West Plato Boulevard, in St. Paul. However, since most of the regulatory and promotion services we provide require face to face contact with our farmers, producers, and consumers, almost half of our staff is scattered throughout the state in the areas they serve. Our inspectors are responsible for on-site inspections of facilities. These inspections ensure that the agricultural products and processes meet applicable standards for quality and integrity. For example, the fertilizer we use on our lawns must meet quality standards just as the fertilizer used in production agriculture. The pesticides we use in our homes are regulated just as those used by farmers. Milk is inspected at many points, from the farm to the milk plant to our supermarkets. Sustainable agricultural practices, such as biological control of weeds and pests, benefit not only the farmers but the shoppers in the urban shopping malls.

In addition to ensuring the safety and integrity of products, the department helps farmers and agribusinesses market those products in an increasingly competitive global marketplace. The MDA encourages value-added activities and the development of new domestic markets for existing agricultural products, and it works with other state offices to stimulate international exports of Minnesota-grown agricultural products. This is done to help keep Minnesota's agricultural community competitive in the world marketplace.

### Budget

MDA budget comes from multiple funds. These funds include general funds for operations and for ethanol producer payments, dedicated revenue funds, federal funds, and loan funds.

Over half of all funds expended are appropriated from the general fund. Of this amount over half is for ethanol producer payments. The balance supports all of our operations programs.

Our regulatory programs collect various fees that defray the cost of services to the general fund. These fees are deposited to the general fund as non-dedicated revenues.

Our dedicated funds (Special Revenue and Ag Fund) provide operational costs for various programs. These funds recover 100% of the cost of services provided.

MDA continues to apply for federal funds that complement our area of programmatic responsibility.

MDA also administers several agricultural loan programs. Funding for these loan programs is provided through a variety of sources that include the user financed bonds.

### Contact

For additional policy information, please contact Amy Sobieski at (651) 296-2880 or Paul Strandberg at (651) 284-3706, for more budget details, please contact Becky Leschner at (651) 215-5770.

MDA's website is [www.mda.state.mn.us](http://www.mda.state.mn.us) Our web site contains additional information on each of the divisions in the agency, licensing information, food recalls information, and more.

For information on how this agency measures whether it is meeting its statewide goals, please refer to [www.departmentresults.state.mn.us](http://www.departmentresults.state.mn.us)

**At A Glance: Agency Long-Range Strategic Goals**

- ◆ To develop the state's agricultural resources.
- ◆ To improve water quality and profitability of agriculture.
- ◆ To offer a readily available source of safe food and agricultural products.

**Trends, Policies and Other Issues Affecting the Demand for Services, Facilities, or Capital Programs**

Employing one of every seven Minnesota workers and contributing nearly one fifth of Minnesota's total economic activity, Minnesota agriculture is dynamic and diverse. With the state's farm economy subject to the whims of international market forces and changing patterns of commerce, the Minnesota Department of Agriculture (MDA) must frequently review and update the services it provides. These factors require MDA programs to be flexible and responsive to stakeholders' needs.

Some of the significant issues at hand include:

*Maintaining Existing Farms, Processing Industries and Support Businesses*

⇒ Minnesota continues to see changes to the agricultural landscape. The number of dairy farms has dropped from 46,000 in 1970 to about 6,200 today. Producers of other commodities also face heavy financial pressure from international competition and highly variable commodity prices. It is important to provide Minnesota's farmers with the technical support and information necessary to manage their operations in a way that allows them to meet their customers' needs as well as own future needs.

*Environmental and Food Safety Regulation/Protection*

⇒ An increasing public focus on the real and perceived environmental impacts of agricultural activities will place more emphasis on environmental monitoring, compliance and remediation. At the same time, the heightened awareness of the potential for agro-terrorism means more attention is being paid to the safety of the state's food supply. All agriculture activities will be affected, ranging from the production of

inputs through production agriculture to processing and final consumption of agricultural products.

*Scientific and Technological Development*

⇒ The development and adoption of new technologies continues to be a change factor in agriculture. New and emerging technologies in agricultural chemical application equipment and food production and processing (biotechnology, irradiated food, reconstituted milk, etc.) will be proposed for adoption as a means to maintain economic competitiveness and enhance the safety of the environment and our food supply. Another area of emerging technology lies in the conversion of agricultural commodities into commercial and industrial products such as biodiesel. Biotechnology will impact production agriculture directly.

*Aging Drainage Infrastructure*

⇒ Much of the drainage infrastructure will undergo major rehabilitation or replacement in the next two decades. An opportunity exists to provide scientific and technical guidance in a manner that balances the needs of production agriculture with expectations for environmental protection.

*Demographic and Economic Trends*

⇒ Population growth worldwide and long-term economic expansions are expected to increase demand for U.S. agricultural products. Our agriculture and food industries represent 18% of Minnesota's total economic activities and generate jobs for about 15% of the Minnesota workforce. Minnesota ranked 6th in the nation, with \$2.3 billion in agricultural exports in 2002.

*Increasing International Competition*

⇒ With the emergence of Brazil and other countries as major exporters of agricultural commodities such as soybeans and corn, the United States faces more competition for global export markets. This competition will have profound effects on the domestic farm economy for decades to come.

*Plant Pests and Diseases*

⇒ Plant pests and diseases cause production losses while increasing production costs of producers. This decreases farm profitability for

individual producers while affecting the economy by decreasing the amount of product available for processing into higher value products, now the predominant component of international trade.

#### *Water Quality*

⇒ Current efforts to restore impaired waters will lead to Total Maximum Daily Loads (TMDLs) that impact agricultural productivity and profitability unless practices are developed to better harmonize agricultural production and water quality.

#### **Provide a Self-Assessment of the Condition, Suitability, and Functionality of Present Facilities, Capital Projects, or Assets**

##### *Rural Finance Authority Loan Participants*

⇒ The Rural Finance Authority (RFA) was established in 1986, under the authority of Article XI, Section 5, Clause (h) of the Minnesota Constitution, to institute a program under which state bonds are issued and proceeds are appropriated to develop the state's agricultural resources. The 1986 Minnesota Legislature authorized the sale of \$50 million in general obligation bonds to fund the initiative. The program received an additional \$41 million bond authorization from the 1996 Minnesota Legislature, \$20 million in the 2000, and an additional \$15 million in 2002.

##### *Joint Plant Pathology Research Facility*

⇒ The department entered into a partnership with the University of Minnesota (U of M) to address biological control of insects that threaten production agriculture and other natural resources with the construction and commissioning of the existing containment facility. The facility has been completed with the exception of one growth chamber and the operating system can be utilized to support a complementary plant pathology research center. While the existing containment facility studies insect management through biological control, the proposed plant pathology facility will study ways to control or mitigate plant pathogens, which can only be studied under quarantine conditions, prior to their arrival into Minnesota. A recent change in U.S. Department of Agriculture (USDA) policy now allows the co-location of these facilities as long as approved safeguards are in place to prevent cross-

contamination. The only existing facilities capable of conducting this research are in Maryland, Hawaii, and California.

##### *Agriculture Water Management Research Partnership*

⇒ The department entered into this partnership with the U of M several years ago following consultations with agencies, producers, and researchers on the impact agricultural drainage has on flooding and non-point source pollution. The department actively engaged producers, scientists, conservationists, and regulators through formal means including the Minnesota River Agriculture Team, Drainage Advisory Task Force, and strategic planning efforts conducted in 1995 and 1999. Subsequently, some general funds and federal grants were obtained to initiate drainage research and demonstration projects at Waseca and Lamberton.

#### **Agency Process Used to Arrive at These Capital Requests**

For the internal agency review process, divisions utilized the following criteria to suggest projects:

- ◆ farmers are stewards of the land;
- ◆ administer financial assistance programs that provide affordable financing to farms and small agri-businesses; and
- ◆ ensure a safe and wholesome food supply through inspection and regulatory programs that monitor the production, processing and sale of food products.

The executive team also applied the following criteria to the projects:

- ◆ MDA's ability to provide analytical services that ensure the safety of agricultural and food products;
- ◆ availability of affordable financing to farmers and small agri-businesses;
- ◆ emerging biotechnologies and their impact on Minnesota agriculture;
- ◆ threats to agricultural productivity and profitability; and
- ◆ environmental challenges posed by impaired waters.

Based on the above criteria, MDA recommends approval of the following projects for the 2004 Capital Budget:

*Rural Finance Authority (RFA) Loan Participations.*

⇒ The mission of the RFA (M.S. Chap. 41B) is accomplished by purchasing participations in farm real estate loans originated with agricultural lenders. The RFA provides below market interest rate financing to eligible farmers for purchasing farm real estate, restructure current debt, making improvements to the farm, expanding livestock production, and purchasing stock in farmer-owned cooperatives. The RFA cooperates with 420 participating agricultural lenders. Repayment of these loans does meet the debt service obligations of the state bonds sold to provide needed loan funds.

*Joint Plant Pathology Research Facility.*

⇒ This project is to: a) purchase and install a plant growth chamber to complete equipping the existing biological control containment facility operated jointly by the department and the U of M; and b) to complete the predesign phase to expand the current biological control containment facility to include a plant pathology wing. The plant pathology wing will allow research on quarantined pathogens that are potential threats to Minnesota crops and forests as well as potential biological control agents. The expansion of the facility would give Minnesota the capability to study potentially damaging quarantined plant pathogens of crops and forest species prior to their detection and damage in Minnesota.

*Agricultural Water Management Research Partnership.*

⇒ This project is to expand the Agricultural Water Management Research Partnership to accelerate efforts to protect both surface and ground waters impacted by agricultural practices due to surface and subsurface drainage. The requests would accelerate efforts at four outreach stations: Crookston, Morris, Lamberton, and Waseca. Each of these stations serve landscapes that vary significantly from one another in rainfall, drainage patterns, and production systems, and need water management Best Management Practices tailored to their unique needs.

**Major Capital Projects Authorized in 2002 and 2003**

MDA received capital bonded projects in 2002 for the Rural Finance Participation Loans in the amount of \$15 million.

## Rural Finance Authority Loan Participation

**2004 STATE APPROPRIATION REQUEST:** \$18,000,000

**AGENCY PROJECT PRIORITY:** 1 of 3

**PROJECT LOCATION:** Farms are located throughout Minnesota

#### Project At A Glance

- ◆ The Minnesota Department of Agriculture requests \$18 million for Rural Finance Authority (RFA) loans to develop the state's agricultural resources. The loans would provide affordable financing to farmers and small agri-businesses.
- ◆ Repayment of these loans does meet the debt service obligations of the state bonds sold to provide needed loan funds.
- ◆ This request is 100% user-financed.

#### Project Description

The purpose of the RFA programs and of the bonds issued to finance these programs is to purchase participation interests in loans. The loans will be made available by agricultural lenders to farmers on terms and conditions not available from other credit sources. The RFA will purchase a 45% interest in the lender's first mortgage up to \$125,000 under the Beginning Farmer, the Seller Assisted and the Agricultural Improvement Loan programs. Participation in the Livestock Expansion Loan Program may be up to \$250,000, and up to \$150,000 in the Restructured Loan Program. This participation interest is set up on a reduced interest rate to improve the farmer's cash flow and to share the loan risk with the lender. The state's participation typically reduces the overall interest rate by 1% or 2%. The RFA and lender become partners, and each owns a share of the mortgage.

#### Impact on Agency Operating Budgets (Facilities Notes)

The additional bond authorization will not change the staffing or administrative costs of the program. The RFA loan activity is user financed. Proceeds from the sale of the state general obligation bonds are used to purchase a portion of farm real estate loans. The principal and interest receipts from the loan participations are deposited into a reserve account for redemption of bonds issued under the RFA loan programs. Each December 1 these funds are transferred from the reserve account to the Debt Service Fund. Since FY 1988 the RFA has repaid \$73 million for bond redemption and interest payments.

#### Previous Appropriations for this Project

RFA was established in 1986 to administer a program under which state bond proceeds are appropriated to develop the state's agricultural resources. The RFA accomplishes this by extending credit on real estate security. The initial program was designed to help lenders and borrowers restructure under secured farm real estate loans. The initiative was expanded in 1987 to assist beginning farmers with purchasing their own farms. The RFA has since grown to include a variety of unique options, including the Beginning Farmer and Seller Assisted Programs; the Agricultural Improvement Loan Program; the Livestock Expansion Loan Program, and the Restructured Loan Program.

The 1986 Minnesota Legislature authorized the sale of \$50 million in general obligation bonds to fund the initiative. Additional general obligation bonds authorized were \$41 million in 1996, \$20 million in 2000, and \$15 million in 2002.

#### Other Considerations

Since its inception the RFA has enabled more than 1,775 Minnesota farmers to purchase farms, improve them, or add efficient up-to-date livestock facilities. As of 5-31-03, the RFA has purchased more than \$104 million in loan participations. The additional authorization will allow the RFA to continue offering credit to farmers on favorable terms and conditions, and promote the public welfare by assuring the viability of farm operations.

## Rural Finance Authority Loan Participation

The request for \$18 million is based on loan participation experience over the past six fiscal years. Loan disbursements averaged \$8.3 million annually during the past six years, with an annual range of \$6.3 to \$9.6 million.

**Project Contact Person**

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**Governor's Recommendations**

The Governor recommends general obligation bonding of \$18 million for this project. Also included are budget planning estimates of \$18 million in 2006 and \$18 million in 2008.

<b>TOTAL PROJECT COSTS All Years and Funding Sources</b>	<b>Prior Years</b>	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
1. Property Acquisition	0	0	0	0	0
2. Predesign Fees	0	0	0	0	0
3. Design Fees	0	0	0	0	0
4. Project Management	0	0	0	0	0
5. Construction Costs	0	0	0	0	0
6. One Percent for Art	0	0	0	0	0
7. Relocation Expenses	0	0	0	0	0
8. Occupancy	126,000	18,000	18,000	18,000	180,000
9. Inflation	0	0	0	0	0
<b>TOTAL</b>	<b>126,000</b>	<b>18,000</b>	<b>18,000</b>	<b>18,000</b>	<b>180,000</b>

<b>CAPITAL FUNDING SOURCES</b>	<b>Prior Years</b>	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
State Funds :					
G.O. Bonds/RFA	126,000	18,000	18,000	18,000	180,000
<b>State Funds Subtotal</b>	<b>126,000</b>	<b>18,000</b>	<b>18,000</b>	<b>18,000</b>	<b>180,000</b>
Agency Operating Budget Funds	0	0	0	0	0
Federal Funds	0	0	0	0	0
Local Government Funds	0	0	0	0	0
Private Funds	0	0	0	0	0
Other	0	0	0	0	0
<b>TOTAL</b>	<b>126,000</b>	<b>18,000</b>	<b>18,000</b>	<b>18,000</b>	<b>180,000</b>

<b>CHANGES IN STATE OPERATING COSTS</b>	<b>Changes in State Operating Costs (Without Inflation)</b>			
	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
Compensation -- Program and Building Operation	0	0	0	0
Other Program Related Expenses	0	0	0	0
Building Operating Expenses	0	0	0	0
Building Repair and Replacement Expenses	0	0	0	0
State-Owned Lease Expenses	0	0	0	0
Nonstate-Owned Lease Expenses	0	0	0	0
Expenditure Subtotal	0	0	0	0
Revenue Offsets	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
Change in F.T.E. Personnel	0.0	0.0	0.0	0.0

<b>SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS</b> (for bond-financed projects)	<b>Amount</b>	<b>Percent of Total</b>
General Fund	0	0.0%
User Financing	18000	100.0%

<b>STATUTORY AND OTHER REQUIREMENTS</b>	
Project applicants should be aware that the following requirements will apply to their projects after adoption of the bonding bill.	
No	MS 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)
No	MS 16B.335 (3): Predesign Review Required (by Administration Dept)
No	MS 16B.335 and MS 16B.325 (4): Energy Conservation Requirements
No	MS 16B.335 (5): Information Technology Review (by Office of Technology)
No	MS 16A.695: Public Ownership Required
No	MS 16A.695 (2): Use Agreement Required
No	MS 16A.695 (4): Program Funding Review Required (by granting agency)
No	Matching Funds Required (as per agency request)
Yes	MS 16A.642: Project Cancellation in 2009

**Rural Finance Authority Loan Participation**

<b>STATEWIDE STRATEGIC SCORE</b>		
<b>Criteria</b>	<b>Values</b>	<b>Points</b>
Critical Life Safety Emergency - Existing Hazards	0/700	0
Critical Legal Liability - Existing Liability	0/700	0
Prior Binding Commitment	0/700	0
Strategic Linkage - Agency Six Year Plan	0/40/80/120	120
Safety/Code Concerns	0/35/70/105	0
Customer Service/Statewide Significance	0/35/70/105	70
Agency Priority	0/25/50/75/100	100
User and Non-State Financing	0-100	100
State Asset Management	0/20/40/60	0
State Operating Savings or Operating Efficiencies	0/20/40/60	0
Contained in State Six-Year Planning Estimates	0/25/50	50
<b>Total</b>	700 Maximum	440

## Joint Plant Pathology Research Facility

**2004 STATE APPROPRIATION REQUEST:** \$245,000

**AGENCY PROJECT PRIORITY:** 2 of 3

**PROJECT LOCATION:** University of Minnesota, St. Paul campus

#### Project At A Glance

- ◆ This request for \$85,000 is to complete the equipping of the existing Biological Control Containment Facility through the purchase and installation of a plant growth chamber. The facility is located on the University of Minnesota (U of M) St. Paul campus and operated jointly by the Minnesota Department of Agriculture (MDA) and the University. This installation would bring the existing facility into full operational status.
- ◆ The Plant Pathology Research Partnership (U of M and MDA) is also requesting \$160,000 to complete the predesign phase to add a plant pathology wing to the existing Biological Control Containment Facility headhouse. The expanded facility would share a common headhouse, and other operating infrastructure.
- ◆ Recent changes from U.S. Department of Agriculture Animal and Plant Health Inspection Service (USDA-APHIS) (federal licensing agency) now allow the addition of a plant pathology wing to the existing facility. The existing facility performs insect biological control research. The proposed new wing will conduct research on quarantined fungal, bacterial, viral and nematode plant pathogens of Minnesota crops and forests.

#### Project Description

The existing Level Three high security Biological Control Containment Facility located on the U of M St. Paul campus allows basic research on insects with potential as biological control agents and on the efficacy of agents to control pest insects and noxious weeds leading to their release as

pest control agents. This work facilitates and accelerates interagency efforts to respond to threats to Minnesota's crop and forest industries such as soybean aphid, European buckthorn, and leafy spurge.

The existing facility, consisting of 1,600 square feet of Level 3 containment space and 1,600 square feet of headhouse space, was approved and commissioned by the USDA and opened the summer of 2003. MDA and the University operate the facility, and MDA supervises the quarantine and screening functions. The U of M has lead responsibility for the research functions carried out within the facility. The facility is licensed by USDA to the MDA.

The existing facility contains two walk-in plant growth chambers which are currently in use (potential soybean aphid and garlic mustard biological control agents). The additional growth chamber will be built to environmental specifications that will allow work on biological control agents of woody perennials such as European buckthorn. The current chambers are not capable of providing the appropriate environmental conditions for buckthorn research. In addition to this, the Department of Natural Resources, U of M and MDA have jointly developed a list of other biological control research projects which will come on line as growth chambers become available.

The request for funds for the predesign phase of the proposed plant pathology research wing is the first step in a project that would add Level 3 biocontainment space to the existing headhouse. A plant pathology research facility will provide a contained environment for research on potential crop and forest pathogens not currently found in Minnesota that are under quarantine, and on management strategies for these pathogens prior to the detection of the pest, e.g. study soybean variety resistance to soybean rust and the biology of the pest before rust appears in Minnesota.

#### Impact on Agency Operating Budgets (Facilities Notes)

The purchase and installation of the third plant growth chamber would only slightly increase the electrical costs for the existing facility. It will not affect the number of personnel needed to operate the facility. It would increase the efficiency of operation and allow full utilization of the facility.

## Joint Plant Pathology Research Facility

The proposed facility will impact operating budgets of both the MDA and the U of M. While the facility is located on the U of M campus, MDA is responsible for providing the day-to-day management and supervision of the facility. There will be no increase in operating budgets during the predesign phase of the project. If construction is approved, beginning in FY 2007 operating funds of \$205,000 will be needed to cover costs of construction oversight, development of operating procedures and guidelines and preparation for licensing of the addition. With the completion of construction in FY 2008, the U of M and the MDA estimate annual operating costs at \$250,000 per year, which will be shared. This includes funding for the quarantine officer and agricultural technician, and maintenance and utilities.

**Previous Appropriations for this Project**

Laws of 2000, Chapter 492, Article 1, Section 2, Subd. 4b -- \$5.963 million. Funds appropriated to the U of M were reduced from the original request which included the third plant growth chamber that was not installed to address the decrease in the bonding appropriation. Space was designed for future purchase of the chamber.

**Other Considerations**

This request directly supports the agency's long range strategic goal to improve water quality and profitability of agriculture by continuing evaluation of biological control agents for agricultural pests and developing research facilities to address management of pests which affect crop productivity while increasing production costs.

Under M.S. 17.03, MDA is directed to work cooperatively with the U of M in ways beneficial to agriculture, which would include this research partnership. MDA is also directed by statute to work toward the development of Minnesota agriculture (M.S. 17.03, subd. 1), the sustainability of Minnesota agriculture (M.S. 17.114, subd 1), and the development of a state approach to the promotion and use of integrated pest management (M.S. 17.114, subd. 4). Minnesota executive agencies are directed to use integrated pest management as feasible in their land management activities (M.S. 18B.063).

The additional growth chamber will allow the existing facility to operate at design capacity, maximizing the use of staff and other resources. The

environmental specifications of the new chamber will allow research on biological control agents of European buckthorn, an invasive woody perennial weed which plagues both public and private land managers as well as serving as an over wintering hosts for the soybean aphid. A biological control agent would reduce eradication costs and habitat for soybean aphids.

The Plant Pathology Research addition will allow several departments within the U of M, the MDA, and other state agencies to fulfill their missions. The addition will allow the systematic, strategic, and coordinated screening, research, and field development of management strategies, including biological control agents, to control plant pathogens with a high probability of being introduced into Minnesota crops and forests and causing economic losses and increased cost of production.

This proposed facility expansion provides the following:

- ⇒ The capability to study potentially damaging plant pathogens of crop and forest species prior to their arrival and damage, in Minnesota.
- ⇒ Research on management strategies, including biological control, for the control of plant pathogens in advance of their introduction.
- ⇒ The opportunity for research faculty in several disciplines to engage in basic plant pathology research on campus.
- ⇒ The addressing of producer, nursery and forestry industry, and federal/state/local land management agency concerns about future economic losses and environmental damage caused by the introduction of fungal, bacterial, viral and nematode plant pests.

Minnesota is severely hampered by lack of timely and cost effective access to research and quarantine facilities for research on plant pathogens. Currently, Minnesota researchers must depend on availability of space at other facilities located in California, Hawaii or Maryland. Since quarantined pests can only be studied in licensed biocontainment facilities, U of M researchers have been unable to efficiently and economically prepare to manage pests prior to their introduction into Minnesota. A Minnesota facility will permit research on plant pathogens and those pests of greatest concern to our region.

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**Governor's Recommendations**

The Governor does not recommend capital funds for this project.

<b>TOTAL PROJECT COSTS All Years and Funding Sources</b>	<b>Prior Years</b>	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
1. Property Acquisition	0	0	0	0	0
2. Predesign Fees	0	160	0	0	160
3. Design Fees	0	0	0	0	0
4. Project Management	0	0	0	0	0
5. Construction Costs	5,963	85	3,960	0	10,008
6. One Percent for Art	0	0	40	0	40
7. Relocation Expenses	0	0	0	0	0
8. Occupancy	0	0	0	0	0
9. Inflation	0	0	0	0	0
<b>TOTAL</b>	<b>5,963</b>	<b>245</b>	<b>4,000</b>	<b>0</b>	<b>10,208</b>

<b>CAPITAL FUNDING SOURCES</b>	<b>Prior Years</b>	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
State Funds :					
G.O Bonds/State Bldgs	5,963	245	4,000	0	10,208
<b>State Funds Subtotal</b>	<b>5,963</b>	<b>245</b>	<b>4,000</b>	<b>0</b>	<b>10,208</b>
Agency Operating Budget Funds	0	0	0	0	0
Federal Funds	0	0	0	0	0
Local Government Funds	0	0	0	0	0
Private Funds	0	0	0	0	0
Other	0	0	0	0	0
<b>TOTAL</b>	<b>5,963</b>	<b>245</b>	<b>4,000</b>	<b>0</b>	<b>10,208</b>

<b>CHANGES IN STATE OPERATING COSTS</b>	<b>Changes in State Operating Costs (Without Inflation)</b>			
	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
Compensation -- Program and Building Operation	0	120	240	360
Other Program Related Expenses	0	35	70	105
Building Operating Expenses	0	20	130	150
Building Repair and Replacement Expenses	0	30	60	90
State-Owned Lease Expenses	0	0	0	0
Nonstate-Owned Lease Expenses	0	0	0	0
Expenditure Subtotal	0	205	500	705
Revenue Offsets	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>205</b>	<b>500</b>	<b>705</b>
Change in F.T.E. Personnel	0.0	0.0	0.0	0.0

<b>SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS</b> (for bond-financed projects)	<b>Amount</b>	<b>Percent of Total</b>
General Fund	245	100.0%
User Financing	0	0.0%

<b>STATUTORY AND OTHER REQUIREMENTS</b>	
Project applicants should be aware that the following requirements will apply to their projects after adoption of the bonding bill.	
No	MS 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)
Yes	MS 16B.335 (3): Predesign Review Required (by Administration Dept)
Yes	MS 16B.335 and MS 16B.325 (4): Energy Conservation Requirements
Yes	MS 16B.335 (5): Information Technology Review (by Office of Technology)
Yes	MS 16A.695: Public Ownership Required
Yes	MS 16A.695 (2): Use Agreement Required
Yes	MS 16A.695 (4): Program Funding Review Required (by granting agency)
No	Matching Funds Required (as per agency request)
Yes	MS 16A.642: Project Cancellation in 2009

## Joint Plant Pathology Research Facility

STATEWIDE STRATEGIC SCORE		
Criteria	Values	Points
Critical Life Safety Emergency - Existing Hazards	0/700	0
Critical Legal Liability - Existing Liability	0/700	0
Prior Binding Commitment	0/700	0
Strategic Linkage - Agency Six Year Plan	0/40/80/120	80
Safety/Code Concerns	0/35/70/105	0
Customer Service/Statewide Significance	0/35/70/105	70
Agency Priority	0/25/50/75/100	75
User and Non-State Financing	0-100	0
State Asset Management	0/20/40/60	20
State Operating Savings or Operating Efficiencies	0/20/40/60	0
Contained in State Six-Year Planning Estimates	0/25/50	25
<b>Total</b>	700 Maximum	270

## Agriculture Water Management Research Partnership

**2004 STATE APPROPRIATION REQUEST:** \$1,139,000

**AGENCY PROJECT PRIORITY:** 3 of 3

**PROJECT LOCATION:** U of M Research & Outreach Center-Crookston, U of M Research & Outreach Center-Lamberton, U of M Research & Outreach Center-Morris, U of M Research & Outreach Center-Waseca

#### Project At A Glance

- ◆ The Minnesota Department of Agriculture (MDA) requests \$1.7 million in total for state bonding to accelerate efforts to protect both surface and ground water from impairments by agricultural drainage practices. The request is for \$1.139 million in the 2004 legislative session and \$561,000 in the 2006 session.
- ◆ The MDA, in partnership with the University of Minnesota (U of M), has established an Agricultural Water Research Partnership with producers and industry representatives to design and evaluate technologies or practices that will protect or mitigate waters impaired by agricultural drainage.
- ◆ The Partnership will establish or expand projects at the Crookston, Morris, Lamberton, and Waseca Research and Outreach Centers, each of which represents unique topographical differences and potential solutions for impaired waters and incremental flood storage.
- ◆ The project includes design, construction and evaluation of technologies, systems and structures such as diversions, controlled drainage and vertical wetlands. They will also include new treatment basins, or dry storage basins adjacent to public drainage ditches, as well as retrofitting old aging infrastructure with diversion, treatment and storage functions.

#### Project Description

This project will establish infrastructure at four University of Minnesota Agricultural Research and Outreach Centers that will be used to conduct research and demonstration of various physical and equipment infrastructure improvements to the landscape for managing water quality and quantity in ways that protect or lessen water quality impairments. These infrastructure improvements will result in research and demonstration of benefits and costs of improving water quality or managing water quantity.

The centers will include projects to address:

- ⇒ Different types of water quality and quantity treatments, including bioremediation through wetlands, and other bioreactor mediums, as well as dryland storage of runoff from farmyards and farmfields.
- ⇒ Retaining more water in the field and making it available for crop growing needs during critical periods, thereby decreasing discharge to ditches and streams.
- ⇒ Incremental flood storage within or adjacent to existing public and private drainage systems.

#### Impact on Agency Operating Budgets (Facilities Notes)

The MDA is requesting a general fund appropriation of \$250,000 beginning with the FY 2006-07 biennium. This funding will be used for modifications, additional equipment or replacement, etc. as research objectives evolve. This request does not include ongoing administrative funding. To date, both the U of M and the MDA have administered these projects through existing budgets and temporary funding from outside sources. In the future, administrative funding may be needed.

#### Previous Appropriations for this Project

Laws of 2000, Chapter 488, Article 3, Section 5, appropriated \$300,000 of general fund dollars to the MDA to "establish an agricultural water quality and quantity management, research, demonstration, and education program. Of this appropriation \$150,000 is for projects at the Lamberton site and \$150,000 is for projects at the Waseca site."

## Agriculture Water Management Research Partnership

The funds were used to establish demonstrations on controlled drainage and different spacing and depth of drain tile, and directing agricultural drain tile outlets through a series of two wetlands to treat the quality of the water at the Waseca site. At the Lamberton site, two drainage ditches were constructed side-by-side to compare different in-ditch water quality treatments.

### Other Considerations

This request directly supports the MDA's long range strategic goal to improve water quality and profitability through the design, construction and evaluation of agricultural drainage systems. This proposal also responds to stakeholders recommendations that the MDA balance environmental protection with agricultural production so the farm economy can be sustained.

Most agricultural land water management systems were designed between 1900 and 1950. Though still functioning, are in need of general repair and maintenance and these systems are carrying a very heavy load, for which they were not originally designed. Changing land use and weather patterns and changing agricultural production systems are also impacting these drainage systems.

The aging infrastructure for agricultural land water management systems will need to undergo major redesign, rehabilitation or replacement in the next 10-20 years. The replacement of this infrastructure offers the opportunity to explore new designs that will address current issues of impaired waters, health threats from Nitrogen levels and incremental impacts on flooding. To retrofit an aging infrastructure, and establish options for new drainage systems, the following environmental criteria needs to be considered:

- ◆ benefits and costs (public and private);
- ◆ alternative storage and retention;
- ◆ anticipated flooding affects (positive and negative);
- ◆ effects on water quality and quantity;
- ◆ effects on fish and wildlife; and
- ◆ effects on shallow groundwater availability, and the overall affects.

Under M.S. 17.03 which defines the powers and duties of the commissioner, Subd. 1 specifically requires MDA to work cooperatively with the U of M on conducting agricultural research and to disseminate agricultural information. Under M.S. 17.114, the MDA is directed to work toward the sustainability of agriculture in this state. MDA is also directed to develop of best management practices.

Current emphasis on improving water quality in Minnesota indicates the timeliness of developing practices and technologies to mitigate the impacts on drainage. Periodic flooding problems also indicate the timeliness of evaluating current drainage systems to determine ways to improve water runoff, storage and retention on the land so as to not compound flooding problems and/or impair water quality. Since some Minnesota communities rely on surface water or shallow groundwater for drinking, reductions in nitrate loadings are also a public health concern.

### Lessons Learned from Waseca and Lamberton:

- ⇒ Preliminary results at Waseca (most developed program) show very good promise of addressing two key issues involving agricultural land drainage: speed and volume of discharges from ag drainage systems, and nitrogen loading in those discharges. Results to date for alternative drainage designs show reductions in volume of discharge of 30-40%, and similar nitrate loading reductions.
- ⇒ Due to variable weather, long-term research is essential to monitor change over time in drainage systems. Two or three years are insufficient to capture adequate data for modeling and program development.
- ⇒ Alternative drainage systems or practices show promise, but will require additional cost for producers during the installation or start-up phase. Practices having technical supporting data with proven benefits to water quality and shallow aquifer recharge may become eligible for United States Department of Agriculture (USDA) cost-share. These projects are key in providing the data to make practices cost-sharable.
- ⇒ Practices designed to work on research stations, need to be paired with a larger representative landscapes. The work on experiment stations provide opportunity to calibrate computer modeling at a small scale to confer with larger scale runoff data from within a similar landscape.

## Agriculture Water Management Research Partnership

⇒ The Research and Outreach Centers representing four distinct agroecoregions, with significant differences in rainfall and cropping systems, present these landscapes: Crookston, lake bottom soils and very flat landscape with overland flooding; Morris, prairie pothole lakes and wetlands region of the state; Lamberton, the Buffalo Ridge; Waseca, undulating soils and scattered wetlands complexes representative of south central Minnesota. Each station must address its unique environmental features related to its resources of concern.

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**Governor's Recommendations**

The Governor recommends general obligation bonding of \$570,000 for this project. This will provide funding for at least two of the proposed Research and Outreach Centers.

<b>TOTAL PROJECT COSTS All Years and Funding Sources</b>	<b>Prior Years</b>	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
1. Property Acquisition	0	0	0	0	0
2. Predesign Fees	0	170	0	0	170
3. Design Fees	0	230	0	0	230
4. Project Management	0	0	0	0	0
5. Construction Costs	300	571	433	0	1,304
6. One Percent for Art	0	5	4	0	9
7. Relocation Expenses	0	0	0	0	0
8. Occupancy	0	163	124	0	287
9. Inflation	0	0	0	0	0
<b>TOTAL</b>	<b>300</b>	<b>1,139</b>	<b>561</b>	<b>0</b>	<b>2,000</b>

<b>CAPITAL FUNDING SOURCES</b>	<b>Prior Years</b>	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
State Funds :					
G.O Bonds/State Bldgs	0	1,139	561	0	1,700
General	300	0	0	0	300
<b>State Funds Subtotal</b>	<b>300</b>	<b>1,139</b>	<b>561</b>	<b>0</b>	<b>2,000</b>
Agency Operating Budget Funds	0	0	0	0	0
Federal Funds	0	0	0	0	0
Local Government Funds	0	0	0	0	0
Private Funds	0	0	0	0	0
Other	0	0	0	0	0
<b>TOTAL</b>	<b>300</b>	<b>1,139</b>	<b>561</b>	<b>0</b>	<b>2,000</b>

<b>CHANGES IN STATE OPERATING COSTS</b>	<b>Changes in State Operating Costs (Without Inflation)</b>			
	<b>FY 2004-05</b>	<b>FY 2006-07</b>	<b>FY 2008-09</b>	<b>TOTAL</b>
Compensation -- Program and Building Operation	0	0	0	0
Other Program Related Expenses	0	250	250	500
Building Operating Expenses	0	0	0	0
Building Repair and Replacement Expenses	0	0	0	0
State-Owned Lease Expenses	0	0	0	0
Nonstate-Owned Lease Expenses	0	0	0	0
Expenditure Subtotal	0	250	250	500
Revenue Offsets	0	0	0	0
<b>TOTAL</b>	<b>0</b>	<b>250</b>	<b>250</b>	<b>500</b>
Change in F.T.E. Personnel	0.0	0.0	0.0	0.0

<b>SOURCE OF FUNDS FOR DEBT SERVICE PAYMENTS</b> (for bond-financed projects)	<b>Amount</b>	<b>Percent of Total</b>
General Fund	1,139	100.0%
User Financing	0	0.0%

<b>STATUTORY AND OTHER REQUIREMENTS</b>	
Project applicants should be aware that the following requirements will apply to their projects after adoption of the bonding bill.	
No	MS 16B.335 (1a): Construction/Major Remodeling Review (by Legislature)
No	MS 16B.335 (3): Predesign Review Required (by Administration Dept)
No	MS 16B.335 and MS 16B.325 (4): Energy Conservation Requirements
No	MS 16B.335 (5): Information Technology Review (by Office of Technology)
Yes	MS 16A.695: Public Ownership Required
Yes	MS 16A.695 (2): Use Agreement Required
No	MS 16A.695 (4): Program Funding Review Required (by granting agency)
No	Matching Funds Required (as per agency request)
Yes	MS 16A.642: Project Cancellation in 2009

## Agriculture Water Management Research Partnership

STATEWIDE STRATEGIC SCORE		
Criteria	Values	Points
Critical Life Safety Emergency - Existing Hazards	0/700	0
Critical Legal Liability - Existing Liability	0/700	0
Prior Binding Commitment	0/700	0
Strategic Linkage - Agency Six Year Plan	0/40/80/120	120
Safety/Code Concerns	0/35/70/105	0
Customer Service/Statewide Significance	0/35/70/105	70
Agency Priority	0/25/50/75/100	50
User and Non-State Financing	0-100	0
State Asset Management	0/20/40/60	20
State Operating Savings or Operating Efficiencies	0/20/40/60	0
Contained in State Six-Year Planning Estimates	0/25/50	0
<b>Total</b>	700 Maximum	260