Lip Service: Iowa’s Inadequate Commitment to Clean Water

State water quality spending and the Nutrient Reduction Strategy

David Osterberg and Natalie Veldhouse

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The Iowa Policy Project

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EXECUTIVE SUMMARY

Lip Service: Iowa's Inadequate Commitment to Clean Water

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Policy makers need to acknowledge both the magnitude of the water quality problem in Iowa, and the role of nonpoint-source nutrient pollution. Financing has been inadequate. We pay lip service to our financial responsibility as a state and have underestimated what is required for success.

Here we address four questions: What has the state's spending commitment to water quality looked like over the past 15 years? How much state and federal spending goes to nutrient pollution reduction in Iowa? How much spending is needed to make meaningful progress in cleaning Iowa waters? How can the state raise adequate revenue to make an impact?

This paper pulls together diverse estimates of revenues. It takes data from the Iowa state budget, the Water Resources Coordinating Council evaluation of progress, projections for a trust fund authorized by a 2010 voter-approved constitutional amendment that committed the state to long term spending on outdoor recreation and water quality, and how much a tax on fertilizer used in the state would bring to the problem.

It combines these sources of spending with estimates of nutrient reduction spending needs from the Nutrient Reduction Strategy scientific study created by Iowa State University, the Department of Natural Resources and the Iowa Department of Agriculture and Land Stewardship, and a separate study by the Iowa Soybean Association. Up until now these two sets of figures have not been brought together so that public policy is given direction.

The findings documented throughout this report are summarized below:

- Since the implementation of the NRS, water quality general fund spending has dropped off and struggled to return to pre-recession levels.
- State and federal spending on nutrient reduction in the state of Iowa was more than half a billion dollars in the year 2017/2018.
- The 2018 act, the first bill signed by new Governor Kim Reynolds, did not greatly increase government funding for nutrient reduction in Iowa.
- The largest share of nutrient reduction spending in Iowa, reported in the WRCC progress report, has nothing to do with the NRS.
- The 2018 nutrient reduction spending bill pales in comparison to estimates of what is required to deal with the problem.
- Other sources are available to fund nonpoint nutrient reduction in Iowa such as funding the voter-approved trust fund and taxing ag fertilizer.

There is good evidence that nutrient pollution is getting no better. Still, state government responses are inadequate and lacking in vision.
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Introduction

Water quality matters. Improved public health, availability of recreation, and low water treatment costs all relate to good water quality. A state budget is a reflection of values and priorities. Is clean water truly an Iowa priority?

There is widespread public support for improving the quality of water in Iowa’s lakes, rivers and streams. That support includes a willingness to pay for better water, in the form of a sales tax increase earmarked in part for water quality.

The landscape of publicly funded water quality efforts in Iowa is highly complex. Funds from several state programs administered through multiple departments with dynamic commitments over the years blend with federal and combined programs. While recent increases in funding and creation of new strategies might seem to indicate progress, recent research shows the opposite: Iowa’s share of nutrient loading into the Mississippi and Missouri river watersheds actually increased between 2000 and 2016.

In this paper we review past and current trends in water quality funding and assess recent developments. We conclude that current funding commitments are insufficient to make meaningful progress, and therefore propose alternatives for generating revenue that could address Iowa’s water quality issues head on.

Part One: State water quality spending and the Nutrient Reduction Strategy

The Iowa Nutrient Reduction Strategy

The Iowa Nutrient Reduction Strategy (NRS) was implemented in 2013 to reduce nutrient pollution that creates a hypoxic dead zone in the Gulf of Mexico, threatening marine life and local economic development. For two years Iowa State University, the Iowa Department of Natural Resources (DNR) and the Iowa Department of Agriculture and Land Stewardship (IDALS) worked to create the NRS. The United States Environmental Protection Agency (EPA) provided the framework and an impetus for states to reduce nutrient loading into the Mississippi River basin. The EPA was forced to intervene since upstream states continue to cause a hypoxic or dead zone in the Gulf of Mexico.
The NRS strategy (written in 2012 but revised as recently as December 2017) estimated the cost of a 45 percent reduction in Nitrogen (N) and Phosphorus (P) pollution through mandatory changes for point sources and voluntary programs for nonpoint sources. Point sources discharge pollutants directly to waterways such as an outfall pipe at a wastewater treatment plant. Nonpoint sources are all other sources, mainly agricultural. Our analysis concentrates on spending to address nonpoint source pollution in Iowa, since farm fields dominate the Iowa landscape.

How the state of Iowa contributes to water quality spending

State spending on water quality efforts is mainly funded through the DNR and IDALS. The box below shows several state programs that contribute to improving water quality.

State-funded programs affecting water quality in Iowa

- **Conservation Reserve Enhancement Program (CREP)** — through IDALS, this federal-state-local partnership provides incentives for private landowners to construct or restore wetlands in targeted parts of Iowa, to remove nitrogen and other agricultural chemicals from Iowa waterways.
- **Conservation Reserve Program (CRP)** — through IDALS, this is primarily known as a federal program, but state dollars also support incentives for private landowners to reduce erosion, protect water quality and provide habitat through measures like tree and prairie planting, buffer strips and wetland restoration.
- **Watershed Protection Fund** — through IDALS, provides funding to address water quality problems with the goal of building local governments’ capacities to sponsor watershed protection and leverage federal and local dollars.
- **Soil Conservation Cost Share** — through IDALS, provides funding for permanent soil and water conservation practices and leverages private landowners’ dollars.
- **Agricultural Drainage Well Closure** — through IDALS, provides assistance to close high priority agricultural drainage wells and develop alternative drainage to surface streams.
- **Resource Enhancement and Protection** — through DNR and IDALS, provides funding for various purposes, but through a formula a little under 20 percent of the total goes to soil- and water-enhancing purposes.
- **Geographic Information Systems (GIS) for Watersheds** — through DNR, provides funding for the mapping and analysis of geospatial data related to watersheds. Included here although it may contain some federal funds.
- **Water quality monitoring** — through DNR, provides funding for water quality testing at lakes, rivers, streams and beaches across the state. The entire amount is included although some federal funds may be involved and some funds have been taken to support DNR staff.
- **Water Quality Protection Fund** — through DNR, provides funding for the administration of the federal Safe Drinking Water Act.
- **Water Protection Loan Program** — through IDALS, provides funding as low-interest loans to landowners interested in taking steps to improve water quality (Uses General Fund dollars).4
- **Watershed Improvement Review Board** — through IDALS, formerly awarded local watershed improvement grants and monitored the progress of those projects.
- **Water Quality Initiative** — through IDALS, implemented as part of the Nutrient Reduction Strategy, develops measurement tools, provides educational and outreach efforts, and promotes nutrient reduction practices.
- **Lake Restoration** — through DNR, improves Iowa’s lakes for clarity, sustainability, and impairment elimination.
- **Groundwater Protection Fund** — through DNR, prevents point and nonpoint source groundwater contamination.
- **Groundwater Monitoring** — through DNR, assesses Iowa’s groundwater quality and quantity.
- **Soil and Water Conservation Administration** — through IDALS, pays soil and water conservation programs and administration of Soil and Water Conservation Districts.

* For the purposes of this paper discussion of the State Revolving Fund can be found in part two of the report, due to the complexity of untangling federal and state contributions to Iowa water quality funding.
** Other programs, for instance, Iowa IHR also funds water quality efforts, however we are only looking at funding through state agencies.
Later in this report we will look at how funding from many sources mitigates nutrient pollution from nonpoint sources. However, there is more to assuring water quality than nutrient reduction. Soil is the biggest polluter to water bodies and controlling bacteria is an important health component. In this section of the report we try to list programs that — in addition to reducing nutrients — address drinking water protection, monitoring our waters so we know when we have problems, and enhancing habitat and recreation. While some of the programs listed reduce the cost to treat drinking water or in some way relate to treating human and industrial waste, point-source pollution and drinking water treatment are mostly excluded from the report.

**State water quality funding pre-NRS**

Iowa’s water quality funding listed in the table and graph below wavered in the years leading up to the implementation of the NRS. In 2018 dollars, spending for the 16 mainly state-funded programs increased from $35 million in FY06 to $46 million in FY09, but fell back to $30 million in FY12. This was due in large part to a sharp disinvestment in Iowa’s Soil Conservation Cost Share program caused by tax shortfalls that came with the Great Recession. The Lake Restoration program has also fluctuated through time.

For the five years leading up to the adoption of the NRS in 2013, the state’s commitment to water quality funding actually decreased in real (inflation adjusted) dollars. This is shown in the table and the graph below. In fiscal year 2012, water quality funding remained well below pre-recession funding levels.

**Table 1. Iowa’s commitment to water quality funding FY2004-2018**

*State water quality spending in thousands, adjusted for inflation*

| Year | IDALS | DNR | DRR/IDALS | IDALS | DRR | IDALS | DRR | IDALS | DNR | IDALS | DRR | IDALS | DNR | IDALS | DNR | IDALS | DNR | IDALS | DNR | IDALS | DNR | Total |
|------|-------|-----|-----------|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|-------|-----|
| FY04 | 644   | 2,578 | 1,933 | 251   | $2,876 | $7,069 | $3,480 | - | $3,809 | 644 | - | - | - | 5,654 | - | - | - | 28,658 |
| FY05 | 627   | 2,507 | 1,881 | 244   | $2,817 | $6,095 | $3,385 | 53 | $3,705 | 627 | - | - | - | 4,333 | - | - | - | 27,083 |
| FY06 | 806   | 2,425 | 1,819 | 236   | $2,772 | $6,669 | $3,274 | 50 | $3,583 | 608 | $6,262 | - | - | 4,190 | $2,945 | - | - | 34,580 |
| FY07 | 555   | 2,379 | 1,755 | 225   | $2,757 | $6,543 | $3,212 | 104 | $3,516 | 605 | $6,416 | - | - | $10,321 | 4,112 | - | - | 42,476 |
| FY08 | 1,699 | 1,722 | 1,722 | 224   | $3,656 | $8,006 | $2,928 | 111 | $3,303 | 574 | $6,308 | - | - | $9,673 | 3,968 | - | - | 44,214 |
| FY09 | 1,705 | 1,705 | 1,705 | 222   | $4,107 | $7,955 | $2,898 | 157 | $3,358 | 568 | $6,027 | - | - | $11,364 | 3,927 | - | - | 45,697 |
| FY10 | 1,686 | 1,686 | 1,686 | 219   | $4,061 | $7,969 | $2,867 | 184 | $3,322 | 564 | $9,004 | - | - | $3,865 | $1,897 | - | - | 35,930 |
| FY11 | 1,374 | 1,429 | 1,649 | 194   | $3,208 | $1,155 | $1,649 | 155 | $3,249 | 559 | $34 | - | - | $10,596 | $3,880 | $1,855 | $1,025 | 33,314 |
| FY12 | - | 1,069 | 1,069 | 208   | $2,565 | $6,734 | $962 | - | $3,159 | $534 | $20 | - | - | $5,635 | $3,694 | $1,903 | $2,128 | 29,791 |
| FY13 | $2,280 | $1,051 | $1,051 | $205 | $2,516 | $6,907 | $946 | - | $3,105 | $525 | $1,144 | $10,507 | $6,204 | $3,601 | $1,772 | $2,679 | - | $44,704 |
| FY14 | - | $1,037 | $1,037 | $202 | $3,301 | $6,897 | $930 | - | $3,065 | $519 | $135 | $2,499 | $8,913 | $5,564 | $1,750 | $2,645 | - | $36,512 |
| FY15 | - | $1,033 | $1,033 | $202 | $3,288 | $6,916 | $930 | - | $3,054 | $517 | $152 | $4,547 | $9,921 | $5,572 | $1,743 | $2,635 | - | $39,022 |
| FY16 | $1,981 | $1,032 | $1,032 | $201 | $3,288 | $6,965 | $929 | - | $3,049 | $516 | $150 | $4,540 | $9,005 | $5,566 | $1,741 | $2,766 | - | $41,629 |
| FY17 | $1,964 | $1,018 | $1,018 | $198 | $3,246 | $6,899 | $916 | - | $3,007 | $509 | $15 | $4,306 | $9,769 | $5,617 | $1,717 | $2,649 | - | $40,998 |
| FY18 | $1,875 | $1,000 | $1,000 | $196 | $3,097 | $8,325 | $500 | - | $2,955 | $500 | $22 | $5,375 | $9,600 | $4,506 | $1,967 | $3,800 | - | $42,967 |

*converted to 2018 dollars using average CPI for the fiscal year

**REAP is the Resource Enhancement and Protection Program
Finding 1: Since the implementation of the NRS, water quality general fund spending has dropped off and struggled to return to pre-recession levels.

Part Two: Folding in federal spending and measuring state nutrient reduction post-NRS

The Water Resources Coordinating Council (WRCC), the organization tasked with overseeing NRS progress, has sought to measure the amount of financial resources allocated to reducing nutrient pollution from the state of Iowa to the Mississippi River system and the Gulf of Mexico. IDALS, DNR and ISU began writing annual reports, which are presented to the WRCC on the program’s annual progress.

The second annual report for 2014-15 produced a table — data summarized in Table 2 — describing both state and federal resources dedicated to nutrient reduction. Included were some aspects of the state-initiated programs mentioned in Part One of this report. The additions include two federal programs: Section 319 Grant Program, which provides federal funds to the DNR and the Natural Resources Conservation Service of the United States Department of Agriculture (USDA), which provides technical services and funds for conservation practices to reduce nonpoint source pollution.
<table>
<thead>
<tr>
<th>Lead Agency/Org</th>
<th>Programs</th>
<th>Category</th>
<th>FY16 Funding</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Iowa Dept. of Natural Resources (DNR)</td>
<td>EPA Section 319, Lakes Restoration, Lands, Water Quality Monitoring</td>
<td>Human/Land/Water</td>
<td>$16,018,000</td>
<td>Summary of DNR-led programs and funding to develop, install, promote, and monitor various conservation practices in Iowa.</td>
</tr>
<tr>
<td>Iowa Dept. of Agriculture and Land Stewardship (IDALS)</td>
<td>Water Quality Initiative, Iowa Financial Incentives Pgm, Ag Drainage Well Closure, Watershed Protection Fund, Conservation Reserve Enhancement Pgm, Resource Enhancement and Protection Pgm, Integrated Farm and Livestock Mgmt Fund, Iowa Buffer Initiative</td>
<td>Land/Human/Water</td>
<td>$17,864,000</td>
<td>IDALS-led programs and funding for technical &amp; financial assistance, education, training, watershed projects, and monitoring. Funding includes other expenses related to technical assistance, administration of programs, equipment, supplies, other services, etc.</td>
</tr>
<tr>
<td>IDALS/DNR</td>
<td>Iowa State Revolving Fund (SRF) Local Water Protection Program Livestock Water Quality Program General Non-Point Project Program Sponsored Project Program Onsite Wastewater Program</td>
<td>Land</td>
<td>$35,700,000</td>
<td>SRF is a water, wastewater and water quality infrastructure low-interest loan program jointly managed by the Iowa DNR and Iowa Finance Authority. Under a contract with DNR, IDALS helps carry out nonpoint water quality programs under SRF, which has flexibility to target specific needs in Iowa. Programs finance manure management, soil conservation and stormwater quality practices, and onsite wastewater systems.</td>
</tr>
<tr>
<td>USDA-Natural Resources Conservation Service</td>
<td>Environmental Quality Incentives Program (EQIP), Conservation Stewardship Program (CSP), Agricultural Conservation Easement Program (ACEP), Conservation Technical Assistance (CTA), Regional Conservation Partnership Program (RCP)</td>
<td>Human/Land</td>
<td>$33,983,459</td>
<td>Total NRCS-led programs for Financial Assistance (FA) and Technical Assistance (TA). FA includes incentives to install various conservation practices on private lands. TA for conservation planning at all scales. TA to install conservation practices not funded through USDA. Includes outreach, conservation district support activities, communications, salaries, benefits, rent, equipment, supplies, contracted services, vehicles and other support costs.</td>
</tr>
<tr>
<td>Iowa Farm Bureau Fed.</td>
<td>SHARE Grants/Partnerships in various other projects</td>
<td>Human/Land</td>
<td>$72,350</td>
<td>See individual report for descriptions of various programs.</td>
</tr>
<tr>
<td>Iowa Pork Producers Association</td>
<td>IAWA/Partnership in other projects</td>
<td>Human/Land/Water</td>
<td>$210,000</td>
<td>See individual report for descriptions of various programs.</td>
</tr>
<tr>
<td>Iowa Soybean Association</td>
<td>Various research, outreach, conservation planning, practice installation, and monitoring ppgms</td>
<td>Human/Land/Water</td>
<td>$1,594,303</td>
<td>See individual report for descriptions of various programs.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$105,442,112</strong></td>
<td></td>
</tr>
</tbody>
</table>

*Note: The total funding is an approximation and may not include all programs or projects.*
The Iowa State Revolving Fund, initially begun with federal funding, assists city wastewater and drinking water systems with low interest rate dollars. The program can be used for nonpoint source treatment since this could reduce the need for treatment in cities. This funding source blends state and federal dollars and is more fully explained in the box below.

**State Revolving Fund**

The Iowa State Revolving Fund (SRF) consists of the Clean Water SRF (CWSRF) and the Drinking Water SRF (DWSRF). The CWSRF provides low-cost loans to finance publicly owned wastewater infrastructure projects as well as publicly or privately owned nonpoint source projects. The DWSRF provides low-cost loans for drinking water infrastructure projects. The interest rate on SRF infrastructure loans is 1.75 percent for 20 years or 2.75 percent for 30 years.

Currently, the Iowa SRF has the capacity to finance any eligible project. Since its inception, the Iowa SRF has loaned out more than $3 billion to 600 different borrowers. In FY18, the Iowa SRF loaned out approximately $250 million to CWSRF infrastructure projects. This includes about $12 million in 0 percent Planning & Design loans.

Since 2003, the Iowa SRF has loaned over $248 million to entities for nonpoint projects. These projects include helping homeowners with new septic systems, closing leaking landfills, brownfield cleanup, buffers and terraces on agricultural land, construction of deep bedded buildings for small livestock producers, and land and habitat restoration. In FY18, the Iowa SRF funded about $14 million in such nonpoint source projects. Nonpoint projects, while important for water quality, amount to about 10 percent of the funding made available through the CWSRF. In FY18, it was less than 6 percent.6

The WRCC sought an answer to a different question from that posed by us in Part One. By asking how much state and federal spending was allocated to just nutrient reduction in Iowa, the second WRCC NRC progress report found the amount to be $105 million in FY2015.7

**Finding 2:**

State and federal spending on nutrient reduction in the state of Iowa was more than half a billion dollars in the year 2017/2018.

**Adding in the Conservation Reserve Program**

The measure of how much is spent each year on nutrient reduction changed with subsequent annual NRS progress reports, making it difficult to track year to year.1 Conservation Reserve Program (CRP) rent payments from the federal government for highly erodible or vulnerable land taken out of crop production was added to the estimate in subsequent progress reports. Certainly taking cropland out of production is a solid method of reducing nutrient loading to Iowa rivers and lakes to reduce Gulf hypoxia. Thus, the addition of the CRP rental payments captures more of the nutrient reduction programs within the state. Deciding to include CRP payments greatly increases the measure of the amount spent. The 2017-18 NRS Annual Progress Report puts nutrient reduction spending in the state at $512 million.8

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1 Those who prepared the 2017-2018 NRS report are aware of this. They state, “total funding estimates reported this year should not be compared to those published in the 2016 annual report.”
How new state spending on nutrient reduction in 2018 measures up

Governor Kim Reynolds promoted the fact that her first bill-signing after taking office in 2017 was water-funding legislation, passed early in the 2018 session. According to The Des Moines Register:

"The bill, which is the first Reynolds signed as governor, will allocate an estimated $282 million to water quality initiatives over the next 12 years."  

The new law has been highly criticized by conservation groups and newspapers such as the Cedar Rapids Gazette for being inadequate because of what it did not include — goals, deadlines, benchmarks of progress, or monitoring.

The $282 million over 12 years amounts to an average of just $24 million per year, compared to the $512 million that the WRCC progress report found to be spent annually on nutrient reduction already. This represents an increase of just under 5 percent in nutrient reduction government spending for mainly nonpoint contamination reduction. Some of the new funding will be dedicated to urban origin pollution. According to the Iowa Secretary of Agriculture, the amount of the new funding dedicated to agricultural non-point pollution reduction is even smaller.

"The legislation that was passed and signed into law commits more than $280 million to water quality efforts in Iowa over the next 12 years. The Department will receive $2 million this year, $4 million next year and then $15 million annually through this legislation."  

As shown in Figure 2, within the half-billion dollars of spending, the WRCC found that solely NRS-focused funding measured about $17 million, which would be about $200 million over 12 years. If the new $282 million to be spent over 12 years simply replaces this amount, there is little increase in funds committed to reducing nutrients. Even if the $282 million is in addition to the $17 million, it is still small compared to total state and federal funding already going to the problem.

While the Legislature and Governor responded to water pollution from nonpoint sources with the 2018 law, the
problem is significant and ongoing, and more will be needed to meet the NRS goals. The increase, in short, turns out to be a figurative drop in the bucket compared to what is needed if Iowa is serious about meeting its obligations to reduce nutrient pollution.

**Part Three: What is required?**

How much would it cost to meaningfully reduce nutrient pollution in Iowa? The NRS strategy document estimated what it would cost to meet the 45 percent reduction in N and P. Much of the problem comes from nonpoint sources, mainly farmland, since about 24 million of Iowa’s 36 million acres is fertilized corn or soybeans.

The NRS strategy document estimated the cost of reducing nonpoint contamination under three scenarios:

*Initial investment costs of the three scenarios range from $1.2 billion to $4 billion. Alternatively, annual costs, including initial investment and operating costs, range from $77 million per year to $1.2 billion per year.*

Such a range makes it difficult to compare the estimated required new spending since the NRS went to effect. However, clearly the cost is in the billions of dollars.

**Finding 4:**

The largest share of nutrient reduction spending in Iowa, reported in the WRCC progress report, has nothing to do with the NRS.

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**What about point source pollution funding?**

The graph at the right shows the spending from the Clean Water Act state revolving loan (SRF) program. The taxpayers of Iowa towns, cities and some industries that discharge waste directly to Iowa waters are committed to meet the NRS goal since they are mandated to redesign and build new treatment plants. The amount spent for these purposes by the SRF in 2018 should be added to the $512 million for water quality improvement. With the availability of funds from the SRF and a mandate to comply, regulated point source polluters are well on their way to meeting the NRS goals.

Point sources account for 4 percent of the 45 percent of N and 16 percent of the 45 percent for P pollution. The estimated cost to reach this pollution from point sources was $1.5 billion in investment and an additional annual cost of $114 million.
**Lime Creek Watershed Improvement Plan**

A more recent estimate of what it will cost to reduce the nutrient contribution from agriculture comes from the Iowa Soybean Association. That group and several partners looked at what it would take to reduce 41 of the 45 percent reduction in N and 29 of the 45 for P that come from nonpoint sources in just one watershed. The report states that sustained agricultural productivity and reduced flood risk are goals along with nutrient reduction.\(^{14}\)

The U.S. Geological Survey divides the nation into hydrologic units, one of the smallest of which is a HUC 12 or Hydrologic Unit 12. Such geographic designations are sometimes termed watersheds.\(^{15}\) Lime Creek HUC 12 is one of more than 1,600 in Iowa.\(^{16}\) Nationwide a HUC 12 can vary from 10,000 to 40,000 acres.\(^{17}\) Consequently multiplying the Lime Creek HUC 12 by the number of such areas in the state of Iowa may not make the best estimate of the total investment needed for the state. Instead, we take the number of acres in the state (35,748,541) divided by the acres in the Lime Creek study area (26,774); this gives a multiplication factor for estimating costs of nutrient reduction statewide, which is 1,335, assuming this HUC 12 is representative of the state of Iowa.\(^{ii}\)

Consequently the capital cost to reduce N by 41 percent and P by 29 percent in Lime Creek is estimated at $2,277,663. Annual costs to maintain that capital as well as the “estimated total for management practices required to attain the goal is $955,321,”\(^{18}\) and costs associated with continuing the program including employing a watershed coordinator require an additional $85,000. Those estimates imply a statewide cost of $1.4 billion a year for about 15 years. The report assumed that the goal could be accomplished by 2030 so it is comparable to the Governor’s commitment of 12 years of new funding of $282 million or approximately $24 million per year. This is another demonstration of the inadequacy of that spending.

The total needs requirement would be covered not by public funding alone but also by a healthy contribution by landowners. Assuming a historic cost share of 50 percent from each, the numbers of what is required dwarf the commitment to date.

We can see that the 2018 Governor’s bill both fails to make significant increases to current nutrient reduction spending and falls far short of what is needed to make progress needed.

**Finding 5:**

*The 2018 nutrient reduction spending bill pales in comparison to estimates of what is required to deal with the problem.*

**Part Four: Other sources of funding for nutrient reduction**

The Lime Creek Watershed Improvement Plan recognizes that significant resources are needed to meet nutrient reduction goals. That report includes a list “of creative and/or sustainable approaches.”\(^{19}\) The ideas include hunting leases to generate revenue; a water quality trading program with point source polluters; conservation easements; and property or income tax deductions for landowners adopting soil and water conservation programs. One interesting approach that would not involve new public funds is the following:

Conservation addendum to agricultural leases: *More than half of Iowa’s farmland is cash rented or crop shared, and an increase in this trend presents issues for ensuring proper conservation measures are in place on Iowa*

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\(^{ii}\) All watersheds are not created equally. Restoring some may require more construction level BMPs (moving dirt which is expensive) versus lower cost BMPs in other watersheds. Still scaling up the cost to one watershed is a reasonable assumption.
farms. Conservation addendums may be a way to ensure both the landowner and the tenant agree on conservation. Addendums could include any conservation measure, but the practices included in this plan would be of most benefit. A standard conservation addendum could be developed and shared with all absentee landowners in the Lime Creek Watershed.  

These ideas notwithstanding, there are other possible public sector sources of new funds to address nutrient pollution in Iowa.

**Natural Resources and Outdoor Recreation Trust Fund**

Iowa voters have spoken on the need to do more for environmental protection and enhancement. As noted by Iowa’s Land and Water Legacy organization:

“In 2010, 63 percent of Iowans voted for a constitutional amendment to create the Natural Resources and Outdoor Recreation Trust Fund, a permanent and protected funding source dedicated to clean water, productive agricultural soils and thriving wildlife habitats.”

As that organization noted, the trust fund sits empty because it requires a state sales tax increase of three-eighths of a cent for funding.

The concept behind the fund was to expand funding for water quality while addressing outdoor recreation as well. Referred to by proponents as IWILL, up to two-thirds of the fund as created could be used for voluntary conservation efforts prescribed by the NRS. This is two-thirds of an estimated $187.5 million per year, or $125 million per year. The table below is the spending formula contemplated when the constitutional amendment was passed.

**Figure 3. IWILL’s formula designates various purposes for funds — water quality and recreation**
Data from the original NRS strategy document shows that more than 90 percent of N and two-thirds of the P come from nonpoint sources, almost all from agricultural runoff. Given that fertilizer is the source of the contamination, it is odd that the normal Iowa sales tax does not apply to the N or P used in agriculture. An urban Iowan might stop by the local hardware store to purchase a bag of Scotts 10-10-10 garden fertilizer and pay sales tax. While the state sales tax rate is 6 percent, inputs to agricultural production are exempt. (There is a small fee already on chemicals, including N and P for groundwater protection programs, but no general sales tax).

Iowa farms use a lot of fertilizer. The USDA’s latest Census of Agriculture (2017) shows about $1.8 billion spent on “commercial fertilizer, lime and soil conditioners” in Iowa that year. Canceling the exemption and taxing such a large input would bring a substantial source of nutrient reduction funding: $1,845,469,000 X 6 % = $ 110,728,140.

Since N and P are the culprits polluting Iowa waters and the Gulf, it is a logical to propose a tax on those inputs. Farmers have exemptions to inputs for their operation. However, they do pay tax on one such product. Just like all Iowans, farmers pay a use tax on the pickups they use on the farm and off, to pay for the impact their vehicles impose on the roads we all use. Since agricultural fertilizer is used on the farm but also flows into rivers and lakes, costing us all, a tax on fertilizer follows the same logic.

The roughly $110 million a year from a sales tax on fertilizer would over 12 years produce nearly five times the amount appropriated by the act Governor Reynolds signed in 2018. It is roughly comparable to what would come from the amount dedicated to water quality in the three-eighths of a cent on the general sales tax for IWILL. Over the next 30 years, a 6 percent fertilizer fee on the amount of fertilizer used in 2017 would bring in something close to what was estimated to be required by the NRS scientific study to meet the nonpoint portion of the overall reduction of 45 percent in N and P. Taxing the chemicals that pollute Iowa waters follows the polluter pays concept that is standard in much of environmental legislation.

### Finding 6:
Other sources are available to fund nonpoint nutrient reduction in Iowa such as funding IWILL and taxing fertilizer.

### Conclusion
This paper pulls together diverse estimates of revenues from the Iowa state budget, the WRCC, IWILL, and fertilizer used in the state. It combines these with estimates of nutrient reduction spending needs from the NRS scientific study and the Iowa Soybean Association. Up until now these figures have not been brought together so that public policy is given direction. The findings documented throughout this report are reproduced below.

- Since the implementation of the NRS, water quality general fund spending has dropped off and struggled to return to pre-recession levels.

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**iii** The total in the 2017 Census of Agriculture was much smaller than the 2012 figure $2,587,059,000.

**iv** A use tax is imposed by most states on vehicle purchases. It applies inside Iowa as well as in surrounding states to prevent shopping for lower taxes. A similar arrangement with surrounding states could be utilized for fertilizer purchases.
• State and federal spending on nutrient reduction in the state of Iowa was more than half a billion dollars in the year 2017/2018.
• The 2018 law did not greatly increase state and federal government funding for nutrient reduction in Iowa.
• The largest share of nutrient reduction spending in Iowa, reported in the WRCC progress report, has nothing to do with the NRS.
• The 2018 nutrient reduction spending bill pales in comparison to estimates of what is required to deal with the problem.
• Other sources are available to fund nonpoint nutrient reduction in Iowa such as funding IWILL and taxing fertilizer.

Policy makers need to acknowledge both the magnitude of the water quality problem in Iowa, and the role nutrient pollution plays. Financing has been inadequate. We are paying lip service to our financial responsibility as a state and have underestimated what is required for success. In addition, previous IPP papers have shown that more funding alone may not be sufficient. The whole voluntary nature of Iowa’s approach to nonpoint water pollution is not working.
2 Christopher Jones, Jacob Nielsen, Keith Schilling, & Larry Weber, “Iowa stream nitrate in the Gulf of Mexico.” April 2018. PLOS. 
https://journals.plos.org/plosonline/article/file?id=10.1371/journal.pone.0195930&type=printable
3 Iowa Department of Agriculture and Land Stewardship, Iowa Department of Natural Resources, Iowa State University College of Agriculture and Life Sciences, “Iowa Nutrient Reduction Strategy: A science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico.” November 2012. 
5 Ibid.
6 Memo from Lori Beary, Community Development Director at the Iowa Finance Authority.
12 Iowa Department of Agriculture and Land Stewardship, Iowa Department of Natural Resources, Iowa State University College of Agriculture and Life Sciences, “Iowa Nutrient Reduction Strategy: A science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico.” Updated December 2017. 
13 IDALS, IDNR, ISU CALS, “Iowa Nutrient Reduction Strategy: A science and technology-based framework to assess and reduce nutrients to Iowa waters and the Gulf of Mexico.” November 2012. page 2
19 ibid, page 43.
20 Ibid.
22 Ibid.
25 Iowa Department of Revenue, “Iowa Tax/Fee Descriptions and Rates.” N.D. “Iowa Department of Revenue, Iowa vehicle purchase and lease. (undated) “These vehicles are subject to a one-time registration fee equal to 5% of the sales or lease price.”
https://tax.iowa.gov/iowa-tax-fee-descriptions-and-rates#MVUT