Contract No. 006-087
“North Dakota Hen House Project II”
Submitted by Delta Waterfowl
Principal Investigator: Matt Chouinard
Directives C, B

PARTICIPANTS

<table>
<thead>
<tr>
<th>Sponsor</th>
<th>Cost Share</th>
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</thead>
<tbody>
<tr>
<td>Delta Waterfowl (cash)</td>
<td>$29,300</td>
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<tr>
<td>Subtotal Cash Cost Share</td>
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<td>Delta Waterfowl (in-kind)</td>
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<tr>
<td>Subtotal In-kind Cost Share</td>
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<td></td>
</tr>
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<td>North Dakota Industrial Commission</td>
<td>$26,300</td>
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<tr>
<td>Total Project Cost</td>
<td>$60,900</td>
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</table>

Project Schedule – 20 months/10 years
Contract Date – 1/29/2016
Start Date – 1/1/2016
Completion Date – September 30, 2026

Project Deliverables:
Status Report: June 30, 2017 ✓
Status Report: April 30, 2018 ✓
Status Report: April 30, 2019 ✓
Status Report: April 30, 2020 ✓
Status Report: April 30, 2021 ✓
Status Report: April 30, 2022
Status Report: April 30, 2023
Status Report: April 30, 2024
Status Report: April 30, 2025
Final Report: September 30, 2026

OBJECTIVE/STATEMENT OF WORK:
This project includes the installation of 200 new hen houses.

STATUS:
Contract 006-087 has been executed. The project as submitted requested $26,600. The Commission’s award is for $26,300 which reflects the removal of $300 of Outdoor Heritage Fund dollars being used for the purpose of rental of equipment. The applicant will be providing this $300 of funding as either cash or in-kind.

1/9/2017 Status Report was received. It is posted on the website along with pictures. The Report states: In May 2016, Delta Waterfowl staff began field work on our North Dakota Outdoor Heritage Fund partnership grant entitled “North Dakota Hen House Project II”. This partnership was highlighted in the Summer 2016 issue of the Delta Waterfowl magazine as well as a press release in October 2016 entitled “North Dakota Outdoor Heritage Fund Grant Will Add Mallards to the Fall Flight”.

Initial work on the project included locating suitable Hen House locations and purchase/delivery of project materials, including welded wire fencing for nest tunnels. To minimize expenses, Delta staff
purchased and picked up the fencing in Fargo and delivered it to the project area near Woodworth, North Dakota. Flax straw was used to build Hen House tunnels because it is durable and can last several years. In mid-October, Delta Waterfowl staff and a project contractor picked up 100 square bales from the North Dakota State University Agriculture Extension facility in Carrington, North Dakota. The contractor quickly began construction of the tunnels, which are now complete and ready for installation.

Delta staff also secured posts and cradles for the project, which were delivered to the project site in late November. These steel Hen House bases are durable, often lasting for more than 20 years in wetlands, ensuring many years of productivity. To install Hen Houses, contractors will access wetlands, find a suitable location near the edge of cattail/bulrush, drill a hole in the ice and pound in the base post. The cradle and tunnel are placed atop the base post and filled with grass nesting material. Contractors also take a GPS location at each Hen House, which Delta staff use to create maps and manage the program.

Heavy snow and cold temperatures have delayed field work for this project, however Hen House contractors have located suitable installation sites and will begin work as soon as conditions allow. Our goal is installation of 200 new Hen Houses by mid-April, 2017.

A more comprehensive report, including a map of installed structures, will be provided when all field and data entry work is complete (June 2017). Delta Waterfowl sincerely appreciates the financial assistance provided by the Outdoor Heritage Fund to our conservation efforts in North Dakota.

6/30/2017 Status Report received. It is posted on the website along with pictures. The Report states in part: This report (#2) primarily covers the installation process of 200 Hen Houses (HH) in the Woodworth and Carrington region of North Dakota. This area has extremely high wetland and breeding duck densities, making it an excellent site for new HHs. Existing HHs in the Woodworth area have been very effective, providing a safe and productive place for mallards to nest.

Heavy snowfall in early winter (December and January) made conditions difficult for field work, but the HH contractors worked hard to complete installation, ensuring all 200 HHs were available to nesting ducks in 2017. The installation process typically includes; 1) accessing the wetland via ATV/snowmobile or on foot, 2) finding a suitable location near the edge of cattail/bulrush, 3) drilling a hole in the ice and pounding in the base post, 4) securing the cradle and tunnel atop the base post, 5) filling the HH with grass nesting material, and 6) collecting a GPS location. As a result of the warm weather in late March 2017, most small wetlands in the Woodworth area were virtually ice free by early April. Contractors were able to finish installation of the final HHs using waders to access good wetland locations.

Though much of North Dakota is experiencing a drought this year, Delta staff and contractors have seen quite a few hens occupying the new Outdoor Heritage Fund Hen Houses. All 200 new HHs will be monitored and maintained by Delta Waterfowl contractors for the next 10 years, ensuring their productivity through the 2026 nesting season. During winter maintenance, each HH will be checked for occupancy during the previous spring by a nesting hen. This information and the GPS coordinates will be instantly sent to Delta staff via a Spot Messenger device. At the conclusion of winter maintenance efforts each year, Delta Waterfowl will report the HH usage rate and estimated duck production in the State of North Dakota.

With the addition of 200 OHF HHs, there are now nearly 400 active HHs in the Woodworth/Carrington area. The locations of these HHs are located on the maps posted with this status report. Delta Waterfowl biologists estimate that over 16,000 mallard ducklings will hatch in these HHs over the next 10 years.
The North Dakota Outdoor Heritage Fund/Delta Waterfowl partnership was highlighted in the Summer 2016 issue of the Delta Waterfowl magazine as well as a press release in October 2016 entitled “North Dakota Outdoor Heritage Fund Grant Will Add Mallards to the Fall Flight”. On behalf of Delta Waterfowl members and waterfowl hunters everywhere, Delta Waterfowl sincerely thanks the State of North Dakota and the Outdoor Heritage Fund for your commitment to this Hen House partnership.

**May 2018**

In October 2017, Delta staff and contractors began preparations for maintenance of the HH and a complete assessment of use by ducks. With Delta staff assistance, contractors secured flax straw bales to be used for HH maintenance because of its durability and persistence. The bales were transported to the Woodworth area for maintenance of the nest structures in late winter.

Extreme cold in January 2018 delayed field work until February, but contractors were able to maintain all of the nest structures by mid-April. During the maintenance visits, contractors remove old nest remains (eggs, eggshells, feathers, etc.), replace grass nesting material, and repair any damage to the Hen Houses. Contractors also document evidence of nest(s) during the previous breeding season. This information is submitted to Delta Waterfowl staff who enter it into a database and evaluate to determine usage rate (percentage of HH used during a nesting season.)

Of the 200 HH found to be in suitable condition for use by ducks, contractors were able to definitively determine the presence or absence of a nest in 178 structures. They found evidence of 45 nest attempts by ducks for a 25% usage rate. This usage rate was exceptional for first-year HH and likely due to targeted installations of new structures in areas with a history of good usage rates. Depending on wetland habitat conditions, we suspect usage of the nest structures will exceed 50% in future nesting seasons. However, more precipitation is needed to increase wetland water levels and prevent further expansion of cattail stands.

In the coming months, Delta Waterfowl staff and/or contractors will visually inspect a sample of the Hen Houses to determine if any additional damage occurred during spring thaw. Usage rates and estimated duck production for 2018 will be provided in the April 2019 project report. Delta Waterfowl appreciates the support of the OHF. Pictures are available in the full report on the web page.

**May 2019**

All 200 hen houses (HH) were verified by Delta Waterfowl staff to be available to nesting ducks during the 2018 waterfowl nesting season. After the nesting season, preparations for maintenance were initiated and an assessment of usage was completed. Maps were created and to assist with locating all HH during field work. Maintenance was completed by April 2019.

Overall usage rate for Woodworth and Carrington was 31% in 2018, providing a good boost to the local mallard population. Usage decreased slightly from 2017 (37%) due to drought. Additional details and pictures are available in the full report.

**May 2020**

Maintenance efforts began in August 2019. Heavy rain and snowstorms in the fall of 2019 made harvest difficult. As a result, 19 HHs were located in wetlands surrounded by unharvested crop or were flooded. Contractors were unable to visit and evaluate those HHs or perform maintenance. This work will have to wait until the wetlands are accessible and water levels recede. Currently, 181 of the 200 HHs are known to be available to nesting hens for the 2020 breeding season.
Contractors documented evidence of nests during the previous breeding season and it was entered into a database. Overall usage rate for Woodworth and Carrington area was 35%, a slight increase from 2018 (31%). It is estimated that 370 ducklings hatched in 2019 as part of this project. Though water levels were higher in 2019, many wetlands were still drier than normal, allowing cattail and other vegetation to encroach upon nest structures which leads to lower usage rates than those in open water. Additional details are available in the full report.

June 2021
Delta Waterfowl contractors visited all 200 HHs in early 2021 to complete the annual maintenance and evaluation process, which includes replacement of grass nesting material, HH repair (if needed), and a determination if the structure has been used by a nesting duck. Of the 200 HHs, 192 were suitable for use. Eight had been damaged by flooding or ice and were replaced. Once maintenance was complete, contractors activated a mobile phone app called QuickCapture. The app uploads the GPS location and HH status data in a database.

The overall usage rate was 62% in the Woodworth and Carrington areas in 2020, well above 2019 (35%) and more than double the first year of the project (2017; 25%). Delta Waterfowl staff estimate that over 960 mallard ducklings hatched in 2020 as a result of this project. Additional details and photographs are available in the full report.

Updated 6/23/2021