Snow Fence

• Dick Banowetz, DeWitt Highway Maintenance Supervisor, Iowa DOT
• Sheri Anderson, Winter Operations Analyst, Iowa DOT
• Jim Dowd, Winter Operations Research Analyst, Iowa DOT
“National research has found that it costs 100 times more to plow snow than to trap it with a snow fence.”

Source: Strategic Highway Research Program
Benefits of snow fence

- Reduces blowing and drifting on the roadway
- Creates safer driving conditions
- Reduces accidents
- Increases visibility
- Decreases freeze-thaw cycles
- Lowers snow removal cost
- Stores snow at low cost

Benefits to land owners

- Improves accessibility to farmsteads and rural areas
- Provides a service to your community
- Helps reduce soil erosion
- Living or standing corn snow fence provides a wildlife habitat
- Can increase yield by retaining moisture and reducing drying effects of the wind
- Payment to land owner
Snow Fence Types

Standing row corn

Perma-Rail fence

Wyoming snow fence - upright

Wyoming snow fence - tilted
Snow Fence Types

• Living snow fence
Snow Fence Budget

• Permanent fence
  – $0.70 per linear foot
  – FY 10 - $17,180
  – 5.77 miles

• Standing row corn
  – $3.85 per bushel, 50 cents over the market rate
  – FY 10 - $65,227
  – 80.41 miles, 167 acres
Highway 20 Snow Fence Project

- Combination ROW and Snow Fence
- Does not require access to the adjacent land
- Looks nice
- Does not require yearly maintenance
- Used where limited ROW is available
1-foot gap at top and bottom
Roadway Weather Information Systems (RWIS) Research/New Ideas

• Sheri Anderson, Winter Operations Analyst, Iowa DOT
• Ben Hucker, Engineering Co-op Student, Iowa DOT
Non-Traditional RWIS

- Much lower cost
- Minimal deployment
- Minis
  - Permanent but easy install
- Portables
  - Can move as needs change
Minis

- Pave temp only
- Mount on existing infrastructure
- Very low cost
- Helps fill in where there are gaps in pavement temperature coverage
Portables

- Solar powered and wireless comms.
- Atmospherics and pave temp
- Used for
  - Potential RWIS location trials
  - Short term needs
  - Info during RWIS failure
New Weatherview

• Public access to RWIS now includes
  – Camera views from multiple angles
  – Traffic speed info
  – Google map interface with overlays
http://weatherview.iowadot.gov
**RWIS Information at Jefferson (IA 4)**

**Observation Date and Time**
7/15/2010 9:23:02 AM

**Atmospheric Data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Temperature</td>
<td>77.4°F</td>
</tr>
<tr>
<td>Dew Point</td>
<td>64.0°F</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>63.0%</td>
</tr>
<tr>
<td>Average Wind Speed</td>
<td>2 mph (2 knots)</td>
</tr>
<tr>
<td>Wind Gust</td>
<td>4.29 mph (4 knots)</td>
</tr>
<tr>
<td>Wind Direction</td>
<td>NW (310°)</td>
</tr>
<tr>
<td>Precipitation</td>
<td>None</td>
</tr>
<tr>
<td>Visibility</td>
<td>7.1 Miles</td>
</tr>
</tbody>
</table>

**Surface Data**

<table>
<thead>
<tr>
<th>Location</th>
<th>Surface Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA 4 NB Driving Pavement</td>
<td>92.8°F</td>
</tr>
<tr>
<td>IA 4 SB Driving Deck</td>
<td>96.6°F</td>
</tr>
</tbody>
</table>

**Sub Surface Data**

<table>
<thead>
<tr>
<th>Location</th>
<th>SubSurface Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA-4 NB Approach</td>
<td>87.1°F</td>
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</tbody>
</table>

**Traffic Data (2-minute average)**

<table>
<thead>
<tr>
<th>Location</th>
<th>Speed</th>
<th>Volume</th>
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</thead>
<tbody>
<tr>
<td>IA-4 SB</td>
<td>58.4</td>
<td>1.0</td>
</tr>
<tr>
<td>IA-4 NB</td>
<td>54.7</td>
<td>4.0</td>
</tr>
</tbody>
</table>

**Deep Temperature Probes**

- Date Not Available
New Weatherview

• Will soon have
  – DOT-only alerting features
  – Crew on/off maps
  – Historical report charts and graphs
  – Camera page
  – Info from mini and portable stations
### Device

<table>
<thead>
<tr>
<th>Device Created/Updated (CST)</th>
<th>Device Name</th>
<th>Type</th>
<th>Device Address</th>
<th>Edit</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr 30 2010 12:49PM</td>
<td>Office cell email</td>
<td>Email</td>
<td><a href="mailto:5152902713@email.uscc.net">5152902713@email.uscc.net</a></td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>Jun 02 2010 10:39AM</td>
<td>Test device</td>
<td>Email</td>
<td><a href="mailto:slkdjn@dlkn.com">slkdjn@dlkn.com</a></td>
<td>Edit</td>
<td>Delete</td>
</tr>
<tr>
<td>Mar 30 2010 3:16PM</td>
<td>Tina's email</td>
<td>Email</td>
<td><a href="mailto:tina.greenfield@dot.iowa.gov">tina.greenfield@dot.iowa.gov</a></td>
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<td>Delete</td>
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</table>

### Alerts

<table>
<thead>
<tr>
<th>Enabled</th>
<th>Alert Last Updated (CST)</th>
<th>Alert Description</th>
<th>Alert When...</th>
<th>Edit</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>Disabled</td>
<td>Jun 2 2010 10:41AM</td>
<td>Wind</td>
<td>When Speed &gt; 25.00 mph</td>
<td>Edit</td>
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</tr>
<tr>
<td>Enabled</td>
<td>May 12 2010 8:16AM</td>
<td>Visibility</td>
<td>Visibility &lt; 2.00 miles</td>
<td>Edit</td>
<td></td>
</tr>
<tr>
<td>Enabled</td>
<td>Jul 13 2010 3:48PM</td>
<td>Precipitation on Cold Pavement</td>
<td>Road Temp &lt;= 34 and Precip= Any</td>
<td>Edit</td>
<td></td>
</tr>
<tr>
<td>Enabled</td>
<td>May 12 2010 8:17AM</td>
<td>Bridge Frost</td>
<td>Bridge Temp&lt;= 80.00 and Bridge Temp &lt; Dew Point</td>
<td>Edit</td>
<td></td>
</tr>
<tr>
<td>Enabled</td>
<td>May 6 2010 11:29AM</td>
<td>Precipitation</td>
<td>Precip is Any</td>
<td>Edit</td>
<td></td>
</tr>
</tbody>
</table>
Let’s go have lunch!

The Machine Shed Restaurant
7250 Northwest Blvd.
Davenport, Iowa

**Directions:**
- Exit DOT grounds and turn left onto IA 130 (NW Blvd.).
- Continue SB on NW Blvd. across I-80.
- Restaurant will be about a block south of I-80 on right.
- Very hard to miss.