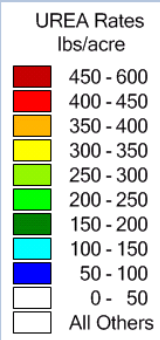
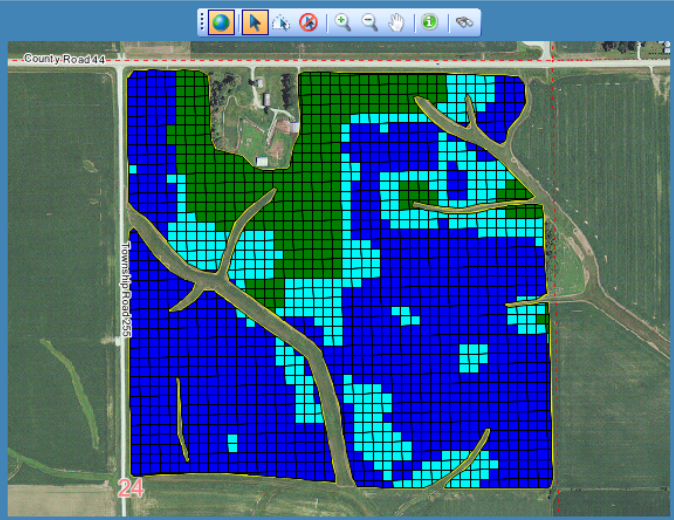


**HOW TO: CREATE A FLAT RATE  
N REC USING MULTIPLE N  
SOURCES IN THE VRT REC  
CREATOR**

## How to: Create a flat rate N rec using multiple N sources in the VRT Rec creator

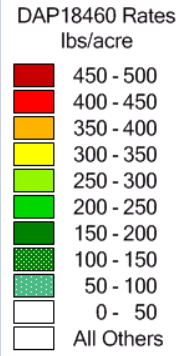
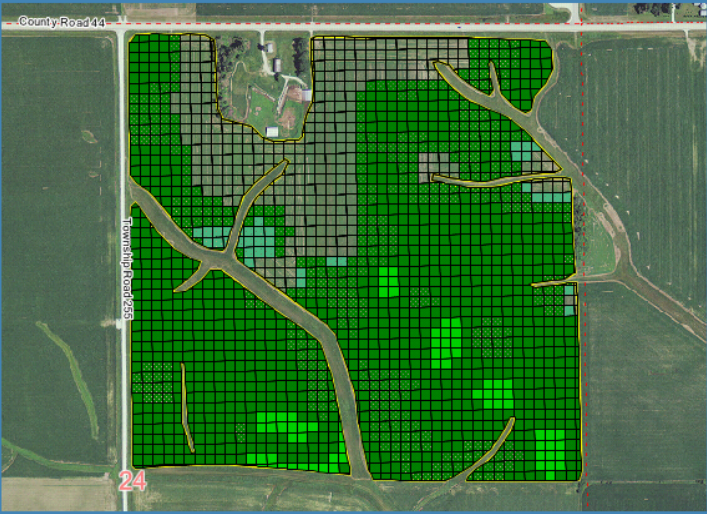
- In this example we want to apply 72 lbs of N across the entire field.
- N will come from 2 products
  - ▣ UREA
  - ▣ DAP
- The highest rate of UREA will be 156.52 lbs/ac



N source 1 = UREA

N source 2 = DAP

| Product       | Minimum | Average | Maximum | Total    | Units | Plan                     |
|---------------|---------|---------|---------|----------|-------|--------------------------|
| UREA          | 73.28   | 104.811 | 156.522 | 13672.43 | lb    | <input type="checkbox"/> |
| DAP 18-46-0   | 0       | 132.15  | 212.728 | 17238.73 | lb    | <input type="checkbox"/> |
| POTASH 0-0-60 | 75      | 112.145 | 180.133 | 14629.19 | lb    | <input type="checkbox"/> |



You will need less UREA in areas that call for DAP.

| Product       | Minimum | Average | Maximum | Total    | Units | Plan                                |
|---------------|---------|---------|---------|----------|-------|-------------------------------------|
| UREA          | 73.28   | 104.811 | 156.522 | 13672.43 | lb    | <input type="checkbox"/>            |
| DAP 18-46-0   | 0       | 132.15  | 212.728 | 17238.73 | lb    | <input checked="" type="checkbox"/> |
| POTASH 0-0-60 | 75      | 112.145 | 180.133 | 14629.19 | lb    | <input type="checkbox"/>            |

Legend Histogram

Print Plan Archive

Ensure past and current crops are set correctly. This is very important later on.

Previous Crop Adjustment

| Past Crop(s)   | Current Crop(s)   |
|--|---|
| Soybeans 130.45  | Corn 130.45   |
|  |  |
| <input checked="" type="radio"/> Past - 2012                                       | <input type="radio"/> Current - 2013  |

# Select: N – P – K

Relationships Previous Crop Adjustments **Future Crop Needs** Adjustments Fertilizer Products Field Rec Map Output Load Sheet

Year 1

- Corn N
- Corn on Corn Addition
- Corn Bronze P
- Corn Gold P
- Corn Silver P
- Corn Bronze K
- Corn Gold K
- Corn Silver K

Crop

Year 2

Crop

Year 3

Crop

Year 4

Crop

Multiple Year

- Corn Sulfur
- ECCE to 6.9

Fall N Application

In this example the crop rotation is Corn/Soybeans. Therefore, we want 72 lbs of N over the entire field.

Set Actual\_N to 72 in the Optional Nutrient Constraints section.

Relationships Previous Crop Adjustments Future Crop Needs Adjustments Fertilizer Products Field Rec Map Output Load Sheet

**Flat Rate Adjustments**

|          | Addition | Deduction |
|----------|----------|-----------|
| Actual N | 0        | 0         |
| Actual P | 0        | 30        |
| Actual K | 0        | 0         |

**Product Based Recs**

Fertilizer and Lime

Chemical

- Harness 20G
- Tripleflex

**Optional Nutrient Constraints**

Set

| Order | Variable | Query | Expression |
|-------|----------|-------|------------|
| ▶ 1   | Actual_N |       | 72         |

Select your products. Remember, the more DAP you have in an area, the less UREA you will need to fulfill that N requirement

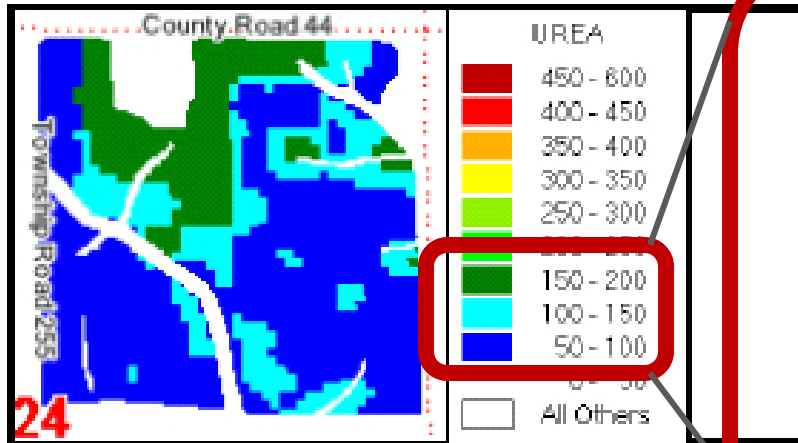
Relationships Previous Crop Adjustments Future Crop Needs Adjustments **Fertilizer Products** Field Rec Map Output Load Sheet

Products to supply nutrient needs

|                        | Primary       | Min Non-Zero                           | Forced Min                             | Maximum                                  | Total | Average |
|------------------------|---------------|--|--|--|-------|---------|
| N                      | UREA          | <input checked="" type="checkbox"/> 50 | <input checked="" type="checkbox"/> 50 | <input checked="" type="checkbox"/> 600  | 0     | 0       |
| P                      | DAP 18-46-0   | <input checked="" type="checkbox"/> 50 | <input type="checkbox"/> 50            | <input checked="" type="checkbox"/> 500  | 0     | 0       |
| K                      | POTASH 0-0-60 | <input checked="" type="checkbox"/> 50 | <input checked="" type="checkbox"/> 75 | <input checked="" type="checkbox"/> 1000 | 0     | 0       |
| <b>Secondary</b>       |               |  |  |  |       |         |
| Ca                     |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| Mg                     |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| S                      |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| <b>Micro-nutrients</b> |               |  |  |  |       |         |
| B                      |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| Cu                     |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| Fe                     |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| Mn                     |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| Zn                     |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |
| <b>Lime</b>            |               |  |  |  |       |         |
| ECCE                   |               | <input type="checkbox"/>               | <input type="checkbox"/>               | <input type="checkbox"/>                 | 0     | 0       |

Calculate

$$\text{UREA} = (\text{N} / .46)$$



| N  | Factor | UREA (lbs/ac) |
|----|--------|---------------|
| 72 | .46    | 156.52        |
| 55 | .46    | 119.56        |
| 30 | .46    | 65.22         |

NOTE: N rates in table are only to show the calculation of required UREA. They may or may not be actual rates used for this field and they do not show the supplemented N gained from DAP.



This example shows you how to create a flat rate of N, using multiple products, while changing the rates of actual N based on Past Crop.

Relationships Previous Crop Adjustments Future Crop Needs Adjustments Fertilizer Products Field Rec Map Output Load Sheet

Previous Crop Adjustment

Past Crop(s)

Corn 103.62  
Soybeans 51.30  
Alfalfa 13.61

Current Crop(s)




Corn 154.92  
Alfalfa 13.61

Field map for Past - 2012 showing crop distribution and N rates. The map is divided into three main sections: a green section (Alfalfa) with a rate of 0, a blue section (Soybeans) with a rate of 72, and a pink section (Corn) with a rate of 122. The Corn section is further divided into three sub-sections, each with a rate of 122.

Field map for Current - 2013 showing crop distribution and N rates. The map is divided into three main sections: a green section (Alfalfa) with a rate of 0, a pink section (Corn) with a rate of 122, and a blue section (Soybeans) with a rate of 72. The Corn section is further divided into three sub-sections, each with a rate of 122.

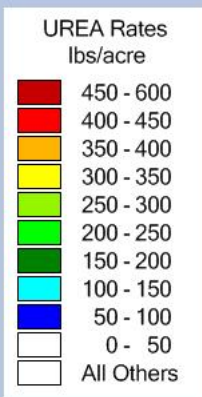
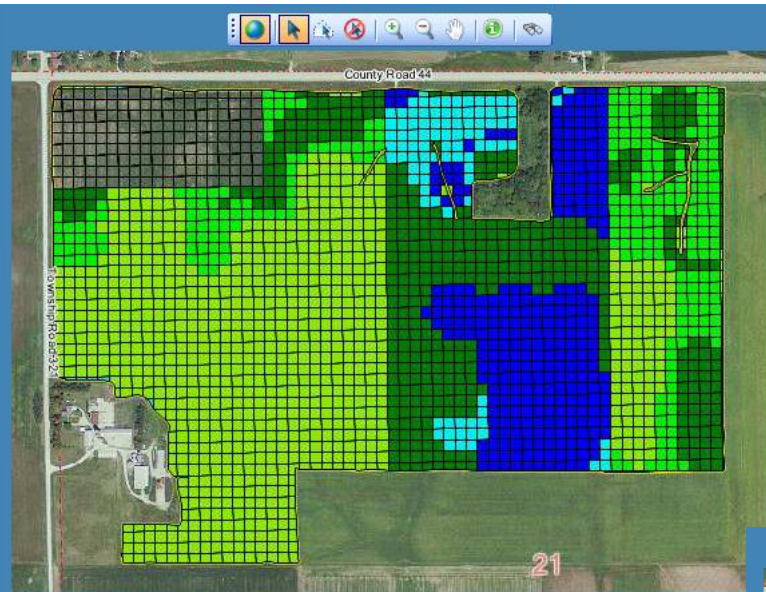
Past - 2012

Current - 2013

Corn –   
Soybeans –   
Alfalfa – 

Corn/Corn = 122 lbs of N  
Corn/Soybean = 72 lbs of N  
Alfalfa/Alfalfa = 0 lbs of N

Set Crops



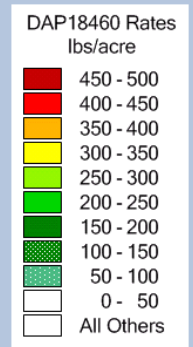
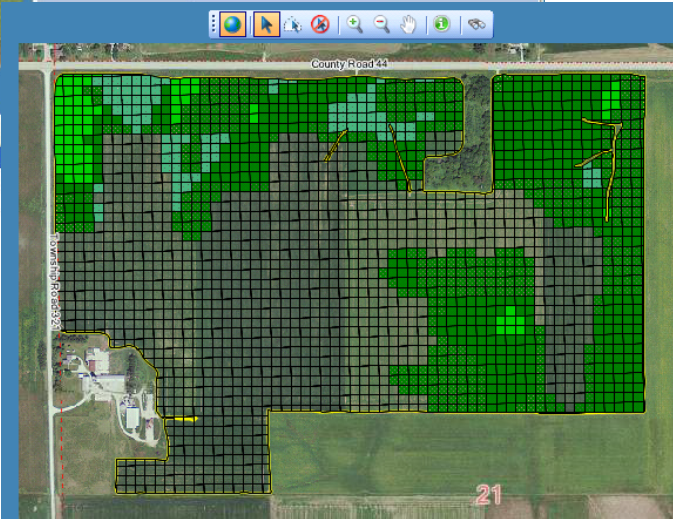
N source 1 = UREA

N source 2 = DAP

| Product       | Minimum | Average | Maximum | Total    | Units | Plan                     |
|---------------|---------|---------|---------|----------|-------|--------------------------|
| ▶ UREA        | 0       | 187.401 | 265     | 31590.93 | lb    | <input type="checkbox"/> |
| DAP 18-46-0   | 0       | 67.939  | 221.859 | 11452.74 | lb    | <input type="checkbox"/> |
| POTASH 0-0-60 | 0       | 82.586  | 201.533 | 13921.82 | lb    | <input type="checkbox"/> |

DAP is applied at a variable rate over the entire field, but UREA is applied only to corn and soybean fields

You will need less UREA in areas that call for DAP.



| Product       | Minimum | Average | Maximum | Total    | Units | Plan                     |
|---------------|---------|---------|---------|----------|-------|--------------------------|
| UREA          | 0       | 187.401 | 265     | 31590.93 | lb    | <input type="checkbox"/> |
| ▶ DAP 18-46-0 | 0       | 67.939  | 221.859 | 11452.74 | lb    | <input type="checkbox"/> |
| POTASH 0-0-60 | 0       | 82.586  | 201.533 | 13921.82 | lb    | <input type="checkbox"/> |

Legend | Histogram

Print    Plan    Archive

Print All    Summary    Delete

# Select: N – P – K

Relationships Previous Crop Adjustments **Future Crop Needs** Adjustments Fertilizer Products Field Rec Map Output Load Sheet

Year 1

- Corn N
- Corn on Corn Addition
- Corn Bronze P
- Corn Gold P
- Corn Silver P
- Corn Bronze K
- Corn Gold K
- Corn Silver K

Crop  ▼

Year 2

Year 3

Year 4

Crop  ▼

Crop  ▼

Crop  ▼

Multiple Year

- Corn Sulfur
- ECCE to 6.9

Fall N Application

Given that we want to apply different rates of N based on Past Crop, we need to write a separate equation for each scenario.

Relationships | Previous Crop Adjustments | Future Crop Needs | **Adjustments** | Fertilizer Products | Field Rec Map | Output | Load Sheet

### Flat Rate Adjustments

|          | Addition | Deduction |
|----------|----------|-----------|
| Actual N | 0        | 0         |
| Actual P | 0        | 30        |
| Actual K | 0        | 0         |

### Product Based Recs

#### Fertilizer and Lime

#### Chemical

- Harness 20G
- Tripleflex

### Optional Nutrient Constraints

Set

|   | Order | Variable | Query                  | Expression |
|---|-------|----------|------------------------|------------|
| ▶ | 1     | Actual_N | Past_Crop = 'Corn'     | 122        |
|   | 2     | Actual_N | Past_Crop = 'Soybeans' | 72         |
|   | 3     | Actual_N | Past_Crop = 'Alfalfa'  | 0          |

Note: Single 'Quotes' are required around words in the query.

# Select your products. Remember, the more DAP you have in an area, the less UREA you will need to fulfill that N requirement

Relationships Previous Crop Adjustments Future Crop Needs Adjustments **Fertilizer Products** Field Rec Map Output Load Sheet

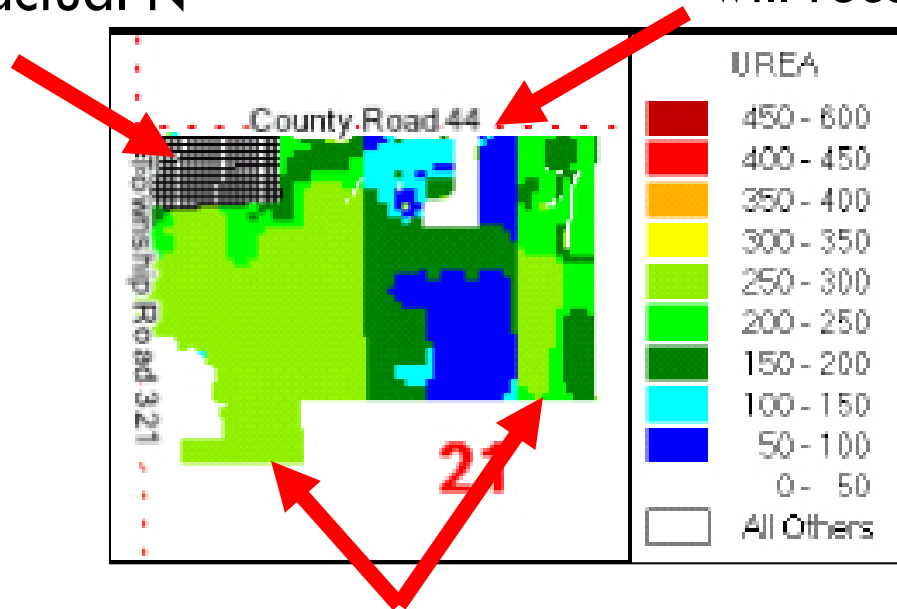
Products to supply nutrient needs

|                 | Primary       | Min Non-Zero                           | Forced Min                  | Maximum                                  | Total                          | Average                        |
|-----------------|---------------|--|-----------------------------|--|--------------------------------|--------------------------------|
| N               | UREA          | <input checked="" type="checkbox"/> 50 | <input type="checkbox"/> 50 | <input checked="" type="checkbox"/> 265  | <input type="text" value="0"/> | <input type="text" value="0"/> |
| P               | DAP 18-46-0   | <input checked="" type="checkbox"/> 50 | <input type="checkbox"/> 50 | <input checked="" type="checkbox"/> 500  | <input type="text" value="0"/> | <input type="text" value="0"/> |
| K               | POTASH 0-0-60 | <input checked="" type="checkbox"/> 50 | <input type="checkbox"/> 50 | <input checked="" type="checkbox"/> 1000 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Secondary       |               |  |                             |  |                                |                                |
| Ca              |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Mg              |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| S               |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Micro-nutrients |               |  |                             |  |                                |                                |
| B               |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Cu              |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Fe              |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Mn              |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Zn              |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |
| Lime            |               |  |                             |  |                                |                                |
| ECCE            |               | <input type="checkbox"/>               | <input type="checkbox"/>    | <input type="checkbox"/>                 | <input type="text" value="0"/> | <input type="text" value="0"/> |

Calculate

Alfalfa fields will receive no actual N (0 lbs/ac)

Corn on Soybean fields will receive less actual N (72 lbs/ac)



Corn on Corn fields will receive a greater amount of actual N (122 lbs/ac)