Lawns to Legumes Individual Awards Selection Protocol – June 2025

BWSR has developed a GIS based approach to guide the selection of Lawns to Legumes Individual Support applicants. This approach considers applicants' locations relative to mapped priority pollinator areas, as well as balanced geographic distribution and equity/environmental justice. Demand for support greatly outstrips supply.

The selection process uses a GIS-based lottery distribution system while balancing several criteria:
1. Priority habitat areas for the rusty-patched bumblebee, public waters, the I35 corridor, and the DNR wildlife action network (all combined to create mapped priority area 1). Note that we anticipate the refinement of these maps as further research takes place.
2. Geographic distribution, ensuring all regions of the state are represented, while recognizing that a large majority of applications are clustered in the Twin Cities metro and other urban areas.
3. Environmental justice, ensuring that low-income, minority, and tribal communities are represented among the selected recipients.

Details of the process are as follows:
1. [SWCD Technical Service Areas](#) (TSAs) were used to provide an initial set of polygons for geographic distribution across the state.

2. All applicant addresses were geocoded and initial geographic distribution assessed. The results were as follows:

```
7427 Matched (98.57%)
43 Unmatched (0.57%)
65 Tied (0.86%)
```

3. All applicants that had previously applied 4 or 5 times without getting selected were automatically awarded this round.

4. Within all TSAs all remaining points were assigned to each applicant based on priority area location, location in an environmental justice* (EJ) area, and self-reported income.

   - Priority Area 1: 2 points
   - Priority Area 2: 1 point
   - EJ Area: +1 point

     o In only 1 EJA area: +.25 points

     o In 2 EJA areas: +.5 points

     o In 3 EJA areas: +.75 points

     o In 4 EJA areas: No applications met these conditions

   - Self-reported income <$50,000 not already in an EJ low-income area: +1 point

   Therefore, 3 points was the maximum that could be assigned.

5. Within each outstate TSA, applicants with the highest scores were selected aiming for a total of 1,200 funded outstate applications (40% of 3,000), or 171-172 per TSA. Since TSA 5 had less than 171 (133) total applicants, all 133 applicants in TSA 5 were funded. The remaining unallocated awards was 1,067. These 1,067 awards then needed to be distributed to the remaining 6 outstate TSAs giving five of them 178 awards and one of them 177 awards. TSA 6 had the least number of applications, so it received one less award.

6. Applicants who had already applied 4 or 5 times in the past and were not awarded were automatically awarded this round. Those awarded applicants were then subtracted from the number of awards that were to be given within each TSA. The remaining applicants within each TSA would then be subject to the subsequent GIS analysis to select the 180/181 awards minus those that had been automatically awarded.

7. Within TSAs 3, 6, and 7, to achieve better geographic distribution between highly populated areas and rural area, 40% (71, 70 in TSA 6) of the awards were given within cities with a population greater than 14,000, and 60% (107) were awarded across the remainder of the TSA. Populated areas used in the 40% distribution were:

FEATURE_NAME
Albert Lea
Austin
Duluth
Faribault
Hibbing
Hutchinson
Mankato
New Ulm
North Mankato
Northfield
Owatonna
Red Wing
Rochester
Winona

8. Within the metro area the goal was to select 1,800 awards (60% of total). To achieve better geographic distribution across the metro area, of the 1,800 metro awards 40% (720) were awarded within the St. Paul and Minneapolis municipal boundaries. 60% (1080) were awarded across the remainder of the greater metro area within TSA 4. Note that all the St. Paul/Minneapolis area, and most of the remaining TSA 4 area falls into Priority Area 1.

GIS Selection Process

For all TSAs, when the award selection reached a point where the remaining applications had tied scores without enough remaining awards to go to all of them, the following GIS-based lottery selection process was applied:

- A numerical field (NUM) was populated with an increasing sequential number for each of the remaining records with a tied score, sorted by Object ID.
- The following process was then used to spatially select an evenly distributed subset of those records that would come as close as possible to achieving the remaining number of required awards:
    - \# tied records / \# needed awards ~ every N^{th} record to be selected (N was rounded to the nearest integer)
    - The function **MOD(NUM + 2N - 1, N) = 0** where NUM is the sequential numerical field and N is the Nth record was applied to the NUM field to select every N^{th} record in order sorted by OID.
    - Example:
        - There are 50 remaining awards to be given
        - There are 200 records with a tied score of 2 to distribute the remaining 50 awards to
        - N = 200/50 = 4
        - The function MOD(NUM + 8 - 1, 4) = 0 is applied to the NUM field to select every 4th record for a total of 50 records awarded
    - If N did not select the precise number of required records to fulfill the awards, the process was repeated on the remaining number that would be required, or if the difference was small enough (<=3), an additional few records were manually selected or removed randomly from the selection to equal the required number.

NON METRO – 1,200 Awarded Applications:

1) **TSA 5** received 133 awards. There were only 133 total applicants, so all applications in TSA 5 were awarded.
2) **TSA 1** received 178 awards. There were 10 applicants that had previously applied 4-5 times and were automatically awarded, leaving 168 to be awarded. There were 24 applicants with a score of 3, so all were awarded. There were 124 applicants with a score of 2, so all were awarded. The GIS-based lottery selection process was used to give the remaining 20 awards to the remaining 193 score 1 applicants.
3) **TSA 2** received 178 awards. There were 13 applicants that had previously applied 4-5 times and were automatically awarded, leaving 165 to be awarded. There were 35 applicants with a score of 3, so all were awarded. There were 124 applicants with a score of 2, so all were awarded. The GIS-based lottery selection process was used to give the remaining 130 awards to the 222 score 2 applicants.

4) **TSA 3**
   - Populated areas received 71 awards. There were 9 applicants that had previously applied 4-5 times and were automatically awarded, leaving 62 to be awarded. There were 51 applicants with a score of 3, so all were awarded. The GIS-based lottery selection process was used to give the remaining 11 awards to the 100 score 2 applicants.
   - Rural areas received 107 awards. There were 13 applicants that had previously applied 4-5 times and were automatically awarded, leaving 94 to be awarded. There were 73 applicants with a score of 3, so all were awarded. The GIS-based lottery selection process was used to give the remaining 21 awards to the 196 score 2 applicants.

5) **TSA 6**
   - Populated areas received 70 awards. There were 5 applicants that had previously applied 4-5 times and were automatically awarded, leaving 65 to be awarded. There were 21 applicants with a score of 3, so all were awarded. There were 41 applicants with a score of 2, so all were awarded. Three remaining random applicants with a score of 1 were awarded.
   - Rural areas received 107 awards. There were 14 applicants that had previously applied 4-5 times and were automatically awarded, leaving 93 to be awarded. There were 16 applicants with a score of 3, so all were awarded. The GIS-based lottery selection process was used to give the remaining 77 awards to the 96 score 2 applicants.

6) **TSA 7**
   - Populated areas received 71 awards. There were 13 applicants that had previously applied 4-5 times and were automatically awarded, leaving 58 to be awarded. The GIS-based lottery selection process was used to give the remaining 58 awards to the 92 score 3 applicants.
   - Rural areas received 107 awards. There were 13 applicants that had previously applied 4-5 times and were automatically awarded, leaving 94 to be awarded. There were 55 applicants with a score of 3, so all were awarded. The GIS-based lottery selection process was used to give the remaining 39 awards to the 260 score 2 applicants.

7) **TSA 1** received 178 awards. There were 23 applicants that had previously applied 4-5 times and were automatically awarded, leaving 155 to be awarded. There were 45 applicants with a score of 3, so all were awarded. The GIS-based lottery selection process was used to give the remaining 110 awards to the remaining 165 score 2 applicants.

METRO (TSA Area 4) – 1,800 Awarded Applications (720 in St. Paul/Minneapolis municipal boundaries, 1,080 in the greater metro area):

8) **The St. Paul/Minneapolis municipal area** received 720 awards. There were 45 applicants that had previously applied 4-5 times and were automatically awarded, leaving 675 to be awarded. There were 484 applicants with a score of 3, so all were awarded. The GIS-based lottery selection process was used to give the remaining 191 awards to the 745 score 2 applicants.

9) **The greater metro area** received 1,080 awards. There were 127 applicants that had previously applied 4-5 times and were automatically awarded, leaving 953 to be awarded. There were 523 applicants with a score of 3, so all were awarded. The GIS-based lottery selection process was used to give the remaining 430 awards to the 2,374 score 2 applicants.

Code to calculate sequential number field:

Pre-Logic Script Code:

```
rec=0
def autoIncrement():
 global rec
 pStart = 1
 pInterval = 1
 if (rec == 0):
  rec = pStart
 else:
  rec += pInterval
 return rec
```

NUM =

```
autoIncrement()
```

Lawns to Legumes Awarded Applications
June 2025

Technical Service Areas
Counties

Priority Area 1
PRIORITY
Priority 1
Priority 2

Priority Areas
Priority 1
Priority 2

Funded Y/N
Yes
No

BWSR
June 2025