

## UPPER BIG BLUE NRD

### SUMMARY OF MUNICIPAL ALLOCATION RULES

- Base Allocation
  - 250 gallons per capita per day
  - Based on most recent census, but can be adjusted as town grows
  - Does not change with other changes in allocation
  
- Plus
  - 48 inches per acre over 3 years on 1/3 on non-ag lands within corporate limits
    - Parks
    - Right of ways
    - Vacant properties
  
  - 48 inches per acre over 3 years on ag lands within corporate limits
    - Golf courses served by municipal system
    - Nurseries served by municipal system
    - Irrigated crop land served by municipal system
  
  - Both ag land and non-ag land allocations change with changes in allocations to all users (rural and urban)
  
- Industry
  - Treated separate even if served by municipal system
  - Separate allocation based on 100% of historic use
  
- Expansion
  - No moratorium on new or expanded uses
    - Unless part or all of the NRD is declared to be fully appropriated
  
  - Population
    - As population grows the allocation increase
      - 250 gallons per capita per day x new population number
  
  - Area
    - As town's area expands allocation increases because of increase in area
  
  - Industry
    - Treated separate - new industry starts with new and separate allocation based on estimate of use
  
- Physical Transfers
  - Permitted provided permit has been issued by the Department of Natural Resources pursuant to the Municipal and Rural Domestic Ground Water Transfer Act.
  - Municipal transfers within corporate limits not considered transfers under Upper Big Blue regulations

**Upper Big Blue NRD - SUMMARY OF ALLOCATION compared to ACTUAL WATER USE**  
**Based in Existing Upper Big Blue Groundwater Regulations**

City/Village	Aurora	Henderson	Stromsburg	Osceola	Fairmont	Gilfner	McCool JCT	Ulysses
Population	3,810	999	1,241	879	708	367	372	276
Total Area (acres)	1,354.5	397.6	646.5	615.0	376.0	120.0	331.0	120.0
Irrigated Crop Lands (golf course on City Water)	40.0							
Total Non-Ag Lands	1,314.5	397.6	646.5	615.0	376.0	120.0	331.0	120.0
1/3 of Non-Ag Lands	438.2	132.5	215.5	205.0	125.3	40.0	110.3	40.0
Actual Water Use (gallons)								
2001	408,132,600	176,217,160	88,973,000	126,363,365	59,797,000	49,000,000	25,189,111	29,000,000
2002	428,826,800	179,602,800	92,681,000	126,491,115	47,324,000	49,000,000	24,114,030	30,000,000
2003	365,471,800	157,962,900	90,503,000	120,709,880	37,411,000	39,000,000	25,279,040	30,000,000
Actual Water Use (gallons) Total	1,202,431,200	513,782,860	272,157,000	373,564,360	144,532,000	137,000,000	74,582,181	89,000,000
Allocation for 3 years (if there had been an Allocation)								
250 gallons per capita for 3 years	1,043,940,000	273,726,000	340,034,000	240,846,000	193,992,000	100,558,000	101,928,000	75,624,000
Gallons for 1/3 of Non-Ag lands for 3 years	571,146,374	172,721,163	280,880,976	267,195,360	163,358,464	52,135,680	143,807,584	52,135,680
Gallons for Ag lands for 3 years	52,135,680							
Exempt Fire Protection, Water & Sewer Maint.								
Total Allocation	1,667,222,054	446,447,163	620,914,976	508,041,360	357,350,464	152,693,680	245,735,584	127,759,680
Total Gallons Allocated		408	457	528	461	380	603	423
Gallons per capita per day Allocation								
Actual Water Use								
Total Gallons Used	1,202,431,200	513,782,860	272,157,000	373,564,360	144,532,000	137,000,000	74,582,181	89,000,000
Gallons per capita per day Actual Use	288	470	200	388	186	341	183	294
Population Density per Acre	2.81	2.51	1.92	1.43	1.88	3.06	1.12	2.30
Water Meters	Meters	No Meters	Meters	No Meters	Meters installed in May 2002	No Meters	Meters	No Meters
Comments					231 gals per Capita per day in 2001	Installing Meters in 2004		

Upper Big Blue NRD - SUMMARY OF ALLOCATION  
Based in Existing Upper Big Blue Groundwater Regulations

City/Village	Aurora	Henderson	Stromsburg	Osceola	Fairmont	Giltner	McCool JCT	Ulysses
Population	3,810	999	1,241	879	708	367	372	276
Total Area (acres)	1,354.5	397.6	646.5	615.0	376.0	120.0	331.0	120.0
<b>Allocation for 3 years (if there had been an Allocation)</b>								
250 gallons per capita for 3 years	1,043,940,000	273,726,000	340,034,000	240,846,000	193,992,000	100,558,000	101,928,000	75,624,000
Gallons for 1/3 of Non-Ag lands for 3 years	571,146,374	172,721,163	280,880,976	267,195,360	163,358,464	52,135,680	143,807,584	52,135,680
Gallons for Ag lands for 3 years	52,135,680							
Exempt Fire Protection, Water & Sewer Maint.								
<b>Total Allocation</b>								
Total Gallons Allocated	1,667,222,054	446,447,163	620,914,976	508,041,360	357,350,464	152,693,680	245,735,584	127,759,680
<b>Gallons per capita per day Allocation</b>	400	408	457	528	461	380	603	423

	Aurora	Henderson	Stromsburg	Osceola	Fairmont	Giltner	McCool JCT	Ulysses
<b>WHAT IF ????</b>								
<i>For Water Task Force Municipal Sub Committee Discussions 14 July 2005</i>								
<b>WHAT IF ????</b>								
<b>If Allocation was only based on 16 inches per acre within City Limits</b>								
Total Acre Inches per year	21,672.0	6,361.6	10,344.0	9,840.0	6,016.0	1,920.0	5,296.0	1,920.0
Total Acre Inches for 3 year Allocation	65,016.0	19,084.8	31,032.0	29,520.0	18,048.0	5,760.0	15,888.0	5,760.0
Total Gallons Allocated 16" Base	1,765,444,464	518,228,659	842,642,928	801,586,080	490,075,392	156,407,040	431,422,752	156,407,040
<b>Gallons per capita per day Allocation 16"</b>	423	474	620	833	632	389	1,059	518
<b>13 inches per acre within City Limits</b>								
Total Gallons Allocated 13" Base	1,434,423,627	421,060,786	684,647,379	651,288,690	398,186,256	127,080,720	350,530,986	127,080,720
<b>Gallons per capita per day Allocation 13"</b>	344	385	504	677	514	316	861	420
<b>Gallons per capita per day Actual Use</b>	288	470	200	388	186	341	183	294
<b>Population Density per Acre</b>	2.81	2.51	1.92	1.43	1.88	3.06	1.12	2.30

UPPER BIG BLUE NRD

**MUNICIPAL AVERAGE ANNUAL WATER USE - PER ACRE BASIS**

	Aurora	Henderson	Stromsburg	Osceola	Fairmont	Gilmer	McCool, J.C.T.	Ulysses	Total
2001 thru 2003 Data	3,810	999	1,241	879	708	372	367	276	8,652
Population	400,810,400	171,260,953	90,719,000	124,521,453	48,177,333	24,860,727	29,666,667	29,666,667	935,683,200
Average Annual Water Use - Gallons	288	470	200	388	186	183	341	294	296
Avg Gallons per Capita per Day	1,230.0	525.6	278.4	382.1	147.9	76.3	140.1	91.0	2,872
Avg Annual Water Use - Acre Feet	1,354.5	397.6	646.5	615.0	376.0	331.0	120.0	120.0	3,961
Corporate Area - Acres	0.91	1.32	0.43	0.62	0.39	0.23	1.17	0.76	0.73
Avg Annual Water Use per Acre - Ac. Ft.	10.9	15.9	5.2	7.5	4.7	2.8	14.0	9.1	8.7
Avg Annual Water Use per Acre - Ac. In.									
	Meters	No Meters	Meters	No Meters	Meters installed in May 2002	No Meters	Meters	No Meters	

Average

**Upper Big Blue NRD**

2001 - 2003 Crop Irrigation from Water pumping reports		
	Acres	Acres
Corn - Center Pivots	10.7	223
Soybeans - Center Pivots	9.4	96
Corn - Gravity Irrigation	16.3	28
Soybeans - Gravity Irrigation	12.9	19

April 1 - Sept 1 Rainfall	2001	2002	2003
Aurora	15.2	14.3	19.2
Geneva	18.5	13.5	13.2
Osceola	16.5	14.7	13.4
Seward	17.0	18.0	16.1
York	17.7	15.1	11.9

Average Rainfall	2001 - 2003	1949 - 2003	Difference from 1949 - 2003
Aurora	27.6	27.5	0.14
Geneva	27.1	28.8	(1.64)
Osceola	24.1	27.0	(2.84)
Seward	26.2	27.2	(0.97)
York	23.1	28.1	(4.95)