

Sustainable Water Management Initiative
Public Information Session

Presentation Title: Streamflow Criteria

Date of Presentation: 17 February 2012

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Seasonal Streamflow Criteria

- Principles
- Development of criteria (Preliminary USGS)
- Development of criteria (Final USGS)
- Comparison to existing use
- Draft recommendation

Stream Flow Criteria Development Principles

- Seasonality protects aspects of the natural hydrograph
- Summer period represents
 - Highest Demand
 - Lowest Availability
- August percent alteration is highest
- Water “available” in other seasons

Preliminary USGS Report

August Stream Flow Criteria Alteration of the Net

Flow Level	1	2	3	4	5
Preliminary Report	5	15	35	65	>65

These numbers represent the amount of flow alteration (Percent net alteration of the August median flows due to withdrawals and returns) that would result in the change of a biological category under a reference impervious surface condition of 1%

Seasonal Streamflow Criteria

		Seasonal Streamflow Criteria
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow
		Aug
1	0 to < 5%	5%
2	5 to <15%	15%
3	15 to < 35%	35%
4	35 to <65%	Feasible mitigation and improvement
5	65% or greater	

Seasonal Streamflow Criteria

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 5%	5%	5%	5%	5%
2	5 to < 15%	15%	5%	5%	5%
3	15 to < 35%	35%	15%	15%	15%
4	35 to < 65%	Feasible mitigation and improvement			
5	65% or greater				

Maximum Existing Flow Alteration

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 5%	5%	4%	2%	2%
2	5 to <15%	15%			
3	15 to < 35%	35%			
4	35 to <65%	Feasible mitigation and improvement			
5	65% or greater				

Maximum Existing Flow Alteration

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 5%	5%	4%	2%	2%
2	5 to <15%	15%	8%	3%	2%
3	15 to < 35%	35%			
4	35 to <65%	Feasible mitigation and improvement			
5	65% or greater				

Maximum Existing Flow Alteration

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 5%	5%	4%	2%	2%
2	5 to <15%	15%	8%	3%	2%
3	15 to < 35%	35%	20%	7%	3%
4	35 to <65%	Feasible mitigation and improvement			
5	65% or greater				

Seasonal Streamflow Criteria

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 5%	5%	5%	5%	5%
2	5 to <15%	15%	5%	5%	5%
3	15 to < 35%	35%	15%	15%	15%
4	35 to <65%	Feasible mitigation and improvement			
5	65% or greater				

3% basins > seasonal percents

Final USGS Report

August Stream Flow Criteria

Groundwater Alteration

Flow Level

1

2

3

4

5

Final

3

10

25

55

>55

These numbers represent the amount of flow alteration (Percent alteration of the August median flows due to groundwater withdrawals) that would result in the change of a biological category under a reference impervious surface condition of 1%

Seasonal Streamflow Criteria

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 3%	3%			
2	3 to <10%	10%			
3	10 to < 25%	25%			
4	25 to <55%	Feasible mitigation and improvement			
5	55% or greater				

Seasonal Streamflow Criteria

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 3%	3%	3%	3%	3%
2	3 to <10%	10%	3%	3%	3%
3	10 to < 25%	25%	10%	10%	10%
4	25 to <55%	Feasible mitigation and improvement			
5	55% or greater				
Examine Existing Seasonal Use					

Maximum Existing Flow Alteration

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 3%	3%	2%	1%	2%
2	3 to <10%	10%	8%	4%	3%
3	10 to < 25%	25%	17%	9%	8%
4	25 to <55%	Feasible mitigation and improvement			
5	55% or greater				

Seasonal Streamflow Criteria

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 3%	3%	3%	3%	3%
2	3 to <10%	10%	3%	3%	3%
3	10 to < 25%	25%	10%	10%	10%
4	25 to <55%	Feasible mitigation and improvement			
5	55% or greater				

1) 15% of basins > seasonal percents

Draft Recommendation: Seasonal Streamflow Criteria

		Seasonal Streamflow Criteria			
Flow Levels	August Flow Level (Range of % Alteration due to groundwater withdrawal)	% allowable alteration of estimated unimpacted median flow			
		Aug	Oct	Jan	April
1	0 to < 3%	3%	3%	3%	3%
2	3 to <10%	10%	5%	3%	3%
3	10 to < 25%	25%	15%	10%	10%
4	25 to <55%	Feasible mitigation and improvement			
5	55% or greater				

- 1) More consistent with current water use patterns
- 2) Still protective of natural hydrograph
- 3) 4% of basins > seasonal percents