

PLANNING AGENCY DISCUSSION TOPICS

JULY 17, 2006 MEETING

Wetland and Stream Classification, Rating System and Associated Buffers

Should wetland classification and rating system be revised?

Status: City's current categories "Significant" and "Important" designations are based on the outdated 1983 King County three-tier classification system.

Best Available Science (BAS) Recommendation: Adopt Ecology's four-tier classification and rating system which is based on BAS. Note: Changing the ratings system would not require that all wetlands be re-rated, rather they would be rated under the new Ecology system as needed.

Classification System

- Differentiates wetlands based on:
 - Functions
 - Rarity
 - Sensitivity to disturbance
 - Irreplaceability
- Wetlands are placed in one of four categories, according to their functions and values:
 - **Category I:** wetlands with unique or rare wetland type, are more sensitive to disturbance than most wetlands, are relatively undisturbed and contain some ecological attributes that are impossible to replace within a human lifetime, or provide a very high level of functions. Wetlands scoring 70 points or more (out of 100) on the on the questions related to functions.
 - **Category II:** wetlands rare plant species; or having moderately high level of ecological functions that may not be adequately replicated; or wetlands scoring between 51-69 points (out of 100) on the questions related to the functions. Includes estuarine wetlands <1 acre, or disturbed estuarine wetlands >1 acre; and an interdunal wetlands >1 acre.
 - **Category III:** wetlands with a moderate level of functions and scoring between 30-50 points using the DOE rating system. Includes interdunal wetlands between 0.1 and 1 acre in size. Category III wetlands often disturbed, less diverse or more isolated.

- **Category IV:** hydrologically isolated wetlands ≤1 ac with 1 wetland class and, dominated by non-native monotypic vegetation; or ≤2 ac with one class and >90% cover of non-native plants. Category IV wetlands have the lowest levels of functions (scores less than 30 points) and are often heavily disturbed.

Rating System

- Developed in early 90s, updated 2004
- 4 Categories (I to IV) reflecting the level of protection and management needed
- Used to prescribe criteria for avoidance, buffer widths, and mitigation ratios
- Qualifies as “best available science”
- Assesses wetland functions in three main groups:
 - Habitat (for the many wetland-dependent plant and animal species)
 - Water quality improvement (removing sediments, nutrients, toxicants)
 - Hydrologic functions (reducing flooding & erosion, recharging groundwater, supporting baseflow).
- Using the rating system, an overall score and category for the wetland is determined.
- Rating system provides individual scores for the wetland’s water quality, hydrological, and habitat functions. Scores are used to determine the wetlands classification and the minimum buffers.

Planning Agency Recommendation:

Council Environment Committee Recommendation:

City Council Recommendation:

Should wetland buffers be revised?

Status: The current wetland buffer widths cannot meet Best Available Science (BAS) because they are based on a classification system (outdated King County three-tier system). Additionally, the buffer widths are below those recommended by Ecology.

BAS Recommendation: Ecology provides several alternatives for establishing buffers as described below (Tables 3-5). Based on the findings of the critical areas inventory, Ecology’s Alternative 3 for buffer widths would provide the City with the most flexibility.

Alternative 1 – based only on rating; simplest but most restrictive.

Table 3. Alternative 1 Buffer Widths based on Wetland Category.

Category of Wetland	Width of Buffer (feet)
IV	50
III	150
II	300
I	300

April 2005, Appendix 8C.2.3, Ecology Publication #05-06-008

Alternative 2 – based on rating and intensity of impacts from proposed activity.

Table 4. Alternative 2 Buffer Widths based on Wetland Category and Intensity of Land Use Impacts.

Category of Wetland	Low Impact	Moderate Impact	High Impact
IV	25	40	50
III	75	110	150
II	150	225	300
I	150	225	300

Alternative 3 – based on rating, intensity of impacts, and functions or sensitivity of wetland to disturbance.

Table 5. Alternative 3 Buffer Widths based on Wetland Category, Intensity of Land Use Impacts and Degree of Wetland Function or Special Characteristics.

Category IV Wetlands	Width of Buffer (feet)
Low functions	25-50
Category III Wetlands	
Moderate Habitat function	75-150
None of the above characteristic	40-80
Category II Wetlands	
High Habitat function	150-300
Moderate Habitat function	75-150
Estuarine, Interdunal*	75-150
High Water Quality function and Low Habitat function	50-100
None of the above characteristics	50-100
Category I Wetlands	
Natural Heritage Wetlands, Bogs*	125-250
Estuarine, Wetlands in Coastal Lagoons	100-200
High Habitat function	150-300
Moderate Habitat function	75-150
High Water Quality function and Low Habitat function	50-100
None of the above characteristics	50-100

*There are no interdunal wetlands in the City of Des Moines; bogs are extremely unlikely.

Planning Agency Recommendation:

Council Environment Committee Recommendation:

City Council Recommendation:

Should stream categorization system be revised?

Status: City's current stream categorization system uses "Significant" and "Important" ratings based on the State Forest Practices Board water typing system (Types 1-5, WAC 222.16.031).

BAS Recommendation: Adopt the State's permanent typing system that is based on shorelines of the State, fish presence, and flow regimes (WAC 222.16.030).

- State has established an interim system (Table 1) that will be used until the habitat mapping process used to classify the streams has been completed.

Table 1. Conversion between State interim and permanent water typing systems.

Permanent Water Type	Interim Water Type
Type S – shorelines of the State	Type 1
Type F -- have a high fish, wildlife, or human use	Type 2, 3
Type Np – perennial, nonfish habitat	Type 4
Type Ns -- Seasonal, nonfish habitat, surface flow is not present for at least some portion of the year and are not located downstream from any Type 4 Water stream reach	Type 5

- All streams in the City of Des Moines have been mapped and classified (Table 2).

Table 2. City of Des Moines streams as mapped by the State Forest Practices Board.

Stream (North to South)	Permanent DNR Stream Type¹
Des Moines Creek	F
Massey Creek	F
Main Stem	F
South Fork	F
North Fork (Barnes Creek)	U (stream type unknown, likely F and N reaches)
Unnamed Creek 1 (Zenith)	U (stream not mapped in FPARS database, likely N)
McSorley Creek	
Main Stem	F
Small Tributaries	N
South Fork	F, U
North Fork	N, U
Unnamed Creek 2	N
Unnamed Creek 3	N
Woodmont Creek	
Lower Creek	F
Upper Creek	N
Unnamed Creek 4	U
Redondo Creek	
Main Stem	F, N
Tributaries	N, U
Cold Creek	
Main Stem	F
Tributary	U

¹ Stream types taken from State Forest Practices Board on-line mapper on the DNR website, <http://www3.wadnr.gov/dnrapp5/website/fpars/viewer.htm>.

Planning Agency Recommendation:

Council Environment Committee Recommendation:

City Council Recommendation:

Should stream buffers be revised?

Status: Existing stream protection provided by the DMMC is in two categories: “Significant” streams (Types 1, 2, 3) have 100-ft buffers, while “Important” streams (Type 4, 5) have 35-ft buffers. Under the Forest Practices Board stream typing system, “Significant” corresponds to Types S and F, and “Important” corresponds to Types Np and Ni. Mapped Type U streams are most likely non-fish bearing, and would have a 35-ft buffer (Table 6).

Table 6. City of Des Moines streams as mapped by the State Forest Practices Board.

Stream (North to South)	Permanent DNR Stream Type	Current Buffer (ft)
Des Moines Creek	F	100
Massey Creek		
Main Stem	F, N	100 (type F research), 35 (type N reach)
South Fork	F, N	
North Fork (Barnes Creek)	U	100, 35 likely 35
Unnamed Creek 1 (Zenith)	N	35
McSorley Creek		
Main Stem	F	100
Small Tributaries	N	35
South Fork	F	100
North Fork	N, U	35, likely 35
Unnamed Creek 2	N	35
Unnamed Creek 3	N	35
Woodmont Creek		
Lower Creek	F	100
Upper Creek	N	35
Unnamed Creek 4	U	likely 35
Redondo Creek		
Main Stem	F	100
Tributaries	N, U	35, likely 35
Cold Creek		
Mainstem	F	100
Tributary	U	likely 35

Because streams are not regulated technically as critical areas, State BAS guidance (CTED et al. 2003) does not specifically address buffer function and effective widths. However, King County reviewed this issue during their 2004 CAO update (King County, 2004). Buffer functions considered in that document included sediment removal/erosion control, pollutant removal, large woody debris recruitment, water temperature protection, wildlife habitat, microclimate protection, organic litter production, and bank stabilization.

The buffers adopted by King County were dependent on stream type, urban vs. rural area, and whether a specific stream was considered highly functioning and therefore eligible for additional protections. King County’s landscape is developed far less than

the City of Des Moines', with large areas of completely undeveloped land, therefore only the urban buffer requirements are comparable to the City (Table 7).

Table 7. King County CAO Aquatic Environments (Stream) Buffers for Urban Environments.

Stream Type	Buffer, standard (ft)	Buffer, high quality (ft)
S	115	165
F	115	165
N	65	65
O¹	25	25

¹ Aquatic environment with no surface water connection to fish bearing streams.

BAS Recommendation: The King County stream buffers would be reasonable for the City to adopt. The current City stream buffer widths are below or at the low-end of effective widths for various buffer functions as reviewed by King County during its Critical Areas Ordinance update (King County 2004), and below the buffer widths adopted by the County for urban areas. However, most streams within the City flow through ravines or below steep slopes, and include habitat and/or wetlands areas, providing them with additional critical areas protections. The steep topography surrounding many of the streams has many developments more than 100 ft away. Large reaches of Des Moines Creek, Massey and Barnes Creeks, McSorley Creek, Woodmont Creek, and Redondo Creek are located within public parks that provide additional protection from encroachment. In the remaining, built-out areas of the City, many stream buffer areas outside of the ravines and parks have already been developed to the edge or inside of the buffer.

Planning Agency Recommendation:

Council Environment Committee Recommendation:

City Council Recommendation: