



February 20, 2016

Doug Smith, Wasatch County Planner
Wasatch County Planning Office
55 S 500 East
Heber, UT 84032

RE: Wasatch Springs Wetland Setbacks

Dear Doug,

Wasatch Springs Conditional Use request to modify wetland setbacks is a very complex issue. Wetlands are among the most valuable and complex ecosystems on earth. Wetlands such as these in the Wasatch Springs project can provide many functions and values, including flood control, ground water recharge and discharge, water quality improvement, wildlife habitat, recreational opportunities, and aesthetic values. Wetlands are constantly adjusting to disturbances occurring within them and within the surrounding landscape. It is important to recognize to what extent various disturbances could affect these wetlands when assessing the disturbances and impacts.

One method of reducing the impacts of development upon adjacent wetlands is to provide a buffer around the wetland. It is for this reason that the County Code includes setback distances for development adjacent to wetlands.

There are many things that could degrade the Wasatch Springs wetlands including changes in water quality, quantity, and flow rates; increases in pollutant inputs; and changes in species composition as a result of introduction of non-native species and disturbance. The major pollutants associated with development are sediment, nutrients, road salts, heavy metals, hydrocarbons, and bacteria, all of which can have negative impacts to wetlands. Wetland setbacks or buffer strips provide a level of defense against actions that can degrade wetlands.

It is not only important to look at impacts during construction, but also longer term impacts to wetlands over time. Wetland setbacks can have a large influence on the amount and types of disturbance that occur to wetlands. So, the fact that Wasatch Springs is requesting a conditional use to modify the setback requirements is concerning.

The importance of wetland buffer strips cannot be underestimated:

1. Wetland buffers help minimize the amount of rainfall and snowmelt and types of pollutants that can directly impact wetlands. As roads, buildings, and parking lots are constructed, the amount of impervious surface increases. Impervious surfaces prevent rainfall from percolating into the soil. Rainfall and snowmelt carry sediments; organic matter; pet wastes; pesticides and fertilizers from lawns and gardens, hydrocarbons; road salts; and debris into wetlands. Without a buffer strip the wetlands will be directly impacted.
2. Wetland buffers can help minimize pollution from road maintenance - The maintenance and use of roads contribute many chemicals into surrounding wetlands. Rock salt used for deicing roads can damage or kill vegetation and aquatic life.
3. Wetland buffers help reduce water temperatures in runoff. As runoff moves over warmed impervious surfaces, the water temperature rises. Increased water temperature can stress fragile wetland ecosystems. Wetland buffers provide an area where water can dissipate into the ground or water temperatures can be reduced prior to discharge into wetlands.

4. Wetland buffers help regulate the modified hydrology into wetlands. Significant increases in storm water peak flow rates, and longer-term changes in wetland hydrology, as a result of storm water discharge may adversely affect wetlands.
5. Wetland buffers help reduce the risk of nonnative vegetation and invasive weeds proliferation. As a result of disturbance and habitat degradation, wetlands can be invaded by aggressive, highly-tolerant, non-native vegetation. The wetland buffer is there as a barrier to accidental disturbance to the wetlands.
6. Wetland buffers also provide important habitat. The vegetated uplands adjacent to wetlands are considered to be one of the richest zones for aquatic organisms, mammals, and birds. Wetland buffers provide essential habitat for wetland-associated species.

Appropriate buffer widths vary according to the desired buffer functions. Temperature moderation, for example, will require smaller buffer widths than some wildlife habitat or water quality functions. Also, buffer effectiveness increases with buffer width. As buffer width increases, the effectiveness of removing sediments, nutrients, bacteria, and other pollutants from surface water runoff increases. One study found that for incrementally greater sediment removal efficiency (e.g., from 90 to 95%), disproportionately larger buffer width increases are required (e.g., from 100 to 200 feet).

As buffer width increases, direct human impacts, such as dumped debris, cut vegetation, fill areas, and trampled vegetation will decrease. As buffer width increases, the numbers and types of wetland dependent and wetland-related wildlife, that can depend on the wetland and buffer for essential life needs, increases.

In conclusion, minimizing the wetland setback in the Wasatch Springs development will most probably have negative impacts to the adjacent wetlands. Additionally, the number points where the development will come in contact with the wetlands is increased by this proposal. These points will provide a direct conduit for pollution to enter the wetlands in the future. Wetland setbacks would minimize the risk of these types of impacts.

If you have any questions please feel free to contact me at 801-580-9692.

Sincerely,



Alane E. Boyd, P.E.
Principal

Cc: Sandy Wingert, Division of Water Quality
Luke Robinson, Wasatch County Planning