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# memorandum

date January 31, 2018  
to Debbie Bent, City of Kenmore  
from Teresa Vanderburg and Adam Merrill, ESA  
subject St. Edward State Park Field Improvements: Critical Areas Variance Documentation

The City of Kenmore proposes improvements to the existing grass ballfield area (approximately 4 acres) in St. Edward State Park. Project elements include installation of a synthetic turf field, a subsurface stormwater system, and other related structures (such as a perimeter walking path, dugouts, and backstops). As documented in the Critical Areas Study for the project (ESA, 2018), the existing ballfield area includes a Class 2 wetland to the east and south. The wetland serves as the headwaters of a seasonal stream (identified as Stream #0226) that originates south of the ballfield and flows through the park and ultimately into Lake Washington. WDFW indicates that the stream potentially provides habitat for resident salmonids (e.g., trout) starting at a point approximately 400 feet south (downstream) of the existing ballfield (C. Costello, May 8, 2017, personal communication). Use of the stream by anadromous fish appears to be precluded by the steep gradient (over 16 percent) between the lake shore and the ballfield area (The Watershed Company, 2016).

Pursuant to Kenmore Municipal Code (KMC) Section 18.55.330, Class 2 wetlands receive a standard buffer of 100 feet. A portion of both the Class 2 wetland and its buffer extend into the existing mowed grass ballfield area; the eastern edge of the existing mowed ballfield is classified as emergent wetland. The proposed ballfield improvements have been moved outside of the delineated wetland area; there will be no direct wetland impacts such as grading or fill. However, installation of the synthetic turf fields, walking path, dug out and back stop would cover 37,932 square feet of wetland buffer, which currently consists of mowed grasses and herbs. In addition, a fill slope around the perimeter of the constructed field would be required; this area (4,785 square feet) would impact the buffer but would be restored after construction. The total buffer impact area is approximately 42,700 square feet (0.98 acre). To mitigate for the loss of the mowed buffer habitat, the City proposes to enhance approximately 28,000 square feet of wetland and 33,600 square feet of buffer, for a total enhancement area of approximately 1.4 acres (ESA, 2018).

The standard 100-foot wetland buffer would be narrowed by approximately 90 percent, which is not allowed outright in the KMC. Therefore, a variance would be required to construct the project. KMC 18.55.170 states that variances from buffer width and building setback standards may be authorized, provided that the applicant demonstrates compliance with the six criteria listed in KMC Section 18.55.170(C). The criteria and responses are detailed in this memorandum. Responses have been prepared by ESA with assistance from City staff.

- 1) *There are special circumstances applicable to the subject property or to the intended use such as shape, topography, location or surroundings that do not apply generally to other properties and which support the granting of a variance from the buffer width requirements.*

Response: There are two special circumstances applicable to the subject property or ballfield use and described herein. The first is the location of the existing historic ballfield in flat topography at the top of the watershed for a small stream. The flat topography and long-term recreational use of the existing ballfield have created saturated soils conditions due to compaction and lack of adequate drainage. Water stands on the surface of the grassy field throughout the wet season months. Wetland characteristics occur on the east side of the existing ballfield and include hydric soils, wetland hydrology, and the dominance of wetland plants. Wetland area on the ballfield has been increasing over time. The original wetland delineation conducted in 2004 by Adolphson Associates, Inc. identified 0.16 acre of degraded wetland within the existing ballfield. When the delineation was re-evaluated in 2016, the wetland area had increased to 0.40 acre of wetland within the existing field (ESA, 2018). Washington Department of Ecology has visited the site several times and Ecology staff have approved the latest delineated wetland boundary (Ecology, 2017). To avoid impacts to the wetland, the latest proposed ballfield design is positioned as far to the west as possible, but still within the general footprint of the existing field. The location of the proposed ballfield improvements on this flat, poorly drained field site is the first special circumstance.

The second special circumstance is the requirement that the historic cultural landscape in St. Edward State Park be preserved. This type of historic preservation requirement does not generally apply to other properties within the City of Kenmore. The St. Edward Seminary building is listed on both the *National Register for Historic Places* and the *State of Washington Historic Register*. The ballfield is identified as a contributing historic feature to the St. Edward Seminary Historic District in a Cultural Landscape Inventory prepared by the National Park Service (2006), and continued use of the ballfield for active recreation is identified as a specific treatment recommendation. For these reasons, the location of the ballfield must remain in its historic location on the football field terrace as described in the Cultural Landscape Inventory. Relocating the ballfield out of the terrace area could adversely affect the District's historic designation. The continued use of the fields for sports is also consistent with historic uses.

The Cultural Landscape Inventory (NPS, 2006) states that contemporary improvements may be allowed in a historic landscape, provided, however, that the improvements do not diminish the integrity of significant cultural or natural features. The City proposes several measures to maintain the integrity of the St. Edward State Park cultural landscape, including:

- Planting a mixture of native conifer trees and shrubs along a portion of the north side of the field to partially screen the ballfields, while preserving historic views of the seminary building from the entrance driveway.
- Preserving and protecting existing large mature conifers on the west side of the ballfield. Using an artificial turf color (such as muted green) that blends in with the surrounding forest. The current visual appearance of the field is informally maintained grass. The artificial turf field will visually appear like well-maintained grass. However, some views of the turf field will be screened from view by trees.
- Preserving as many existing mature trees as possible surrounding the ballfield.
- Ten black cottonwood trees and one big-leaf maple on the south side of the ballfield are recommended for removal as they may pose a safety hazard to field users. Four trees within critical areas identified by a certified arborist are proposed for removal as a result of the project. Three of these trees are located

within the wetland buffer and one tree is located in the wetland. These four trees will be snagged and left as wildlife habitat features. The City proposes to mitigate for the removed trees at a 3:1 replacement ratio.

- Painting the light poles, bleachers, and backstops in black or brown to blend in with the surrounding forest.
- Reducing the height of the backstops from 28 feet to 24 feet to preserve views to the seminary building from the entrance driveway and considering alternative backstop materials, such as netting, that could minimize the appearance of the backstops.
- In coordination with Washington State Parks, conducting restoration actions activities at three of the other historic resource areas within the park: Nun's Garden, The Orchard, and The Grotto.

The desire to retain the historic integrity of the sports field terrace is also balanced with compliance with current critical area regulations. The proposed ballfield improvements will also maintain the integrity of the Park's natural features. The proposed improvement project avoids direct wetland impacts by shifting the renovated field outside of the wetland, while still remaining within the existing ballfield footprint. Wetland buffer impacts will be limited to existing mowed grass areas. After construction, the wetland and remaining buffer areas within the ballfield vicinity will be enhanced with native plantings, fenced with split-rail fencing, and set aside as mitigation areas.

- 2) *Such variance is necessary for the preservation and enjoyment of a substantial property right or use possessed by other similarly situated property but which because of special circumstances is denied to the property in question.*

Response: Preservation and enjoyment of recreational use would be diminished at the ballfield with strict adherence to the buffer requirements. Recreational use and public enjoyment is a substantial property right or use for the ballfields at St. Edward State Park. Specific treatment recommendations for the ballfield in the historic Cultural Landscape Inventory (NPS, 2006) include "continue[d] use of historic sports field for active recreation." The St. Edward State Park Management Plan (WSPRC, 2008) supports continuing ballfield use.

The existing ballfield has fallen into disrepair and needs improvement for continued and expanded use by organized sports teams and informal recreational users. In particular, the existing natural turf is in poor condition and portions of the field are saturated with water during the rainy season. Synthetic turf is proposed as it expands the playing season to year-round, addresses drainage issues, requires less maintenance compared to an improved grass field, and does not require a "rest period" between games to ensure field quality. Many other sports fields throughout the region have recently been converted from natural to synthetic turf for these reasons. Strict application of the wetland buffer requirements of KMC Section 18.55.330 would deny the proposal to convert the St. Edward State Park ballfield to an artificial turf field of sufficient size for use by youth sports teams. As the existing ballfield already is located in the wetland buffer, any improvements to the field to keep it viable for active recreation necessitate continued buffer encroachment.

The special circumstances are the location of the wetland and its buffer within the footprint of the existing ballfield which results in site constraints for the new proposed ballfield. No other site design with lesser impacts to the buffer is possible while still attaining the dimensions and standards of the desired youth sports field.

- 3) *The granting of such buffer width variance will not be materially detrimental to the public welfare or injurious to the property or improvement.*

Response: A variance from the wetland buffer width requirement will not be materially detrimental to the public welfare or injurious to the property. The proposal retains and improves the ballfield for public recreational use, shifts the ballfield outside of the wetland, and provides mitigation that will provide overall net improvement to the ecological condition of the wetland and its buffer. All of these actions simultaneously preserve the integrity of the ballfield's place in the historic cultural landscape while maintaining environmental quality and continuing recreational use. The City of Kenmore has entered into a Memorandum of Understanding (MOU) agreement with State Parks to prepare a long term solution for the ballfield (likely a 20-year lease) whereby the City improves the ballfields and manages and maintains them for continued public use. A recital in the MOU reads "State Parks recognizes that improvements to the ballfields, especially to the drainage system, will make them more useful for visitors."

Materially detrimental to the public welfare means damaging or having great consequences. In this context, materially detrimental refers to the project effects that could result in physical damage of great consequence to the public as it relates to granting the buffer width variance. Some public comments to the Notice of Application (NOA) and SEPA checklist have asserted that the project would harm the public welfare by encroaching on the wetland buffer and adversely affecting wetland functions, downstream water quality, and/or wildlife habitat. Other public comments have suggested that the project would benefit the general public welfare by increasing the recreational uses of the field, while still protecting the wetland from direct impacts and providing significant wetland and buffer enhancements. The proposal will result in a loss of wetland buffer area. However, given that the existing condition of the wetland and its buffer is degraded and routinely mowed throughout the year, the habitat functions of these critical areas is low. Further water quality improvement and protection functions of the wetland and buffer are also low, since water runoff from the muddy field now drains directly to the mowed wetland. The proposed ballfield development will install an improved drainage system that will curtail the current water ponding and muddy conditions, as well as install a water quality treatment manhole to remove pollutants, sediment and nutrients. Mitigation for the project includes 1.4 acres of wetland and buffer enhancements. Considering the sum total of mitigation measures proposed by the City, together with the cessation of mowing in the wetland itself and remaining buffer, the benefits outweigh the project impacts and provide an overall net improvement to the ecological condition of the wetland and its buffer.

The ballfield design plans by the City's engineer (Perteet, 2018) and supporting technical reports have been recently updated to respond to public comments, to respond to State Park comments and include water quality monitoring, to meet other city standards and regulations, to increase the proposed mitigation area and to protect trees except those as deemed as hazard trees by a certified arborist.

- 4) *The granting of the buffer width variance will not significantly impact the subject critical area.*

Response: The wetland will not be directly impacted by the proposed field improvements; the project will shift the ballfield outside of the wetland. The area of wetland buffer that will be impacted is mowed field and degraded, and provides minimal ecological functions or protection to the wetland (see discussion below). Four trees within critical areas identified by a certified arborist are proposed for removal as a result of the project. Three of these trees are located within the wetland buffer and one tree is located in the wetland. These four trees

will be snagged and left as wildlife habitat features. The City proposes to mitigate for the removed trees at a 3:1 replacement ratio.

Total impacts to the wetland buffer are approximately 42,700 square feet (0.98 acre). As mitigation for the wetland buffer impacts, the City proposes to enhance approximately 1.4 acres of existing, degraded wetland and buffer habitat. Existing conditions, project impacts and proposed mitigation areas are summarized in Tables 1 and 2 below. All areas are approximate but based upon the current project design and Draft Mitigation Plan. Invasive species, such as Himalayan blackberry and English ivy would be removed from buffer areas south of the existing ballfield, and the area replanted with native plants. Existing degraded wetland areas will be enhanced with native emergent and shrub plantings. The plantings will be monitored by the City for 10 years, and the mitigation area will be protected in perpetuity. Overall, the proposed mitigation for the variance will provide a greater diversity and density of native plants and increase the habitat value for native wildlife species within the wetland, as compared to existing conditions or if a standard buffer without mitigation was provided. Lost buffer functions related to water quality improvement will be replaced by the stormwater and water quality system.

**Table 1. Existing Conditions on Ballfield Site**

Existing Conditions	
Wetland – degraded, mowed	17,600 sf
Buffer – mowed field	53,700 sf

**Table 2. Proposed Project Impacts and Mitigation Summary**

Proposed Project			
Impact Type	Impact Area	Proposed Mitigation	Mitigation Area
Wetland, direct impacts (grading or fill)	0 sf	Wetland Enhancement	28,000 sf
Buffer, grading or fill	42,700 sf	Buffer Enhancement	33,6000 sf
Total	42,700 sf (0.98 ac)	Total	61,600 sf (1.4 ac)

The stormwater system for the proposed synthetic turf field was designed according to the King County Surface Water Design Manual (2016) and City of Kenmore Municipal Code (KMC) Chapter 13.35 Stormwater Requirements (Refer to the December 2017 Draft Stormwater Technical Information Report by Perteeet). Overall, the system is designed to mimic pre-development conditions, in order to maintain surface and groundwater flows to the surrounding wetland and seasonal stream. Offsite runoff from the adjacent upstream area to the east of the wetland as well as a portion of the proposed pathways north of the field will continue to drain through the

emergent wetland, similar to existing conditions. In addition, groundwater inputs from the north east will continue to contribute to wetland hydrology.

Stormwater from the remainder of the field will flow to a detention facility under the southwest corner of the field and will be discharged directly to the south, outside of Wetland A and its buffer. To ensure stormwater runoff reaches the detention facility, the gravel borrow subgrade will be sloped toward the detention facility and a free draining rock base will be placed on top of the gravel borrow. Additionally, an impermeable plastic liner will be placed between the gravel borrow and free draining rock to ensure that runoff from the turf does not seep into the wetland and flows from the wetland do not seep into the underdrain and detention facility.

Stormwater flowing across the artificial turf will be directed to a water quality manhole for treatment prior to release. The water quality manhole using treatment cartridges such as Stormfilter or Perkfilter will be installed downstream of the stormwater flow control structure. These cartridges are designed to remove pollutants, such as metals, nutrients and suspended sediment. Water quality within the wetland and adjacent stream will also be maintained by the impermeable plastic liner, the certified lead-free artificial turf proposed, and the use of an inert sand/silica for infill material. Crumb rubber infill (i.e. ground rubber from truck and automobile tires) *will not* be used. No chemicals will be used to clean the synthetic turf, only water.

- 5) *The decision to grant the variance includes the best available science and gives special consideration to conservation or protection measures necessary to preserve or enhance anadromous fish habitat.*

Response: Wetland buffers typically function to reduce impacts to wetlands from adjacent land uses, while providing some terrestrial habitat necessary for wetland-dependent species that require both aquatic and terrestrial habitats (Hruby, 2013). A review of “best available science” (per KMC 18.20.272) documents pertaining to wetlands and wetland buffers, as prepared by state agencies providing guidance to local governments, indicates that the ability of a buffer to provide these functions is directly related to its condition. For example, buffer habitat with high plant structural diversity provides habitat niches for cover, foraging, and nesting, which results in higher wildlife species richness (Hruby, 1999; Knops, et al., 1999). Densely-vegetated or forested buffers also help to screen wetland habitat from the disturbances of adjacent human development and activities (Hruby, 2013). Conversely, buffer habitats with low plant structural diversity, such as grazed or mowed grass, provide few habitat niches, lack habitat structure, have much lower species richness, and have little to no potential to screen a wetland from adjacent human development and activities.

Along with providing habitat for wetland-dependent species, wetland buffers act to protect and maintain water quality in wetlands by removing sediments, nutrients, and toxicants (Hruby, 2013). The effectiveness of a buffer to trap sediments (and attached pollutants) greatly decreases if vegetation is lacking or degraded (Adamus, et al., 1991). The ability of a wetland buffer to trap and biologically treat nutrients and toxicants is dependent on several factors, including slope, buffer width, and soil composition (Hruby, 2013). All buffer areas, including mowed grass, have the potential to improve water quality to some degree. However, as compared to forest habitat, mowed grass has up to 65% less water infiltration capacity (Kelling and Peterson, 1975). This decrease in water infiltration leads to excess runoff into a wetland during storm events, which allows runoff containing nutrients and toxicants to drain directly into a wetland (Sheldon, et al., 2005).

Installation of the synthetic turf field will narrow the adjacent 100-foot Class 2 wetland buffer down to a minimum width of approximately 10 feet; however, this buffer area currently provides limited buffer functions as

it consists of regularly mowed grass and is used for recreational purposes and occasionally event parking. Due to the proposed stormwater system and water quality treatment, converting this mowed grass buffer to synthetic turf will not result in an increase of sediments, nutrients, and toxicants, nor will it significantly alter stormwater flows as compared to existing conditions. The proposed tree replacement as well as the buffer enhancement plan will provide a greater diversity and density of native plants and increase the habitat value for native wildlife species. Therefore, even though the width of the existing buffer will significantly decrease in some locations, the enhancement plan is expected to enhance wetland habitat functions compared to existing degraded conditions.

The proposed ballfield renovation does not affect anadromous fish habitat. The project is located over 4,000 feet upstream from the nearest identified anadromous fish habitat (Lake Washington) (WDFW, 2016). While the existing data and studies indicate that Stream #0226 does not provide habitat for anadromous fish, resident salmonids may occur within approximately 400 feet of the existing ballfield and, special considerations for conservation and protection measures to preserve or enhance habitat for potential anadromous fish have been taken. For example, the project will not directly impact the onsite wetland, which serves as the headwaters for Stream #0226. The stream's hydrology and water quality will be maintained during ballfield renovation. No in-water construction work is proposed. The stormwater and water quality treatment system for the proposed field is designed to mimic pre-development conditions, in order to maintain surface and groundwater flows to the surrounding wetland and stream and protect downstream water quality. As described above, the synthetic turf proposed will be certified lead free and the infill will be an inert sand/silica material. No chemicals will be used to clean the field during maintenance activities.

- 6) *The granting of the variance is consistent with the general purpose and intent of the City's comprehensive plan and adopted development regulations.*

Response: Objective 3.2 of the Land Use Element in the City's Comprehensive Plan is to "promote the preservation of significant historic and archaeological sites and structures." This proposal recognizes the place of the ballfield in the historic cultural landscape at St. Edward State Park, and supports its continued use. The City's Comprehensive Plan Policy LU-15.1.9 states that, "Alterations to wetlands may be allowed, only after all wetland functions are evaluated, the least harmful and reasonable alternatives are identified, and affected significant functions are appropriately mitigated, in order to...accomplish a public agency or utility development." With this proposal, the ballfield is shifted out of the wetland itself. As described above, the proposed mitigation will result in an overall ecological improvement to the wetland, including offsite forested wetland areas.

The Parks, Recreation and Open Space Plan discusses as an "Opportunity" providing and developing more land for active recreation activities, and notes that a big challenge for Kenmore is land sufficient in size to accommodate a variety of active recreational pursuits, including athletic fields. Objective P-4.1 states that the City should, "identify and prioritize...underdeveloped properties for consideration of public acquisition for active recreation including athletic fields." A lease agreement with State Parks for improvement and use of the ballfield would provide an improved athletic field for community use while retaining it in its historic location. This approach is supported by Policy P-5.1.3 which states that the City should "consider providing new facilities and facility upgrades to existing park lands to support new or existing recreation opportunities where appropriate" and Policy P.6.4.1 which states, "Develop and execute joint facility use and maintenance agreements when appropriate with...State of Washington...and others to maximize public use of existing public and or similar facilities." Capital recommendations in the Parks, Recreation and Open Space Plan specifically support development of athletic fields.

The proposal meets Kenmore development regulations in all areas with the exception of the wetland buffer standards. Compliance with the development regulations per KMC Chapter 18.55 is provided within the Revised Critical Areas Report (ESA, 2018) for this project. The updated stormwater and water quality treatment system is in compliance with King County Surface Water Design Manual standards.

## References

- Adamus, P. R., Stockwell, L. T., Clarain, E. J., Morrow, M. E., Rozas, L. P., & Smith, R. D. 1991. Wetland Evaluation Technique (WET) Volume 1: Literature review and evaluation rationale. (Technical Report WRP-DE-2). Vicksburg, MS: U.S. Army Corps of Engineers Waterways Experiment Station.
- Costello, C. 2017. Field meeting with WDFW biologist Casey Costello. May 8, 2017.
- ESA (Environmental Science Associates). 2018. St. Edward State Park Ballfield Improvements Critical Areas Report and Draft Mitigation Plan. Prepared for: City of Kenmore.
- Hruby, T. 1999. Assessments of wetland functions: What they are and what they are not. *Environmental Management*, 23(1), 75-85.
- Hruby, T. 2013. Update on Wetland Buffers: The State of the Science (Publication # 13-06-11). Olympia, W: Washington Department of Ecology.
- Kelling, K. A., & Peterson, A. E. 1975. Urban lawn infiltration rates and fertilizer runoff losses under simulated rainfall. *Soil Science Society of America Journal*, 39(2), 348-352.
- Knops, J. M. H., Tilman, D., Haddad, N. M., Naeem, S., Mitchell, C. E., Haarstad, J., & Groth, J. 1999. Effects of plant species richness on invasion dynamics, disease outbreaks, insect abundances and diversity. *Ecology Letters*, 2(5), 286-293.
- NPS (National Park Service). 2006. St. Edward Seminary Cultural Landscape Inventory (Draft) Parts 1 and 2.
- Perteet. December 2017. St. Edward Park Ballfield Draft Stormwater Technical Information Report. Prepared for: City of Kenmore
- Perteet. January 2018. St. Edward Park Ballfield Plan Set. Prepared for the City of Kenmore.
- Sheldon, D., Hruby, T., Johnson, P., Harper, K., McMillan, A., Stanley, S., & Stockdale, E. (2005). Freshwater Wetlands in Washington State. Volume 1: A Synthesis of the Science. (Publication # 05-06-006). Olympia, WA: Washington Department of Ecology.
- Watershed Company, The. 2016. Stream & Wetland Delineation Report: Saint Edward State Park Seminary. Prepared for Trevina Wang, Daniels Real Estate.
- WDFW (Washington Department of Fish and Wildlife). 2016. SalmonScape web application. Available: <https://fortress.wa.gov/dfw/salmonscaperun/MapFrame.htm>. Accessed April 15, 2016.
- WSPRC (Washington State Parks and Recreation Commission). 2008. Saint Edward State Park Management Plan.