

APPENDIX A

Elements of the Environment not Analyzed in this SEIS

DETERMINATION OF ELEMENTS OF THE ENVIRONMENT TO BE ANALYZED IN THE SEIS

The University of Washington, as lead agency is required by the Washington State Environmental Policy Act (SEPA) Rules WAC 197-11 to focus the Supplemental Environmental Impact Statement (SEIS) on elements of the environment that are likely to experience significant adverse impact.

The University of Washington issued a "Determination of Significance and Request for Comments on Scope of SEIS" for the Intermural Activities (IMA) Field No. 1 Improvements on August 15, 2011.

Elements to be analyzed in the SEIS identified in the Determination of Significance include:

- Light and glare
- Aesthetics
- Noise
- Energy
- Greenhouse Gases

Alternatives to be analyzed in the SEIS include the:

- Proposed Recreational Sports IMA Field No. 1 Improvements
- No Action
- No field lighting

Comments from four interested parties were received:

Elizabeth Hom raised concerns about loss of bird habitat, particularly forage for Canada Geese, loss of natural green space, negative health hazards associated with use of discarded tires as an impact softening base for artificial turf.

City of Seattle Department of Planning and Community Development raised concerns about exceptional trees addressed in Seattle's Tree Protection Ordinance, SMC 25.11 and riparian corridors and wetlands addressed by Seattle's Regulations for Environmentally Critical Areas, SMC 25.09.

Bonnie Miller raised concerns about preventing material that disintegrates from the artificial turf from entering into the nearby water, light impacts on the neighborhood or wildlife in nearby waterways and how fencing might impact migrating and resident birds and wildlife.

Kern Ewing indicated a preference for keeping artificial turf away from the creek and ecological restoration adjacent to the creek.

RCW 43.21C.031 requires environmental impact statements to analyze only those probable adverse environmental impacts which are significant, the likely impacts on this element are not significant. RCW 43.21C.240 provides that jurisdictions should consider whether development regulations including applicable local, state, or federal laws and rules provide adequate analysis of and mitigation for the specific adverse environmental impacts of the project action.

Final Scoping Determination

The following constitutes the final determination and rationale for Elements of the Environment as defined in WAC 197-11-440 that are included or eliminated from detailed study. Elements not analyzed were eliminated because probable adverse impacts are not significant pursuant to WAC 197-80-480(2)(c) are discussed and the rationale for not analyzing them are discussed.

Rationale for Elimination of Elements of the Environment from Detailed Study

Natural Environment

Earth

IMA Field No. 1 and the surrounding uses are located within a flat area, originally made up of stream and lake deposits. A geotechnical investigation indicates that the site consists of underlying glacial deposits overlain by peat varying in depth from 10 to 20 feet, municipal solid waste varying from 8 to 20 feet in depth and clean fill consisting of gravelly, silty sand varying from about 4 to about 12 feet. Groundwater is near the surface and varies seasonally.

Soil and geologic conditions do not present unusual limitations. There will be little or no excavation. The placement of light standards will involve deep pile supports. There likely will be additional fill added to provide an adequate base for the artificial turf. The fill that may be required for the artificial turf is likely to be a very specific mix of gravel or sand and is not likely to be accommodated by materials removed from other construction sites in the vicinity.

Seattle is located within the seismically active area of the Pacific Northwest. The artificial turf surface will not be affected by a seismic event. The light supports will be design to Uniform Building Code Zone III for stability during a major seismic event.

Rationale for Elimination from Detailed Study

The topography of the site and the configuration of the existing fields and the artificial turf and lights are not likely to result in significant impacts related to topography or the character of geologic deposits or soils. The risk of erosion and sedimentation from soil exposure will be

readily addressed by standard Best Management Practices (BMPs). Light standards will utilize standard auger cast pilings. There is little danger of soil liquefaction on the site that would affect the facility. The likely impacts on this element are not significant as provided for in RCW 43.21C.031 and mitigation in the City of Seattle and UW regulations are sufficient to mitigate impacts as provided for in RCW 43.21C.240.

Air

Air Quality

There are three air pollutants of major concern in the Puget Sound region:

1. Carbon monoxide (CO), which is largely from motor vehicle exhaust.
2. Ozone, which is contributed by motor vehicles, as well as other sources.
3. Particulate matter, which includes both solid matter and liquid droplets suspended in the air. Exhaust from diesel-powered vehicles is a source of particulates, but the majority is from wood smoke and industrial sources.

There are four major sources of criteria pollutant emissions in Washington State: motor vehicles, industrial emissions, residential woodstoves/fireplaces and outdoor burning. Emissions from motor vehicles are Washington's largest source of air pollution. Within the project area, the most predominant source of emission is from motor vehicles. Motor vehicles are a primary source of carbon monoxide (CO) and contribute substantially to the total emissions of volatile organic carbon and nitrogen oxides. Motor vehicles also emit sulfur dioxide and particulate matter in their exhaust.

Three agencies have jurisdiction over the ambient air quality in the project area: the United States Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), and the Puget Sound Clean Air Agency (PSCAA). As part of the Clean Air Act, the EPA established ambient air quality standards for six criteria pollutants. Two classes of ambient air quality standards were established: primary standards to protect the public health, and secondary standards to protect the public welfare and the environment (for example, soils, vegetation, and wildlife).

The central Puget Sound region is currently in attainment for all criteria pollutants. The U.S. Environmental Protection Agency (EPA) redesignated the region maintenance attainment status on October 11, 1996 (FR 53323) for CO and on November 25, 1996 (FR 50438) for ground-level ozone. Particulates (tiny, discrete solid or aerosol particles) especially fine particles measuring 2.5 micrometers in diameter or smaller are a continuing concern for meeting the Puget Sound Clean Air Agency's health goal, which is stricter than the federal standard and more protective of human health. The area meets federal standards for particulates.

During construction, dust from excavation and grading would contribute to ambient concentrations of suspended particulate matter; however, air quality impacts would be temporary. The construction contractor(s) would be required to comply with the Puget Sound Clean Air Agency's Regulation I, Section 9.15, requiring reasonable precautions to avoid dust emissions.

The site of the field improvements is over the Montlake Landfill. Methane gas is produced in varying concentrations both from the large underlying peat deposit and from decomposing landfill debris. Section 10.09.060 of Title 10, King-County Solid Waste regulations, requires that all enclosed structures that are constructed on or within 1,000 feet of an active, closed, or abandoned landfill be protected from potential methane gas migration from the landfill. The method for ensuring protection must be addressed in a report submitted by a licensed professional engineer to the local health department and the local building department for approval (KCBOH 2003; UW 2009).

The field itself will not represent a barrier to free movement of methane or its dispersal.

Rationale for Elimination from Detailed Study

The addition of artificial turf will allow use of the site later in the evening in the fall, winter and spring; however, the amount of additional vehicle use will be negligible because most use will be by students who are likely to walk to the facility. If additional vehicle trips are utilized for trips to the site, they will be a negligible contributor to emissions. Compliance with requirements for consideration of potential migration of methane from the Montlake Landfill will result in little or no potential for impacts from that source. The field improvements will not change other impacts on air quality. The likely impacts on this element are not significant as provided for in RCW 43.21C.031 and mitigation in the City of Seattle, Puget Sound Clean Air Agency, King County Board of Health and UW regulations are sufficient to mitigate impacts as provided for in RCW 43.21C.240.

Odor

Rationale for Elimination from Detailed Study

There are no existing or likely future sources of odor from the existing facility or the proposed alterations.

Greenhouse Gases

Emission of greenhouse gases and potential impacts on climate change will be assessed in the EIS.

Water

The athletic field is located adjacent to University Slough which drains into Lake Washington. The drainage basin is urban in character and dominated by impervious surfaces. The most significant natural surface water features on campus are the Union Bay Natural Area wetlands located south of the field. There is no natural surface water flow on the site. Rainfall either infiltrates into the ground or sheet flows to University Slough or to the stormwater system that serves NE Clark Road south of the field.

The field is not located within Shoreline Management Act or the City of Seattle Shoreline Management Program jurisdiction. The site is subject to riparian corridor regulations in Seattle's Critical Areas Code in SMC 25.09.200 which the University will comply with (see discussion of fish and wildlife below).

A concern was identified in scoping comments about preventing material that disintegrates from the artificial turf from entering into the nearby water.

There are studies that show that levels of some heavy metals, most notably zinc (being something of a "marker" metal), are present in leachate from synthetic turf field stormwater runoff (CDEP 2010). There are also data that show this is not the case (Herrera 2010). Regardless, the levels of zinc reported are lower than water quality standards for human consumption, but not environmental water quality standards. Actual granular material may migrate off the field (as noted in most of the studies cited above) in some quantity, but these particles would be trapped in the surrounding grass much like any typical grass filter strip BMP. The vegetated riparian buffer adjacent to University Slough should be sufficient to intercept any particles carried in overland flow. The particulate does not typically travel through the field profile into the field subdrainage system as the geometries involved with the product backing, aggregates, and various other materials involved inhibit this movement much like a sand filter.

The University must comply with the City of Seattle Drainage Control Ordinance (Ordinance No. 108080; Seattle Municipal Code 22.800-22.808) for all storm water runoff. The ordinance requires drainage permits and approval of all drainage control plans for new construction. The ordinance is intended to protect life and property from damage by flooding and to protect the City's streams and lakes from excessive water flow and pollution. The extent to which water quality facilities will be required is dependent on the extent to which they are altered. The project must also comply with Washington State Department of Ecology Construction Stormwater General Permit requirements addressing potential erosion and sedimentation during construction and operation.

Throughout the study area, groundwater is close to the ground surface. Groundwater is presumed to be recharged by interflow from pervious surfaces within the campus as well as from outside the campus. Groundwater flow and discharge is expected to be to University

Slough and Lake Washington. There is no use of groundwater in the vicinity for potable water supply. Excavation will not intercept the groundwater table. The project will not affect the amount or the direction of flow of groundwater.

Rationale for Elimination from Detailed Study

The proposed facilities will not change the amount of runoff or water quality and will not have probable significant impacts on water quantity, water quality or the movement or surface or ground water, flooding or public water supply. The impacts on this element are not significant as provided for in RCW 43.21C.031 and mitigation in the City of Seattle, and UW regulations are sufficient to mitigate impacts as provided for in RCW 43.21C.240.

Plants and Animals

Vegetation and Wetlands

The athletic field is currently grass turf. There are locust trees along 45th Street that range from six to 10 inches in diameter; however, they are not “Exceptional Trees” as defined in SMC 25.11, Tree Protection. There is some vegetation along University Slough including large cottonwood trees.

There was a field reconnaissance of the site in April 21, 2011 and September 29, 2011. There are no wetlands on the site.

Fish and Wildlife

Before the lowering of Lake Washington by 9 feet during the early part of the 20th century, Ravenna and Yesler Creeks flowed into marshland north of where University Slough now terminates, and the land through which the slough would be placed was under the waters of Union Bay. After the lake was lowered and the area used by the City of Seattle for residential and industrial solid waste from 1926 to 1966 the slough was excavated through the area.

Ravenna Creek was connected to Union Bay by piping it underground to University Slough in 2006. Prior to that time, Ravenna Creek had no surface water connection with University Slough because it was diverted into a piped system.

Fish use of University Slough has not been well documented and the available data do not indicate that the slough contains salmonids (WDFW 2011). Water quality conditions, although somewhat improved by the connection of Ravenna Creek, are not ideal for salmonid rearing. Turbidity and nutrient levels are high and dissolved oxygen readings as low as 0.62 mg/l (Tracy 2007) have been recorded during the summer months, which is far below the 3.0 mg/l that is considered fatal to salmon (EPA 1986). In addition, the northern portion of Union Bay, where the mouth of University Slough is located, is heavily invaded by non-native aquatic vegetation including Eurasian watermilfoil (*Myriophyllum spicatum*), Brazilian elodea

(*Egeria densa*), curlyleaf pondweed (*Potamogeton crispus*), and fragrant white water lily (*Nymphaea odorata*). The presence of the invasive aquatics in the northern portion of Union Bay is believed to discourage use of this area by migrating juvenile salmonids, and also to provide habitat for predator species that prey on juvenile salmonids. Although no available data indicate the use of University Slough by salmonids, it is possible that a small number may use the lower portions of University Slough during some portions of the year. It is more likely that other fish species adapted to warmer, slower-moving eutrophic waters, such as stickleback and sculpin, may be present within University Slough.

University Slough is defined by the Seattle Critical Areas Regulations for Environmentally Critical Areas as a stream. SMC 25.09.020 D.5.a defines riparian corridors, which are the riparian watercourse and the riparian management area using the waters defined in WAC 222-16-031.

Seattle's Critical Areas Codes in SMC 25.09.200.A.2.d.1 establishes a 100 foot Riparian Management Area, but allows a Limited Development Area in the outer 25 feet of the Riparian Management Area for a stream with anadromous fish and in the outer 50 feet for a stream without anadromous fish such as University Slough.

The provisions of SMC 25.09.200.A.3.d.3 limit coverage by impervious surface to no more than 35 percent of the total area of the Limited Riparian Development Area (in this case the outer 50 feet of the Riparian Management Area), but also provides for mitigation if the threshold is exceeded in accordance SMC 25.09.200.A.3.e. Impervious surface limitations are expected to be observed and the entire 50-foot buffer revegetated along University slough.

The placement of an artificial surface on the field will not constitute impervious surface but may increase runoff slightly because the artificial turf is likely to provide for somewhat slower infiltration. The amount of runoff to University Slough is not projected to increase because any additional sheet-flow will infiltrate within the 50 foot buffer area provided.

No adverse impacts to aquatic species in University Slough are projected and the aquatic environment is likely to be improved by additional native vegetation in the buffer area.

Wildlife use in the vicinity is largely limited to water-related use of the wetland complex to the south of the field across NE Clark Road. Between the athletic field and the wildlife area is a parking lot and UW maintenance yard which extends a distance of about 500 feet. The field alterations will not make physical changes in this area.

The wildlife use of the area to the south of the parking lot and maintenance includes a variety of resident and migratory birds and small mammals, reptiles and amphibians. A survey of wildlife in the area was performed in 2003 for alterations made to the driving range nets and lighting (SW 2003). That report noted that there is little scientific literature that addresses sport field lighting. Sport field lighting delivers high intensity light to a highly restricted area.

The localized placement, use of deflective hoods, and specialized bulb element provides a highly directional light targeting the field with limited light escaping into surrounding areas. Sport field lighting also is limited in duration by the operational hours of the field, as compared to normal urban street lighting. The extent to which light penetrates into the habitat areas to the south is also limited by interception by large trees. These trees are primarily deciduous and intercept light most effectively when in leaf; however the spring, summer and early autumn time periods when they are in leaf represents the greatest use of the habitat area and the most sensitive use for reproduction and rearing. The area most affected by spillover light is the margin of the habitat area south of the parking lot and maintenance yard about 500 feet to the south. This area is currently affected by urban lights in the vicinity, particularly security lighting for the maintenance facility and to a lesser extent street lighting along 45th Street. The sport field lighting will only marginally increase light levels in the area.

In habitat areas along University Slough to the west, plantings of additional native vegetation within the buffer area will increase the habitat area as the vegetation matures and reduce impacts of lighting to the outer margin of the riparian area.

A small amount of forage area for a limited number of species, such as Canada Geese, will result from replacement of lawn by artificial turf. The existing lawn is not considered natural or native food supply and its loss is not considered an adverse impact.

Rationale for Elimination from Detailed Study

The project will not directly affect wildlife and fish habitat in the vicinity because work will not occur within habitat areas or significantly affect habitat from noise, light or other impacts. The buffer area along University Slough will increase in size and area, resulting in a net improvement of wildlife habitat. Indirect water quality impacts from runoff will not result in impacts to water quality, as discussed above under water resources.

The proposed facilities and operation of the field will not affect adjacent native vegetation, wetlands or fish and wildlife habitat or endangered species and will not have probable significant impacts on these elements.

The likely impacts on this element are not significant as provided for in RCW 43.21C.031 and mitigation in the City of Seattle, and UW regulations are sufficient to mitigate impacts as provided for in RCW 43.21C.240.

Energy

Energy use from lighting and other sources will be assessed in the SEIS.

Built Environment

Transportation

Transportation facilities at the existing field consist of NE 45th Street which runs along the north side of the field, Union Bay Place NE (Mary Gates Drive) to the east, NE Clark Road to the south and Walla Walla Road approximately 700 feet to the west, and west of University Slough and the University Driving Range. Traffic volumes on NE 45th Street are about 40,000 vehicles per day (vpd). Volumes on other streets in the area are not regularly counted, but are likely to be less than 5,000 vpd. Pedestrian connections to the upper campus are provided by three pedestrian overcrossings of Montlake Blvd. The closest is just south of the alignment of NE Clark Road. Pedestrians accessing Field 1 from the upper campus have about a 1/3 mile walk. Persons accessing the fields by car would largely use NE 45th, Union Bay Place NE and NE Clark Road and park in lot E-4 which has about 100 spaces, although some spaces are utilized by vehicles of the Environmental Safety Office Building.

Use of the fields varies greatly according to the type of sport. When used for soccer or ultimate Frisbee, the field can accommodate 3 to 5 playing areas. It is unlikely that the total number of players and spectators using the field s exceeds 100, except during special events.

The placement of synthetic turf on one of the fields will not change the number of players or spectators at the field at any time. The suitability of synthetic turf for sue in rainy weather would extend use into the fall, winter and spring months. The presence of lighting would extend the use of the fields into the evening hours, probably until about 10 to 11 PM, depending on demand.

Because the number of players and spectators on the field at one time will not change, both pedestrian and vehicular trip generation are not likely to change. Parking demand also will not change. The extension of hours of use later in the evening due to lighting is not likely to substantially change the volume of traffic on streets in the vicinity. The likely impacts on this element are not significant as provided for in RCW 43.21C.031 and mitigation in the City of Seattle and UW regulations are sufficient to mitigate impacts as provided for in RCW 43.21C.240.

Environmental Health

Noise

Noise impacts will be assessed in the SEIS.

Risk of Explosion, Releases or Potential Releases to the Environment Affecting Public Health, such as Toxic or Hazardous Materials

Many chemical wastes are persistent in the environment, are harmful to the environment and/or human health, and remain toxic for a very long time. The existing field is treated with fertilizers and a very limited amount of herbicide to maintain the lawn and control weeds.

The replacement of lawn with artificial turf will introduce no new hazardous materials and will slightly reduce the amount of fertilizer and herbicide applied in the area.

A concern was expressed during scoping about potential negative health hazards associated with use of discarded tires as an impact softening base for artificial turf.

Granular rubber produced from used tires is an industry standard infill material, typically combined with some percentage of sand. Because there is an odor associated with granular rubber during periods of high temperature, there has often been the assumption that what people are smelling is a volatile organic compound (VOC) of some sort that is “evaporating” out of the rubber however several studies can be cited that show that VOC levels are below measurable levels or equal to background levels. A 2010 study by the State of California (Publication # DRRR-2010-009) found that VOC levels were either below levels that could be detected or were equal to background levels upwind of the fields being measured, regardless of temperature. A New York State Department of Environmental Conservation and New York State Department of Health May 2009 study produced similar results (NYDECH 2009). Previously, a 2008 Connecticut study (Milone & McBroom 2007) had similar results for air quality.

Rationale for Elimination from Detailed Study

The sports field improvements will not affect any known hazardous materials. Construction will not utilize hazardous materials in amounts other than normal in construction activities. If contaminated materials are found during construction they will be removed in accordance with state and federal regulations and disposed at in a facility approved for the type of contaminants. The impacts on this element are not significant as provided for in RCW 43.21C.031 and mitigation in the City of Seattle, Puget Sound Clean Air Agency, King County Board of Health and UW regulations are sufficient to mitigate impacts as provided for in RCW 43.21C.240.

Land and Shoreline Use

Relationship to existing land use plans and to estimated population, Housing, Recreation, Historic and cultural preservation, Agricultural crops

Land use on the athletic fields will not change. They will remain athletic fields open to intermural use by members of the university community. Patterns of recreation al use will not change, except for greater use in the fall, winter and spring when the artificial turf will allow

use when grass fields would be too wet and use later in the evenings allowed by lighting. There are no historic or cultural resources on the site or in the vicinity and no agricultural crops.

The likely impacts on these element of land use are not significant as provided for in RCW 43.21C.031.

Light and Glare and Aesthetics

Light and glare and aesthetic impacts will be assessed in the SEIS.

Public Services

Police

The campus is served by the University of Washington Police Department (UWPD). UWPD employs 1 Chief of Police, 1 Deputy Chief, 1 Commander, 4 Lieutenants, 6 Sergeants, 32 Officers, and 27 Civilians. The department has its own conflict management, firearms and first aid instructors, maintains a crime prevention unit and a detective unit for criminal case preparation and prosecution. The entire campus is patrolled 24 hours a day.

Fire and Medical

The Seattle Fire Department (SFD) provides prevention, education, fire suppression, medical services, and other related emergency and non-emergency services to the University of Washington. The type of response assigned by the SFD's alarm center is determined by the nature of the received emergency request. Approximate response time to the University ranges from three to five minutes. There is no specific record available of emergency medical response or other response to the sports fields.

Schools, Parks and Other Recreation Facilities

The extent to which sports fields serve recreation and athletic functions that are part of the University of Washington educational experience will not change, except by providing a surface that is suitable for use under a wider variety of weather conditions and providing lighting that will allow use later in the evening, especially in the winter. Existing recreation facilities in the vicinity will continue to operate during construction. After sports field improvements are completed the field will continue to serve the same functions and will provide improved planing surface and more scheduling time and flexibility.

Maintenance

The sports field improvements will result in replacement of facilities with a facility that will not require lawn mowing, application of fertilizer and similar maintenance. Overall maintenance levels are not expected to increase over current levels.

Rationale for Elimination from Detailed Study

The extent to which sports fields serve recreation and athletic functions that are part of the University of Washington educational experience will not change, except by providing a surface that is suitable for use under a wider variety of weather conditions and providing lighting that will allow use later in the evening, especially in the winter. Existing recreation facilities in the vicinity will continue to operate during construction. After sports field improvements are completed the field will continue to serve the same functions and will provide improved planing surface and more scheduling time and flexibility. There will be virtually no change in Police, Fire, maintenance or other public services. The likely impacts on this element are not significant as provided for in RCW 43.21C.031 and mitigation in the City of Seattle and UW regulations are sufficient to mitigate impacts as provided for in RCW 43.21C.240.

Utilities

Electricity

Seattle City Light (SCL) owns and maintains generation, transmission and distribution facilities that serve the UW Campus as well as the entire City of Seattle. Electrical energy demands are met through City-owned hydroelectric generating facilities and SCL's power supply contracts with the Bonneville Power Administration and with utilities located in the mid-Columbia basin. The University of Washington is served by a SCL substation located at 15th Avenue NE and NE Pacific Street. The university purchases approximately 1,100 megawatts (MW) of electrical energy annually. Both overhead and underground power lines occur throughout the project area. In addition to purchasing electricity from SCL, the University meets approximately 7 percent of its electrical energy needs with an on-campus steam-driven generator.

Natural Gas

Natural Gas is used to generate heat, steam, and emergency power. Puget Sound Energy (PSE) provides natural gas services to the University. The University operates a Central Steam Plant to produce steam for building heat, domestic hot water, food services, and process use. Steam is distributed through utility tunnels and is used for building heat, domestic hot water, food services, and process use.

The University also maintains a distribution system to deliver natural gas to a limited number of buildings.

There is no space heating provided at the field and none will be provided with the sports field improvements.

Communication

Qwest provides franchise land-line telephone service within the Local Access and Transport Area (LATA) that includes North Seattle. Telephone lines in urban areas are typically located within street rights-of-way, aboveground on utility poles in most areas, and underground in some areas. The City of Seattle, University of Washington, and several private companies (including AT&T, Electric Lightwave, MCI, Sprint, Comcast, and others) maintain fiber-optic or computer/communication cables and/or provide long-distance and other telecommunications services.

There are no communication facilities provided at the field and none will be provided with the sports field improvements. Cell phones undoubtedly are used and will continue to be used.

Water

Potable water is provided to the campus by the City of Seattle. The University maintains the water system on the campus. No water service is provided at the field and none will be provided with the sports field improvements.

Stormwater

Surface water drainage on the University of Washington Campus is largely conveyed in a closed conveyance system within the campus and discharges either to the City of Seattle storm drainage system or directly into surface water at the Ship Canal and Portage Bay. Stormwater in the East Campus, largely discharges into Lake Washington to the west. Water from rainfall either infiltrates into the existing field or sheet flows to University Slough or the stormwater system on NE Clark Road. With the field improvements, water infiltration and runoff will be virtually the same.

Sewer

Sewer conveyance on the campus is the responsibility of the university and is discharge to the City of Seattle sewage system which in turn is conveyed to King County Metro Utilities for conveyance and treatment at the West Point Sewage Treatment Facility. There is no sewer service provided at the field and none will be provided with the sports field improvements.

Solid Waste

The University of Washington operates its own solid waste management through the UW Solid Waste Management Office which includes recycling and food waste composting. The university's Comprehensive Solid Waste Management Plan was developed to meet the standards of a state mandate in the Government Options to Landfill Disposal (GOLD) Plan as a strategy for waste reduction and recycling at state government facilities. There is solid waste

service provided at the field and none will be provided with the sports field improvements. Users are required to remove any solid waste they produce.

Rationale for Elimination from Detailed Study

The field improvements will not require increases in capacity in any off-site utility facilities other than additional demand for electricity to serve lights.

Energy use from lighting will be assessed in the SEIS.

For other utilities, demands will not change substantially and will not result in changes to on- and off-site utility facilities and will not result in probable significant adverse impacts as provided for in RCW 43.21C.031. Mitigation in the City of Seattle and UW regulations are sufficient to mitigate impacts to other utilities as provided for in RCW 43.21C.240.

References

CalRecycle 2010 Safety Study of Artificial Turf Containing Crumb Rubber Infill Made From Recycled Tires: Measurements of Chemicals and Particulates in the Air, Bacteria in the Turf, and Skin Abrasions Caused by Contact with the Surface Publication # DRRR-2011-007 On the internet at www.calrecycle.ca.gov/Tires/2011007.pdf

CDEP 2010 Artificial Turf Study Leachate and Stormwater Characteristics. Connecticut Department of Environmental Protection July 2010 Available on the internet at http://www.ct.gov/dep/lib/dep/artificialturf/dep_artificial_turf_report.pdf

Herrera 2010 Water Quality Report Woodland Park Synthetic Turf Field Stormwater Drainage Study Prepared for Seattle Parks and Recreation Prepared by Herrera Environmental Consultants June 2010

KCBOH (King County Board of Health). 2003. Regulations, Title 10 Board of Health Solid Waste Regulations, Subsection 10.09.060 Construction standards for methane control. Available at: <http://www.mrsc.org/mc/kingboh/15-BOH-Title%2010.pdf>

Milone & MacBroom, Inc 2007 Thermal Effects Associated with Crumb Rubber In-filled Synthetic Turf Athletic Fields Scott G. Bristol, LEP Vincent C. McDermott, FASLA, AICP Milone & MacBroom, Inc. 99 Realty Drive Cheshire, Connecticut 06410 Available on the internet at http://www.miloneandmacbroom.com/Libraries/Documents/Evaluation_of_the_Environment_I_Effects_of_Synthetic_Turf_Athletic.sflb.ashx

NYDECH (2009) "An assessment of chemical leaching, releases to air and temperature at crumb-rubber infilled synthetic turf fields." New York State Department of Environmental Conservation and Department of Health, May 2009, available at http://www.dec.ny.gov/docs/materials_minerals_pdf/crumbrubfr.pdf

UW (University of Washington). 2009. Montlake Landfill Project Guide, University of Washington Montlake Landfill Oversight Committee. April 2009. Available at: <http://www.ehs.washington.edu/eositeremed/montlake.pdf>.