



MEMORANDUM

To: Mark Farrell, Director
City of Monroe Parks & Recreation

Cc: City of Monroe Department of Community Planning

From: Eric Gold 

Date: June 26, 2019

Re: Lake Tye Park All Weather Fields
Project Design Narrative

Project Design Program Outline

In 2017-2018 the City of Monroe Department of Parks & Recreation commissioned Hough, Beck, & Baird Landscape Architects of Seattle to prepare a Master Plan for the entirety of Lake Tye Park (along with “The Cadman Site”). Among other improvements proposed, improvements to the existing multi-purpose grass athletic field, specifically to increase capacity while improving the use experience. As Phase 1 of that Master Plan, the Lake Tye Park All Weather Field Project proposes to convert an existing under-drained grass athletic field to resilient infilled synthetic turf. Lights will be added to expand hours of availability, and a variety of safety and security fencing and pedestrian access improvements are also proposed. The existing grass field(s) are irrigated and include a sand-based, underdrained profile. Conditions are variable, depending on the time of year and amount of scheduling, but generally they are fairly difficult in the spring and fall. The City would like to increase the reliability and durability of this facility.



The following outline details specific project elements as determined through meetings with Parks Department staff and interaction with the broader community (both citizens and members of City government) at the recent National Night Out event at the Park (September 2018). Program elements are not listed in any specific order.

- Field Conversion of existing under-drained Natural Grass to Synthetic Turf
- LED Field Lighting System
- Field Recreation Activities¹
 - “Regulation” Soccer, 13+/Adult (2)
 - Modified (Youth) Soccer, U11 or similar (4 or more)
 - “Regulation” Lacrosse (2)
 - Modified (Youth) Lacrosse, U11 or similar (4)
 - Youth Baseball (1, adequate outfield dimension to accommodate up to Babe Ruth LL)
 - Softball (1, shared with Baseball, adequate outfield dimension to accommodate youth or adult)
 - Tee-Ball/Kickball (1, diagonal from baseball, also suitable for LL practice)
- Site Circulation
 - Provide Specific Accessible Routes of Travel between key features
 - Provide Specific Accessible Routes of Travel to and from key perimeter locations
 - Improve the interface between School and Park
 - Improve Maintenance Access
- Parking
 - Utilize Existing Parking Capacity
- Permitting, known requirements
 - SEPA – City of Monroe
 - NPDES – WA State Department of Ecology
 - Flood Hazard Area Application – City of Monroe
 - Site Development Permit, Grading & Drainage Review – City of Monroe

Design Summary

Beginning with the initial design guidance provided by the Master Plan and Staff input in July 2018, three early design efforts were presented. Two were found to adequately accommodate the need for two regulation soccer fields, and these were selected by staff for presentation to the public at the September 2018 National Night Out event at Lake Tye Park.

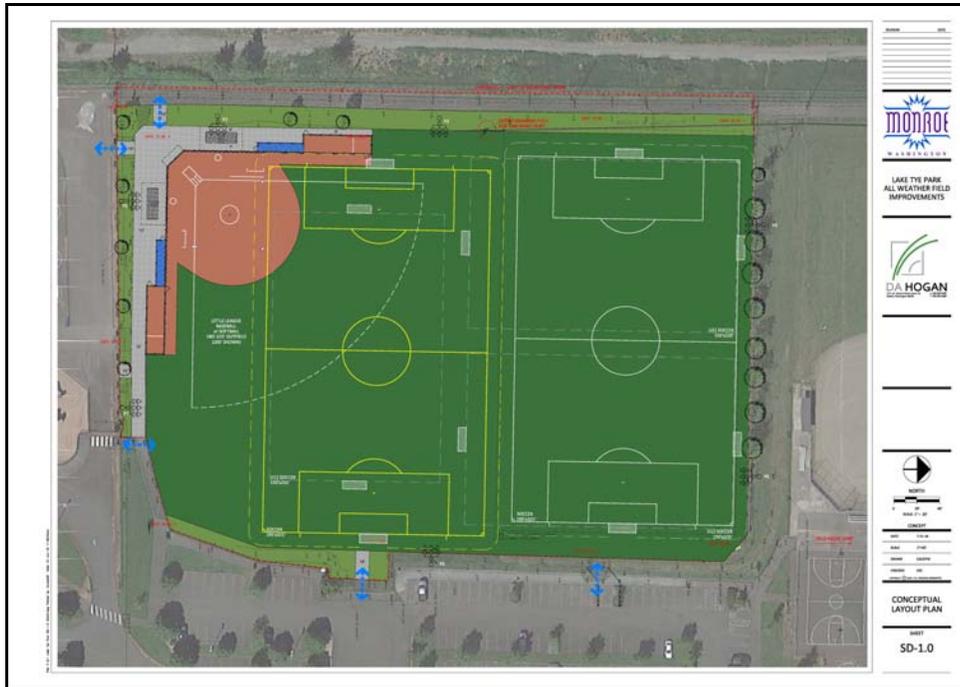
Concept Layout Plan SD-1.0 duplicates the current configuration of field layouts, providing for two full-sized soccer field and their respective “modified” fields with, and the little league baseball/softball field in the generally preferred southeast corner, adjacent to Fryelands Elementary School.

Concept SD-2.0 compromises on the preferred home plate – pitching orientation and moves the baseball/softball infield adjacent to the existing, in a much-improved relationship with the restrooms and concessions.

There were questions about the east-west orientation of the soccer fields (as they are currently arranged), with some hope expressed that we would be able to orient them north-south to reduce the amount of sun

¹ The current design concept dated 6-24-19 meets all of these requested program elements.

in the goalies' eyes at certain times of day/year. Ultimately, that would require a considerable expansion of field footprint to accommodate the desired width of the two fields, well into the parking lot, and so was deemed infeasible. There was also very strong sentiment to include lacrosse – which fortunately has a narrower minimum field width and *could* be oriented north-south, a much more important consideration given the velocity and composition of a lacrosse ball.

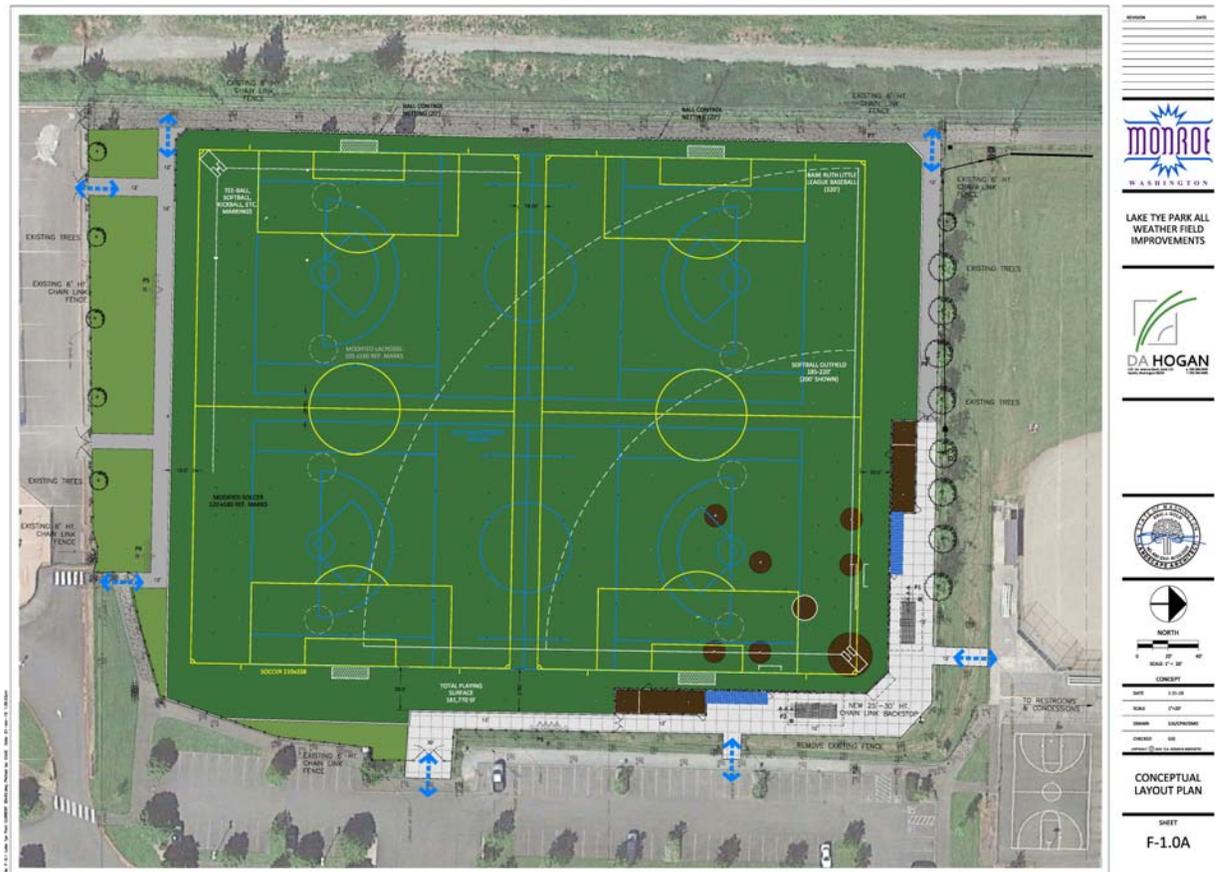


Conceptual Layout Plan 1, August 2018



Conceptual Layout Plan 2, August 2018

There was a very strong preference for Concept 2, with the proximity of the players and spectators to the existing rest rooms and concessions, and the other baseball field, as the primary consideration. Our final “Preferred Schematic Design” is based on Concept 2.



Final Preferred Concept, January 21, 2019

Playfield General Renovations

The new field surface will be a resilient, vertically draining infilled synthetic turf surface, largely analogous to those most commonly encountered at area schools and parks. Locally, Rotary Field at Skykomish River Centennial Park is a comparable surface, as are the new Baseball and Softball Fields at Monroe High School. Prior to beginning the procurement phase, a product selection process will occur.

The field will be installed over a vertically draining, stable permeable aggregate foundation, with a series of subsurface drainage pipes on a geotextile soil fabric, on a compacted subgrade. The overall geometry of the playing surface is recognizable as similar to the current field layout, again except for the location of the baseball field. The overall field size is approximately 180,000sf (plus the softball bullpens).

Finished field dimensions as they are currently shown are as follows;

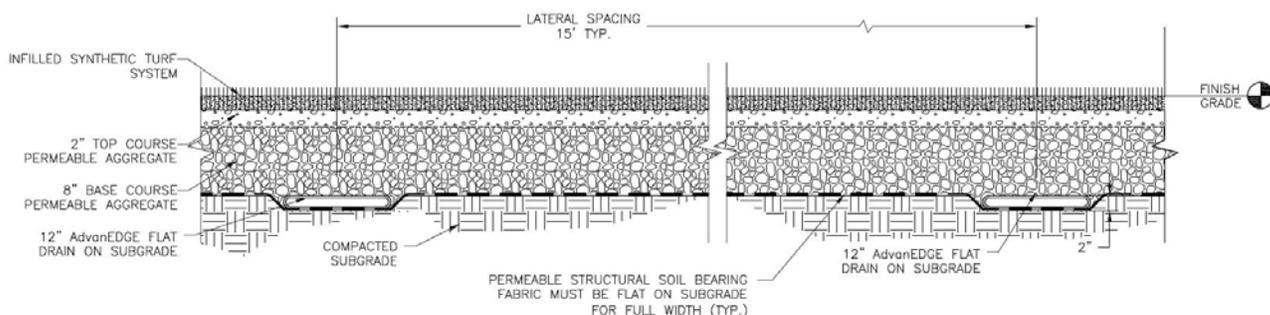
- Regulation Soccer 210' x338' (suitable for all ages 13+ inc. Adult), permanently installed yellow lines (two total)

- Modified Soccer 120' x180' organized perpendicular to the regulation fields, suitable for U12 and lower, proposed to be black 4" sq. reference marks to assist in the layout of seasonally painted markings (four total)
- Regulation Lacrosse 160' x360' (2018 NFHS Unified Field Markings, suitable for 13+ boys or girls) proposed to be permanently installed blue lines (two total)
- Modified Lacrosse 120' x160' proposed to be gray 4" sq. reference marks to assist in the layout of seasonally painted markings (four total)
- Baseball and Softball multiple configurations as follows (all pitching mounds and outfield fences are portable);
 - Youth Little League Softball and Baseball (U12), 60' bases, outfield as desired (shown at 200')
 - Babe Ruth Little League (13+), 90' bases, outfield up to 325' left and right, 400' center)
 - Adult Slow Pitch, 60' bases, 320' outfield

Graphically, the bases are shown in "sliding pits" or limited cutouts, to enable a more aesthetically pleasing replacement process as the higher wear areas are typically replacement every 2-3 years. This was agreed to be a more practical approach than a fully "skinned" infield (as is common for softball) or the "fan and diamond" layout common to baseball. Note that the "fan & diamond" is not very compatible with multiple path paths (see Rotary Field).

- In the southwest corner, combined tee-ball / kickball markings are shown, which could also be used as an "over-flow" little league practice field.

All fields include safety clearances as recommended by their respective sanctioning bodies.



Typical Synthetic Turf Field Section including "flat drain" field subsurface drainage

Fencing: Pedestrian & Ball Control See Drawing Sheet F-1.5

Much of the existing 6' perimeter chain link fence will be repaired to remain. Major new features include the following;

- New Baseball/Softball backstop, including a 80' of 30' high chain link behind home plate, 120' or more of combined 10' chain link fence / 15' high ball control netting (25' combined) down each base line, and fully enclosed bullpen stations that could be upgraded to double as batting cages. In addition, each team area will feature a covered, 8' x40' dugout.
- Along the west edge, two 90' long sections of ball control fencing, combined 10' chain link fence / 15' high ball control netting (25' combined), to collect stray shots on goal.
- Including the existing gates along the west trail, the facility will be completely securable.
- At the Tee-Ball/Kickball field associated with the adjacent Fryelands Elementary School, a very simple 10' ht. chain link backstop is proposed with a 10' wide stop-board assembly behind home plate. Currently, no dugouts or benches are proposed.



*Existing backstop located at the southwest corner of the site
(Fryelands Elementary School in the background)*



*Example Baseball Backstop, note – in this photo there is a duplicate backstop to the right and beyond.
(Monroe High School, 2017)*

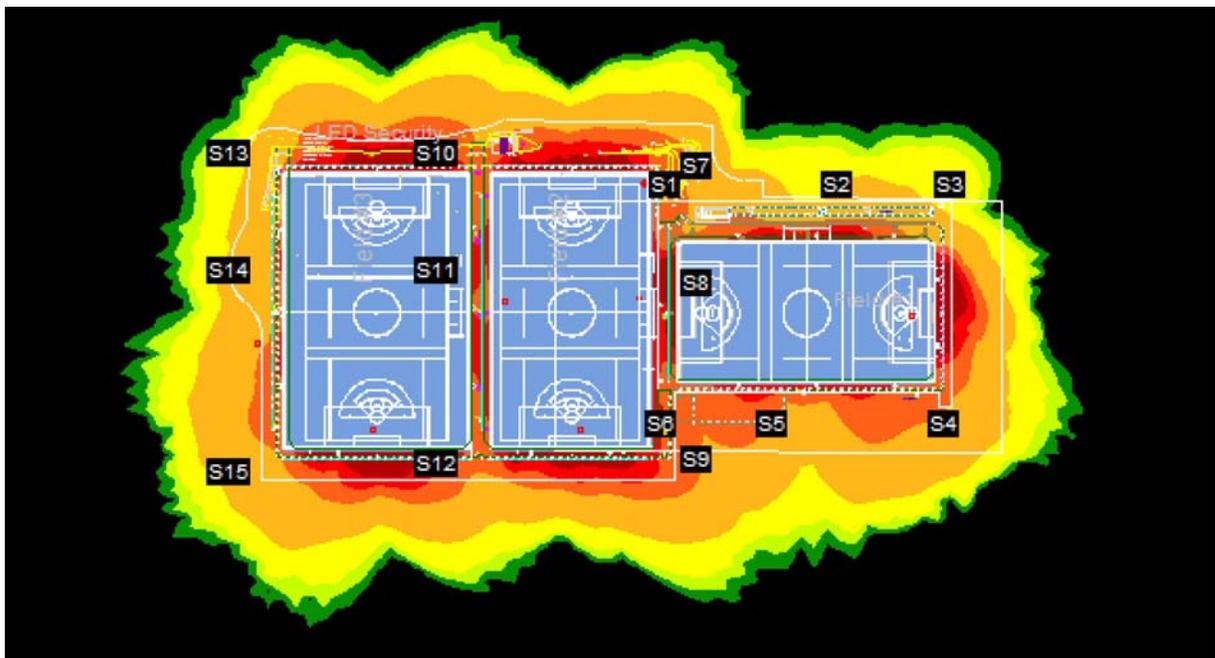
Field & Site Lighting Design See Drawing Sheet E-1.1

The project proposes new LED field lighting as shown on the accompanying drawings. The lighting design is guided by Illumination Engineers Society Class IV (Recreational) design requirements; general field lighting at 30fc (foot-candles, a common measurement of illumination), baseball/softball infield at 50fc, with a uniformity ratio of 2.5:1 (the brightest area is no more than 2.5x brighter than the “darkest” area). Around the perimeter pedestrian walkways and seating areas, a lower lighting level of 5-10fc is desired. To achieve these goals, 84 LED fixtures of three different types are dispersed among 8 poles.



Example LED Field Lighting System, Kasch Park, Everett Parks & Recreation, September 2016

Obtrusive effects of the field lighting system will be well-managed as the LED fixtures attain a nearly full “cutoff” effect behind the pole, meaning little or no spill light at the property line, and vastly reduced glare as the fixture enclosure very effectively shields the element when viewed from anywhere beyond the lighting task surface (field). Poles are expected to be up to 80’ tall measured from the field surface. Total pole height may vary by location on site and relative elevation above the field surface.



Example Glare Analysis model, Kasch Park, Everett Parks & Recreation, September 2016

A complete “Light & Glare Report” will be prepared by the consulting Field Lighting Designer to include more detail related to obtrusive lighting effects such as trespass/spill, glare and sky glow to demonstrate compliance with commercial lighting code. This report will be produced with approval of the Design Development documents.

Site Utilities

Electrical *See Drawing Sheet E-1.1*

The project team has worked with the PUD to identify a specific existing overhead utility pole from which to pull a new service specifically to power the lighting system and minimal accessory convenience outlets proposed. This pole is the northwest corner of the project site. This will minimize trenching and allow us to avoid additional penetrations into existing building(s) or crossing parking lots.

Storm Water *See Drawing Sheets F-1.2 and F-1.3*

Lake Tye is a regional storm water detention facility from an example narrative for drainage improvements in 2018 & a report from a residential development north of the Lake (2012) in which the developer evaluates the Lake for storage capacity. Although there is nothing explicit in the Code that says Lake Tye is a detention facility, all signs indicate that it is. We have a call into the City to confirm.

Water quality treatment will be required per normal in accordance with the 2014 DOE Manual. We will propose the Modular Wetland System from Filterra to meet the enhanced water quality requirement. According to the lake analysis report (for a development to the north), the Lake is elevation is at ~21.0. Based on that we would appear to have adequate grade and cover to engineer the field underdrainage to the current grading concept, and the treatment facility, in the vicinity of the northwest corner of the project site, or slightly north of there but without interfering with the existing baseball field outfield (deep left field).

We have confirmed via DOE flood hazard maps, that a portion of the project is within the flood hazard area, thus necessitating the Special Flood Hazard Area Permit. What that seems to include beyond the normal permit paperwork is the Special Flood Hazard Area plan, which entails showing the Lake, floodplain, vegetation, and grading. An Elevation Certificate won't be required since there are no structures.

Grading *See Drawing F-1.2 and Exhibit H*

The existing fields are built on two distinct "pad" elevations, with the north field at 0.5' to 1.0' higher than the south field. In order to maximize flexibility, the proposed fields all lie on a continuous plane, sloping from the existing high point of 33.85' at the southeast corner downward at 0.5% (1/2 of 1%) to the existing low point of 30.95' at the northwest corner. In establishing a uniform plane, a maximum cut depth of less than 1.5' and a maximum fill depth of less than 1.5' are required, with a total net export of approximately 2,500 cubic yards of material. While the overall grading requirement for the proposed condition is fairly subtle, the net effect on Program Flexibility is considerable and very important to the success of the project design. Refer to Exhibit H Grading Volume Calculations for additional detail.

Water *See Drawing Sheet F-1.4*

The existing irrigation system likely operates at around 70psi and delivers up to 120gpm (gallons per minute) peak to maintain the existing grass surface. The proposed design requires automatic irrigation for lawn areas around the perimeters (specifically about 25,000sf along the south and east sides), but the synthetic turf only rarely needs water, for either evaporative cooling, infill "conditioning", or cleanup. A 2" Schedule 40 PVC mainline loop will service the few necessary 1-1/2" automatic zones,

and hose connections / quick coupler valves will be provided every 200' or so around the field perimeter.

Other Available Resources

As of June 26, 2019 the following project-specific documents are available for review upon request of the Department of Parks & Recreation and are attached here by reference. These documents are listed here as they are referenced for the Project SEPA Environmental Checklist, dated June 26, 2019;

- A Vicinity Maps, Legal Description, and Property Information
- B Design Narrative
- C Color Concept Plan
- D Geotechnical Report
- E Critical Areas Wetlands Review
- F Storm Water Technical Information Report and SWPPP
- G Lighting Summary
- H Grading Volume Calculations
- I Project Drawings

Project Drawings

Sht.	Title	Scale	Prepared by	Date
F-0.0	Cover Sheet	NTS	D. A. Hogan	6-17-19
F-0.1	Topographical Survey	1" = 20'	Harmsen	6-17-19
F-0.2	T.E.S.C. Plan	1" = 20'	LPD	6-17-19
F-0.3	T.E.S.C. Details	NTS	LPD	6-17-19
F-0.4	Demolition Plan	1" = 20'	D. A. Hogan	6-17-19
F-1.1	Layout Plan	1" = 20'	D. A. Hogan	6-17-19
F-1.2	Grading Plan	1" = 20'	D. A. Hogan	6-17-19
F-1.3	Drainage Plan	1" = 20'	D. A. Hogan	6-17-19
F-1.4	Irrigation Plan	1" = 20'	D. A. Hogan	6-17-19
F-1.5	Fencing Plan	1" = 20'	D. A. Hogan	6-17-19
F-1.6	Dimension Plan	1" = 20'	D. A. Hogan	6-17-19
F-2.1	Typical Sections	NTS	D. A. Hogan	6-17-19
F-2.2	Drainage Details	NTS	D. A. Hogan	6-17-19
F-2.3	Washwater Details	NTS	D. A. Hogan	6-17-19
F-2.4	Fencing Details	NTS	D. A. Hogan	6-17-19
F-2.5	Fencing Details	NTS	D. A. Hogan	6-17-19
F-2.6	Softball and Baseball Details	NTS	D. A. Hogan	6-17-19
F-2.7	Softball and Baseball Details	NTS	D. A. Hogan	6-17-19
F-2.8	Softball details	NTS	D. A. Hogan	6-17-19
F-2.9	Site Details	NTS	D. A. Hogan	6-17-19
F-3.1	Composite Layout Plan & Details	1" = 20'	D. A. Hogan	6-17-19
F-3.2	Soccer Layout Plan & Details	1" = 20'	D. A. Hogan	6-17-19
F-3.3	Mod Soccer & Lacrosse Layout Plan	1" = 20'	D. A. Hogan	6-17-19
E-1.0	Electrical Site Plan	1" = 20'	Stantec	6-17-19
E-2.0	Electrical Details & Panel Schedules	NTS	Stantec	6-17-19
S-1.1	Structural Notes & Foundation Details	NTS	KPFF	6-17-19