Project Goals

- **Custom design for the Marshall community.**
- **Facility should be different than any other facility in the area to draw people to Marshall.**
- **Long term vision for the aquatic center thinking beyond today's use.**
- **Flow and operational efficiencies of the facility for users and staff.**

Park Comments

1. Ball field is currently not used often.
2. Current stormwater pond location.
3. Possible new park shop location.
4. Keep skate park open during pool construction.
5. Blind corner is dangerous.
6. Large trees could be planted as batter's eye for baseball field.
7. Move cannon, possibly to park entrance.
8. Bike path could be moved to other side of river.

MARSHALL
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JLG architects

WTI WATER TECHNOLOGY INC.

Existing Facility

Pros:

- Pool is protected, away from roadways.
- Entire facility gets used.
- Bike access to pool is good and heavily used.

Cons:

- Vehicle traffic in and out of facility gets congested.
- There is not enough parking during park events.
- Pool facility entrance does not function well.
- No zero depth entry.
- Restrooms need updating.
- There is not a good space for kids too old for Kid's Pool, but too small for the open Leisure Pool.
- There is no lawn space.
- Minimal shade at the facility.

Pool Programming Exercise

Programs:

1. Open Swim
2. Learn to Swim
3. Competition Swimming
4. Lifeguard Training
5. Water Polo

Pool Type:

1. Lazy River
2. Deep Water Springboard Diving
3. Wave Pool
4. Splash Pad
5. Competition 50M by 25YD

Features:

1. Iconic Water Slide
2. Lazy River
3. Zero Depth Entry
4. Water Crossing Walk
5. Spring Board Diving


Slide Tower
Existing City Maintenance Building
Existing Trail Connection & Pedestrian Bridge
25 Yard Competition Pool
Mechanical / Equipment Building
Floodway and 100-Year Flood Plain
Leisure River
Activity / Zero Depth Pool
Existing Trail Connection
Splash Pad
Redwood River
Existing Skate Park
Bathhouse / Entrance Building
Legion Field Road
Access Drive
Redwood River
Existing Parking Lot (23 spaces)
Alternate Road Access
Parking Lot (166 spaces)
Legion Baseball Field
S 4th Street
Existing Parking Lot (10 spaces) & Entrance from Highway 19
Trail Connection to College Drive
Existing Trail Connection
W College Drive

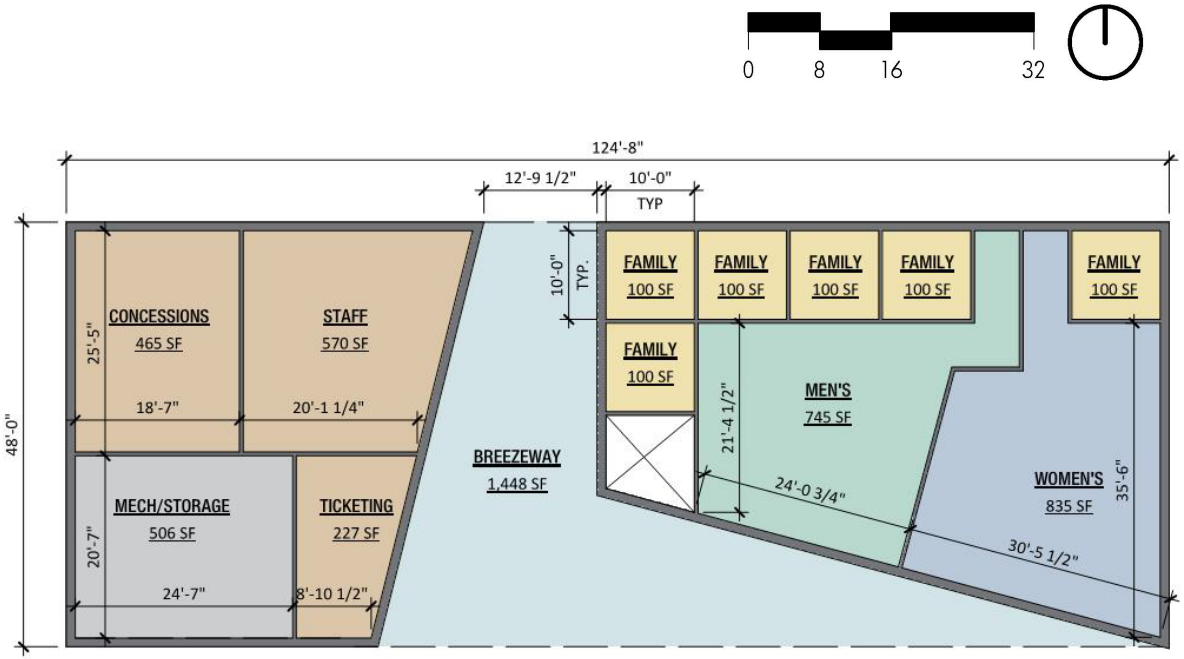
Concept 'A'


Diving Boards
Wibit Wiggle Bridge
Climbing Wall
Fly Tyme Slide
Tube Slide
Stand-Up Slide
Floodway and 100-Year Flood Plain
Existing Trail Connection & Pedestrian Bridge
Shade Structure
25 Yard Competition Pool (4,587 sf)
Pool Facility Fence
15'-0"
Shade Structure
Open Water Play Area
Mechanical / Equipment Building (5,300 sf)
Leisure River (3,300 sf, 330 lf)
Landscaping & Trees (typical)
Redwood River
Redwood River
Zero Depth Entrance
26'-0"
Shade Structure
Activity Pool (7,000 sf)
25'-0"
Splash Pad Fence
Lily Pad Crossing
Under Water Bench
Play Structure
Zero Depth Entry Pool
29'-0"
Artificial Turf
Splash Pad (2,100 sf)
Access Drive
Shade Structure
26'-0"
Bathhouse / Entrance Building (6,000 sf)
Alternate Splash Pad Entrance
Bike Racks

Concept 'A'

Bathhouse Floor Plan

Department	SF	Quantity	Total SF	Notes
Bathhouse			**3,905**	
Tickets	100	1	100	
Family Toilet	100	6	600	With showers
Concessions	400	1	400	
Entry/Exit Lobby	440	1	440	
Storage	120	1	120	
			1,660	
First Aid	105	1	105	Counter/sink
Break Room	275	1	275	
Manager Office	100	1	100	
Kitchenette	0	1	-	
Staff Toilets	70	1	70	1 staff toilet?
Employee Lockers	0	1	-	In break room?
			550	
Mechanical/Electrical	75	1	75	
Storage/Custodial	120	1	120	
Electrical (telecom room)	65	1	65	
Mechanical/Electrical	165	1	165	Bath house side
Janitorial Storage	75	1	75	
			500	
Men's Passage	100	1	100	
Men's Sinks	100	1	100	2 sinks
Men's Toilets	150	1	150	1 toilet, 2 urinals
Men's Showers	85	1	85	2 showers
Men's Changing	100	1	100	
			535	
Women's Passage	125	1	125	
Women's Sinks	100	1	100	2 sinks
Women's Toilets	200	1	200	3 toilets
Women's Showers	85	1	85	2 showers
Women's Changing	150	1	150	1 private changing room
			660	



FIRST FLOOR CONCEPT PLAN

By the Numbers

	Existing Facility:	Option 'A' (25 Yard):	Option 'B' (50 Meter):
Total Water Area	**11,124 sf**	**16,987 sf**	**23,735 sf**
Competition Pool	7,564 sf (lap pool)	4,587 sf	12,397 sf
Activity Pool	1,590 sf (deep water)	7,000 sf	5,626 sf
Leisure River	N/A	3,300 sf	3,612 sf
Splash Pad	1,970 sf (wading pool)	2,100 sf	2,100 sf
Bather Capacity	**665 users**	**744 users**	**1,400 users**
Bath House	**4,068* sf**	**6,000 sf**	**6,000 sf**
Mechanical Building	***Included above**	**5,300 sf**	**5,300 sf**
Parking Provided	**134 spaces**	**199 spaces**	**199** spaces**
Parking Required	147 spaces	205 spaces	273 spaces

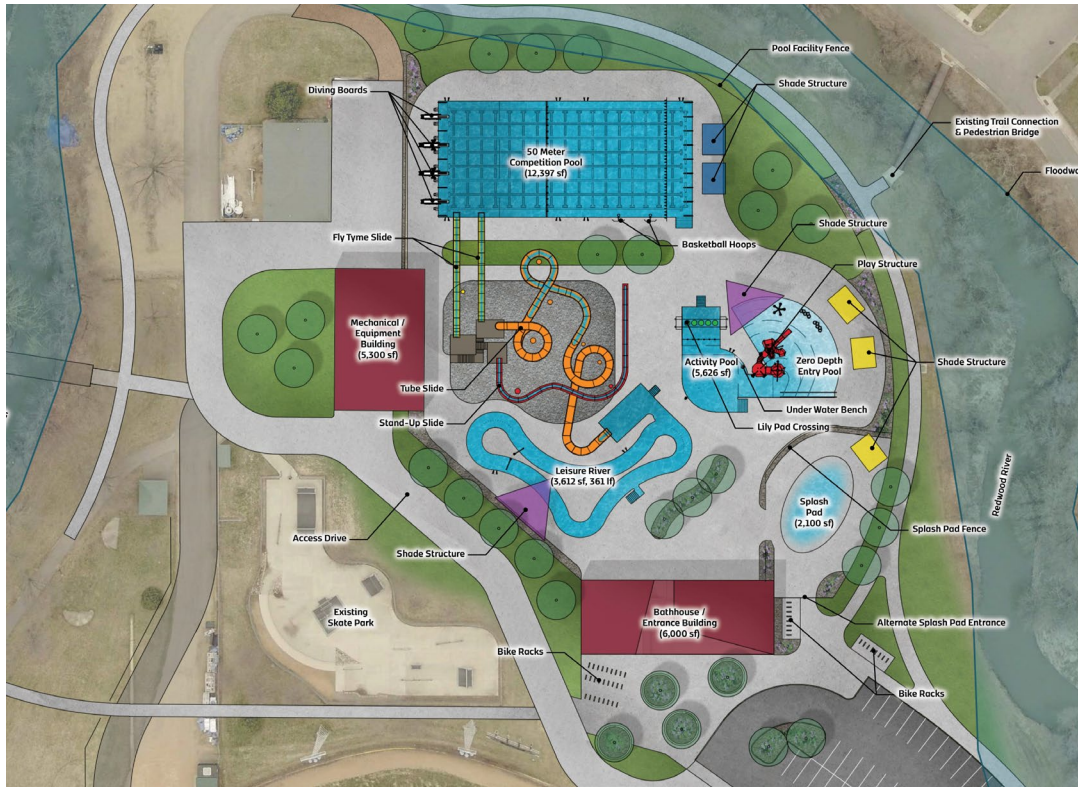
****100 additional spaces available as future expansion to west, along Legion Field Road.**

Costs

Concept 'A' (25 Yard)

$14,192,775 Total Estimated Project Costs

Concept 'B' (50 Meter)



$16,127,455 Total Estimated Project Costs

Costs

Concept 'A' (25 Yard)

Site	$2,768,750
Pools	$5,526,200
Buildings	$2,639,500
Soft*	$3,258,325
Total	**$14,192,775**

*Soft Costs include owner furnished items allowance, concession equipment allowance, construction escalation, contingencies, contractor general conditions, project fees & geotechnical

STOCKWELL

1981 - 2021 40 YEARS IN BUSINESS

TECHNICAL MEMO

SEI No. 21045

Date: September 22, 2021

To: Jessie Dehn
City of Marshall

From: Heidi Condon

Re: Marshall Aquatic Center
Marshall, MN

Stockwell Engineers has completed a preliminary drainage analysis for proposed Marshall Aquatic Center. Surface Water Management Plan Construction Standards Section 30-45 (5)c. outline redevelopment projects that create one or more acres of new and/or fully reconstructed impervious surfaces shall manage stormwater volume and pollutants by applying the new development standard. New development projects are required to achieve no net increase of stormwater discharge volume, discharges of total suspended solids (TSS) and discharge of total phosphorus (TP) from pre-project conditions. The enclosed analysis identifies pre-project conditions at the existing site located at Legion Field Park and compares those values to discharges anticipated from the redeveloped site.

Design standards for stormwater detention facilities constructed in Marshall shall be designed according to the most current technology as reflected in the Minnesota Pollution Control Agency (MPCA) publication, *Protecting Water Quality in Urban Areas*. The proposed site at Legion Field Park lies adjacent to and drains directly into the Redwood River. The Minnesota Pollution Control Agency has identified the Redwood River as an impaired waterway and requires additional protection to meet the Construction General Permit (CGP).

Pre-Developed (Historic) Conditions

Stockwell Engineers used Hydraflow Hydrographs modeling software to calculate Pre-Developed Conditions hydrology, or how much runoff is generated by the site prior to development. Precipitation data was taken from the National Oceanic and Atmospheric Administration 's Atlas 14 Frequency Estimates for Marshall, MN. Pre-Developed land use of the site is assumed to be pasture land, and USGS soil survey indicates that Type C hydrologic soil groups are present over the entire site. Soil Conservation Service (SCS) TR-55 methodology was used to estimate runoff generated by the site prior to any development. The gently sloping site sheds storm runoff directly into the river to the north, east and west. Figure 1 attached depicts delineated subbasin delineations delineated from the topographic survey of the site.

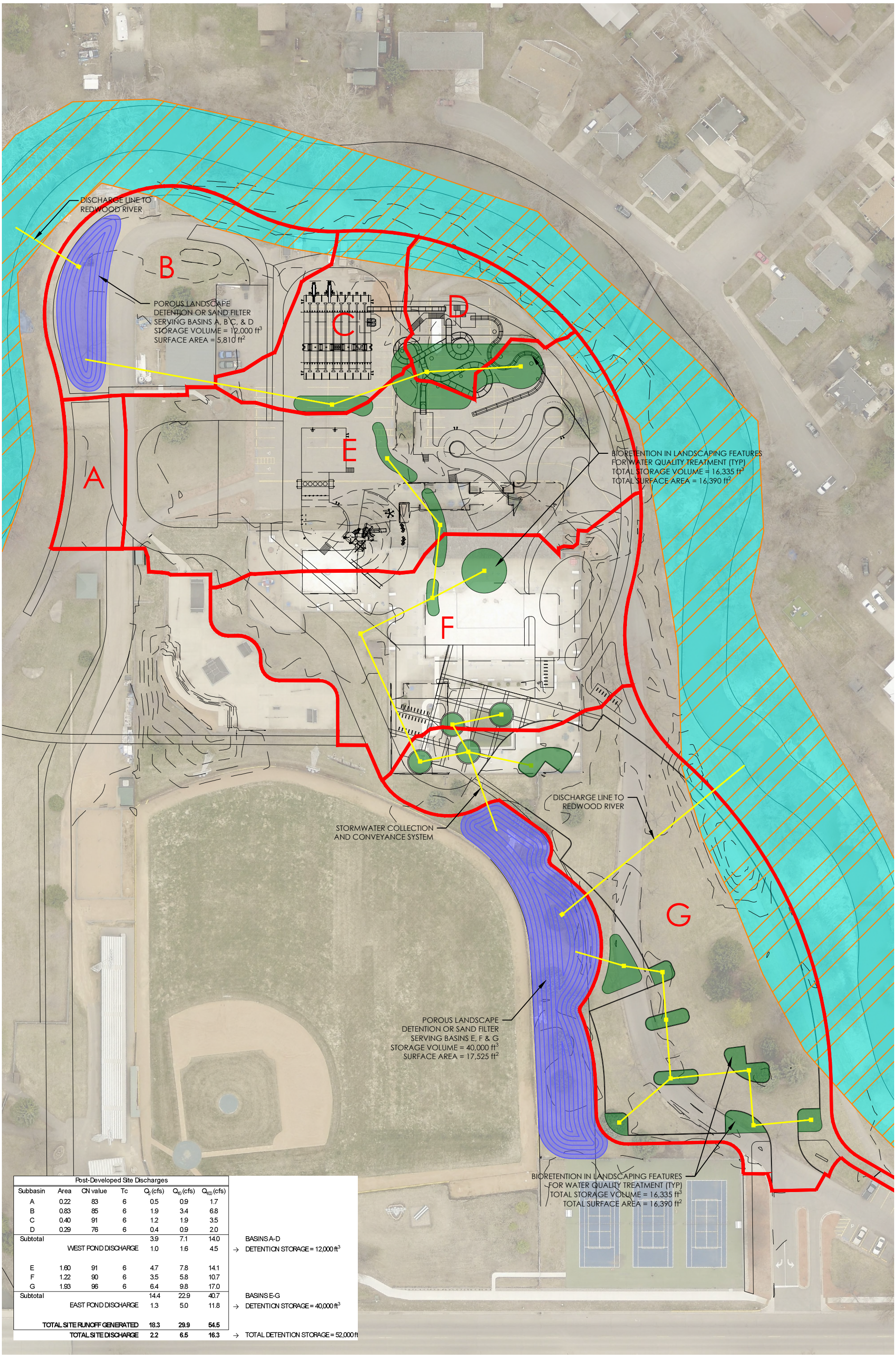
BFEs, as measured to the nearest 0.00'. This process is typically referred to as a "No-Rise" Analysis or floodway encroachment analysis and must be supported by technical data developed by a registered engineer. If the project cannot demonstrate No-Rise, the community may allow it to proceed only after the applicant applies for and receives approval from FEMA for a Conditional Letter of Map Revision (CLOMR).

Approval of the CLOMR allows the community to permit the construction project as presented in the CLOMR, and construction may begin. An approved CLOMR includes a detailed review of the project by FEMA and their mapping partners. A typical CLOMR can take between 6 months and 1 year to get approval from FEMA. A CLOMR is FEMA's comment on a proposed project and does not physically change the map. Once the construction project for which the CLOMR was approved must first be completed and a follow-up Letter of Map Revision (LOMR) reflecting as-built conditions be completed to revise the Flood Insurance Rate Map (FIRM).

Summary

This high-level analysis indicates there may be sufficient space on the site to incorporate the required storage for stormwater detention and water quality needed to meet Engineering Design Standards. The storm-water management analysis will be refined once a grading plan is completed to verify that the depths assumed in the high-level analysis can be achieved and the estimated volumes provided for. The proposed site maximizes use of open spaces and landscape areas to utilize for stormwater management.

Stockwell Engineers would recommend the site at Legion Field Park be reconsidered or revised based on work planned in the regulatory floodway. The process required to meet Federal requirements will delay the project and increase both engineering and construction costs. Any encroachment that includes the placement of fill material within the regulatory floodway will require an in-depth analysis of the Redwood River at this location. The extent of encroachment as shown in the preliminary layout will likely cause a rise significantly higher that 0.00 feet. Mitigation of this rise is unlikely, and a CLOMR would be necessary to get the project permitted.



Post-Developed Site Discharges

Subbasin	Area	CN value	Tc	Q_2 (cfs)	Q_{10} (cfs)	Q_{100} (cfs)	
A	0.22	83	6	0.5	0.9	1.7	
B	0.83	85	6	1.9	3.4	6.8	
C	0.40	91	6	1.2	1.9	3.5	
D	0.29	76	6	0.4	0.9	2.0	
Subtotal				3.9	7.1	14.0	BASINS A-D
		WEST POND DISCHARGE		1.0	1.6	4.5	→ DETENTION STORAGE = 12,000 ft³
E	1.60	91	6	4.7	7.8	14.1	
F	1.22	90	6	3.5	5.8	10.7	
G	1.93	96	6	6.4	9.8	17.0	
Subtotal				14.4	22.9	40.7	BASINS E-G
		EAST POND DISCHARGE		1.3	5.0	11.8	→ DETENTION STORAGE = 40,000 ft³
		TOTAL SITE RUNOFF GENERATED		**18.3**	**29.9**	**54.5**	
		TOTAL SITE DISCHARGE		**2.2**	**6.5**	**16.3**	→ TOTAL DETENTION STORAGE = 52,000 ft

Marshall Aquatic Center | Drainage Analysis | Marshall, MN 09/17/2021

1" = 80'

STOCKWELL ENGINEERS

By the Numbers

	Existing Facility:	Option 'A' (25 Yard):	Option 'C' (Alt. Site):
Total Water Area	**11,124 sf**	**19,587 sf**	**20,387 sf**
Competition Pool	7,564 sf (lap pool)	4,587 sf	4,587 sf
Activity Pool	1,590 sf (deep water)	7,000 sf	6,900 sf
Leisure River	N/A	5,900 sf	5,900 sf
Splash Pad	1,970 sf (wading pool)	2,100 sf	3,000 sf
Bather Capacity	**665 users**	**1,184 users**	**1,232 users**
Bath House	**4,068* sf**	**6,000 sf**	**6,000 sf**
Mechanical Building	***Included above**	**5,300 sf**	**5,300 sf**
Parking Provided	**134 spaces**	**199 spaces**	**220 spaces**
Parking Required	147 spaces	226 spaces	234 spaces

Concept ‘C’

MARSHALL AQUATICS CENTER IMPROVEMENTS

Marshall, MN

11/02/2021 SEI #21045

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