Fredericksburg Riverfront Park

City Council Meeting

July 12, 2016

RHODESIDE&HARWELL

Concept Plan

Promenade & Meadow

Garden & Event Lawn

Play Zone

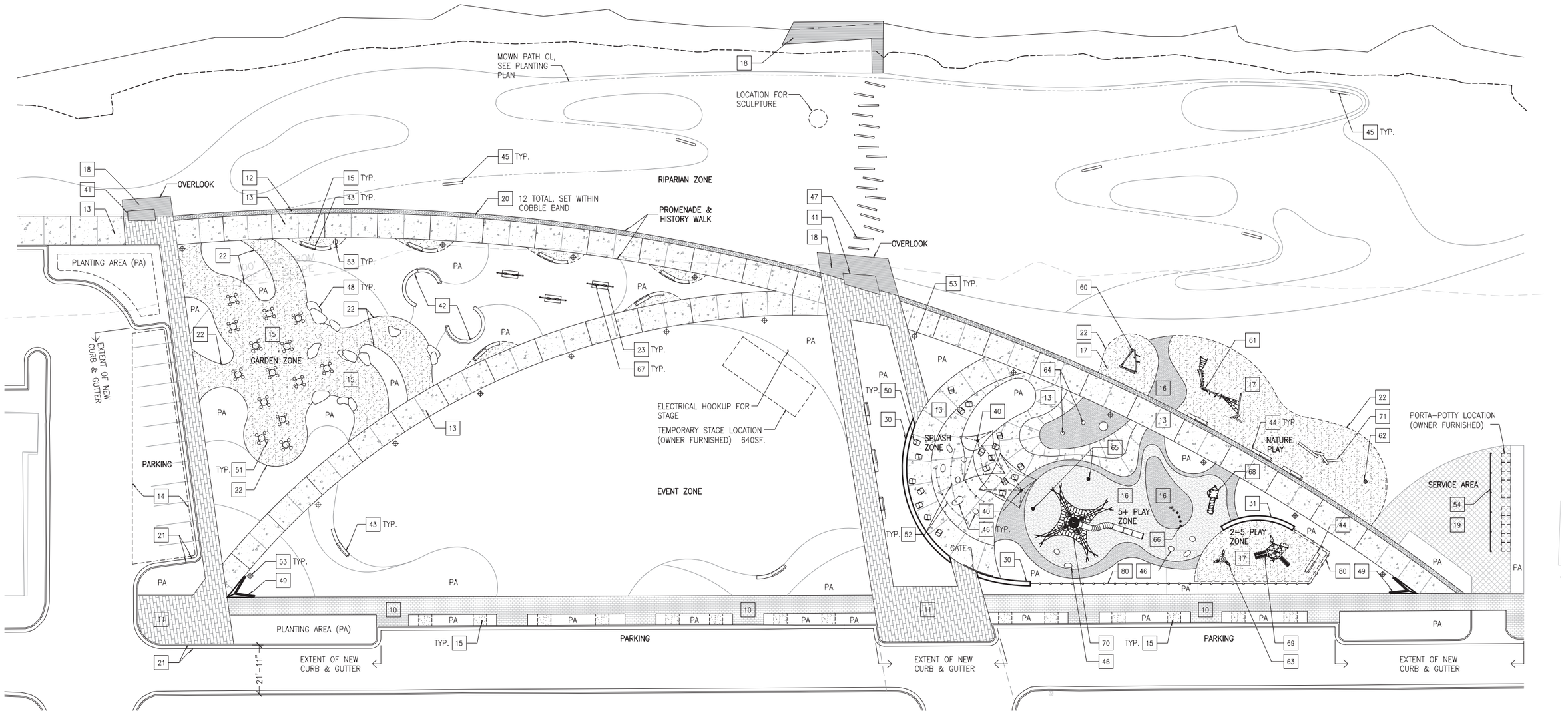
CITY COUNCIL BUDGET

$5,000,000

SCHEMATIC DESIGN COST ESTIMATE

$4,973,819

Materials Plan



LEGEND

- 10 BRICK PAVERS
- 11 PRECAST CONCRETE PAVERS –3"x18"x4" 2–3 COLORS
- 12 RECYCLED GRANITE COBBLE PAVERS –OWNER FURNISHED
- 13 CONCRETE PAVING – BROOM FINISH (ALTERNATE – EXPOSED AGGREGATE FINISH)
- 14 ASPHALT PAVING
- 15 CRUSHED STONE – DECOMPOSED GRANITE
- 16 POURED IN PLACE RUBBER SURFACING –2 COLORS
- 17 ENGINEERED WOOD FIBER
- 18 WOOD DECKING
- 19 REINFORCED TURF – 'GRASSPAVE2' BY INVISIBLE STRUCTURES
- 20 STONE INSET – WITH HISTORICAL INTERPRETATION –GROUND MOUNTED 2'X2' – 12 TOTAL
- 21 CONCRETE CURB & GUTTER
- 22 STEEL EDGE RESTRAINT
- 23 RUBBER TILES – 65 SF.
- 30 FEATURE WALL – PRECAST CONCRETE –24"HT. X 24"W.
- 31 SEAT WALL – PRECAST CONCRETE –18"HT. X 24"W.
- 40 SHADE STRUCTURE – 'VISOR' BY TENSILE SHADE PRODUCTS – 2 TOTAL
- 41 PLATFORM – WOOD DECKING – 18"HT.
- 42 SITE BENCH – TYPE A – PRECAST CONCRETE BASE WITH WOOD DECKING TOP – 2 TOTAL
- 43 SITE BENCH – TYPE B – PRECAST CONCRETE BASE WITH WOOD DECKING TOP – 8 TOTAL
- 44 SITE BENCH – TYPE C – PRECAST CONCRETE BASE WITH WOOD DECKING TOP – 7 TOTAL
- 45 SITE BENCH – TYPE D – TIMBER – EMBED WITH STEEL LEGS – 9' LENGTH – 5 TOTAL
- 46 SITE BENCH – TYPE E – PRECAST CONCRETE – 'STONE BENCH' BY WATERPLAY SOLUTIONS – 11 TOTAL
- 47 TIMBER STEPS – NATURAL WOOD – 8' LENGTH – 17 TOTAL
- 48 BOULDER – 4–5'DIA. – 13 TOTAL
- 49 SIGN COLUMN – STONE VENEER – 2–4' HT. –2 TOTAL
- 50 ADIRONDACK CHAIRS – COMPOSITE BY LOLL DESIGNS – 19 TOTAL
- 51 TABLE & CHAIRS – 'PARC CENTRE' BY LANDSCAPEFORMS – 14 TABLES & 40 CHAIRS TOTAL
- 52 SPRAY NOZZLE – GROUND MOUNTED – 20 TOTAL
- 53 LIGHT FIXTURE – 'FGP' BY LANDSCAPEFORMS – 18 TOTAL
- 54 SCREEN WALL – WOOD – 7' HT.
- 60 *PARKOUR 2 – 'ROBINIA' SERIES – 1 TOTAL
- 61 *PARKOUR 4 – 'ROBINIA' SERIES – 1 TOTAL
- 62 *SPINNER PLATE – 1 TOTAL
- 63 *SEESAW – 'BLAZER' – 1 TOTAL
- 64 *SPINNER BOWL – 2 TOTAL
- 65 *SPICA – 2 TOTAL
- 66 *ORBITS – 4 TOTAL
- 67 *SWING – 'SOLO' INGROUND – 3 TOTAL
- 68 *PCMT 022316 – 'ELEMENTS' SERIES – 1 TOTAL
- 69 *MEGA TOWER PHYSICAL – 'MOMENTS' SERIES – 1 TOTAL
- 70 *TREASURE ISLAND – WITH PLASTIC SLIDE 'COROCORD' SERIES – 1 TOTAL
- 71 BALANCE LOGS – OWNER FURNISHED & INSTALLED
- 80 FENCE WITH GATE – WOOD POST & CABLE RAIL

MHW (MEAN HIGH WATER) LINE

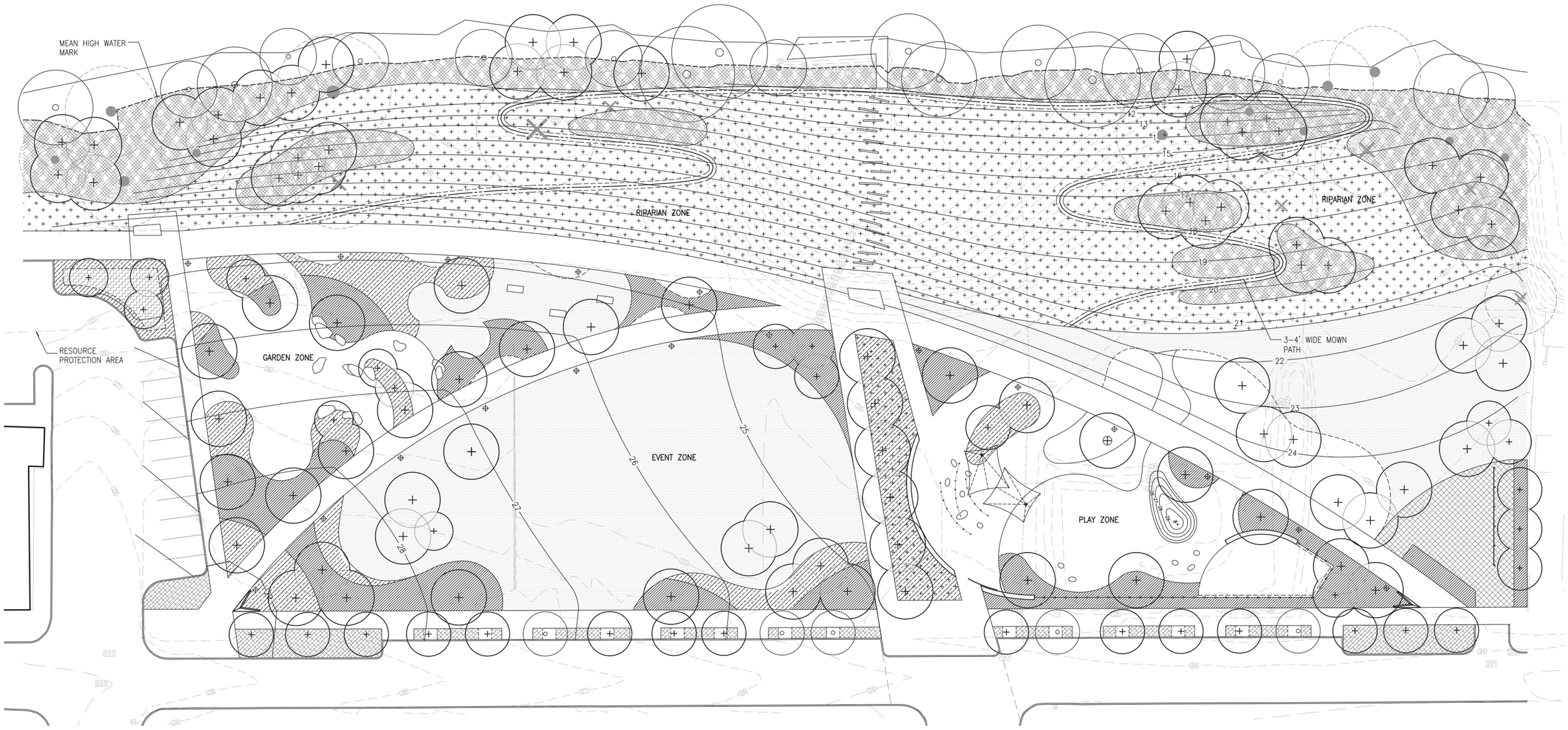
RPA (RESOURCE PROTECTION AREA)

*PLAY EQUIPMENT BY KOMPAN

NORTH

0' 15' 20' 40'
Scale: 1"=20'

Planting Plan



GARDEN ZONE:

HERBACEOUS PLANT MIX:
–PERENNIALS & ORNAMENTAL GRASSES
–1GAL. 18–24"O.C. 5,600 SF. TOTAL

WOODY PLANT MIX:
–SHRUBS
–1GAL. 36"O.C. 11,200 SF. TOTAL

RAIN GARDEN PLANT MIX:
–PERENNIALS, ORNAMENTAL GRASSES & SEDGES
–1QT. 18"O.C. 600 SF. TOTAL

STREETSCAPE PLANT MIX:
–PERENNIALS & ORNAMENTAL GRASSES
–1QT. 18"O.C. 1700 SF. TOTAL
–SHRUBS
–1GAL. 36"O.C. 800 SF. TOTAL

RIPARIAN ZONE:

MEADOW PLANT MIX:
–HERBACEOUS PERENNIALS & GRASSES
–SEED 35,200 SF. TOTAL = 100%
–LANDSCAPE PLUGS & 1QT. DRIFTS 2–3'OC. = 20%

WOODY THICKET PLANT MIX:
–SHRUBS
–1QT. 24"O.C. 10,300 SF. TOTAL
–1GAL. 36"O.C. 10,300 SF. TOTAL

EVENT ZONE:

LAWN:
–SEED 33,300 SF. TOTAL

EXISTING TREE – TO BE CUT TO GROUND. ROOTS LEFT IN PLACE TO ENCOURAGE SPROUTING

EXISTING TREE – TO BE REMOVED

EXISTING TREE – TO REMAIN – MAJOR PRUNING

LARGE SHADE TREE –1½"–2"CAL. – 65 TOTAL

ORNAMENTAL TREE –8–10'HT. – 56 TOTAL

MOWN PATH 3–4' — PATH OFFSET / PATH CENTERLINE / PATH OFFSET

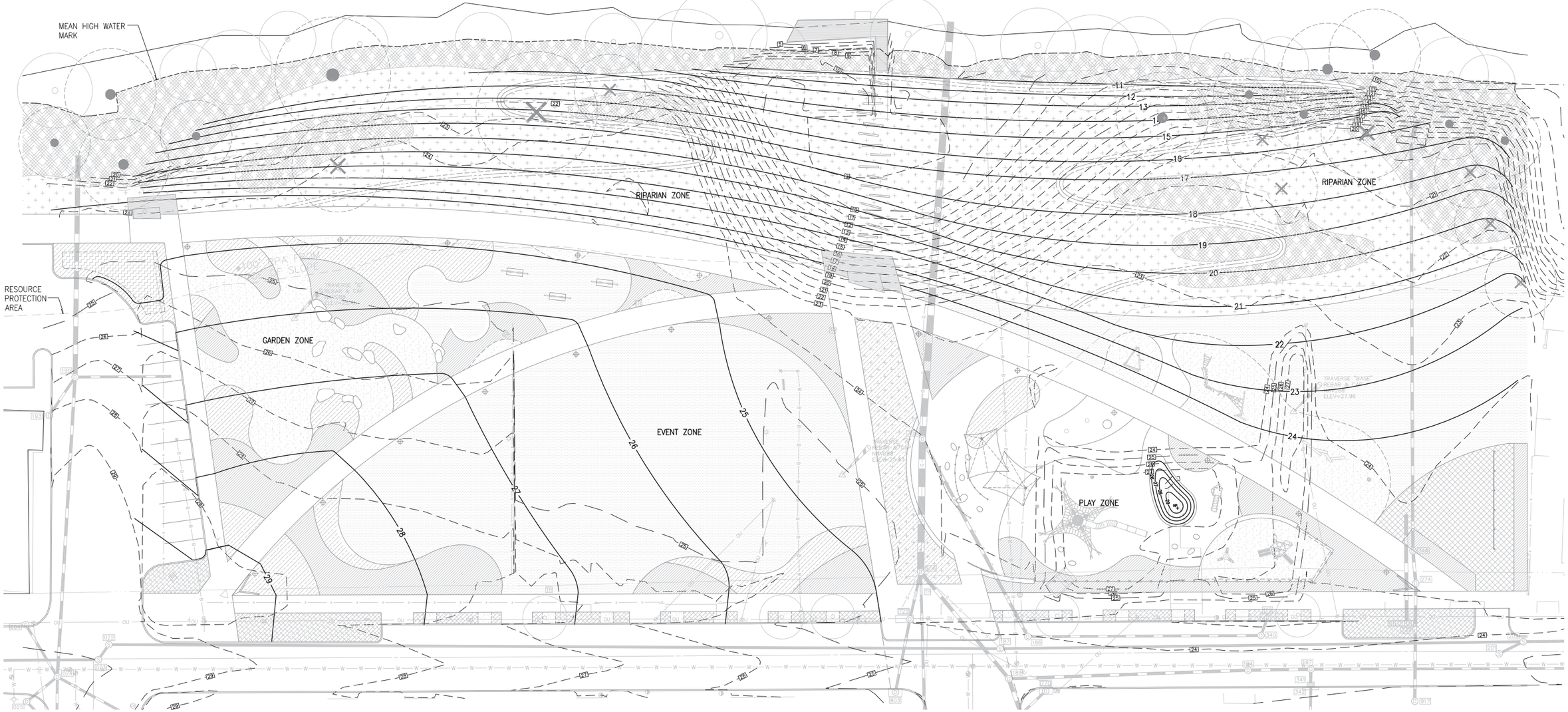
MHW (MEAN HIGH WATER) LINE

RPA (RESOURCE PROTECTION AREA)

NORTH

0' 15' 20' 40'
Scale: 1"=20'

Grading Plan



EXISTING GRADE

PROPOSED GRADE

MHW (MEAN HIGH WATER) LINE

RPA (RESOURCE PROTECTION AREA)

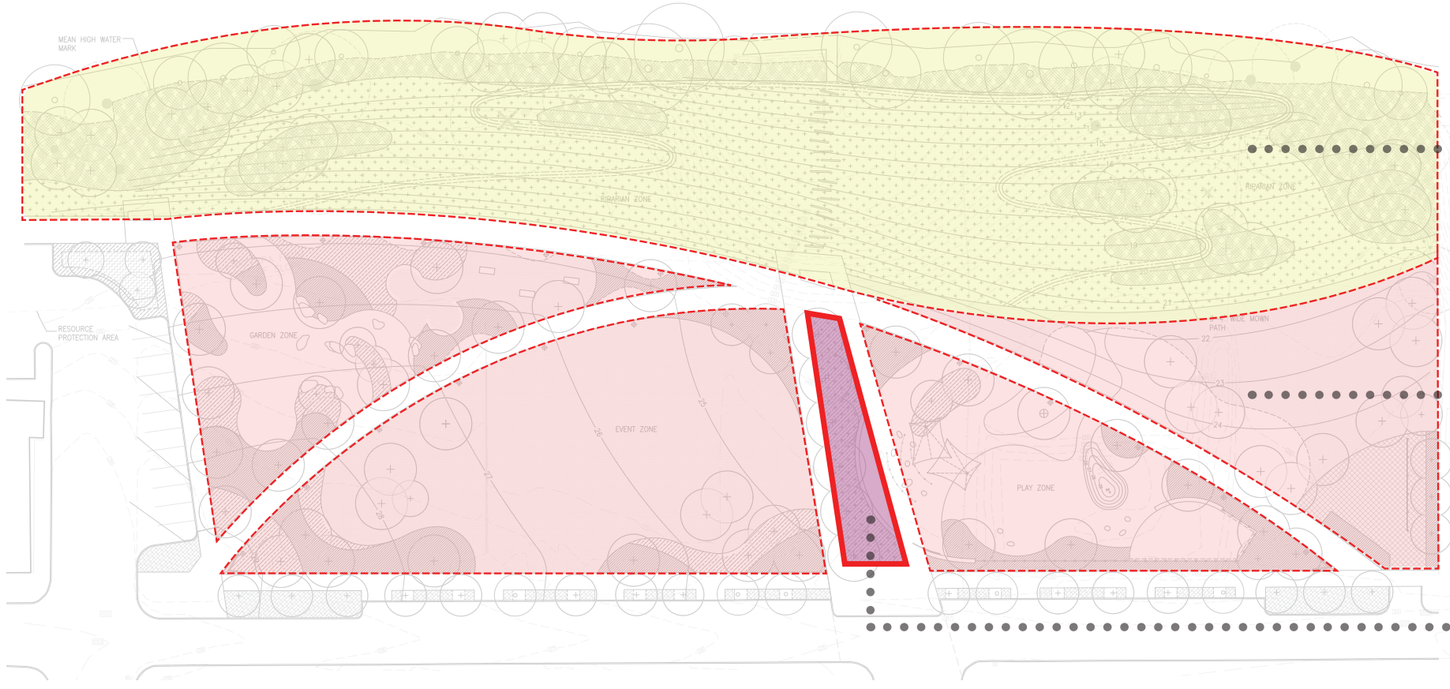
Item	Description	Volume (Cubic Yards) with no contigency	Volume Estimate (15% increase) (Cubic Yards)	Notes
Excavation - On Site	excavate	2053.23	**2361.22**	baseline cut minus unsuitable fill and existing pavement
Excavation - Haul Off	excavate and remove from site	3314.46	**3811.63**	unsuitable fill, existing pavement, excess top soil (not needed in ultimate condition)
Borrow - On Site	place and compact	2053.23	**2361.22**	on site excavated material placed and compacted on site
Borrow - Haul On	bring to site; place and compact	1913.37	**2200.37**	Needed borrow minus the on site stockpiles

NORTH

0' 15' 20' 40'

Scale: 1"=20'

Planting Concept



RIPARIAN ZONE

WILD PLANT SPECIES

NATURALISTIC LANDSCAPE

GARDEN ZONE

CULTIVARS OF PLANTS IN RIPARIAN ZONE

DESIGNED LANDSCAPE

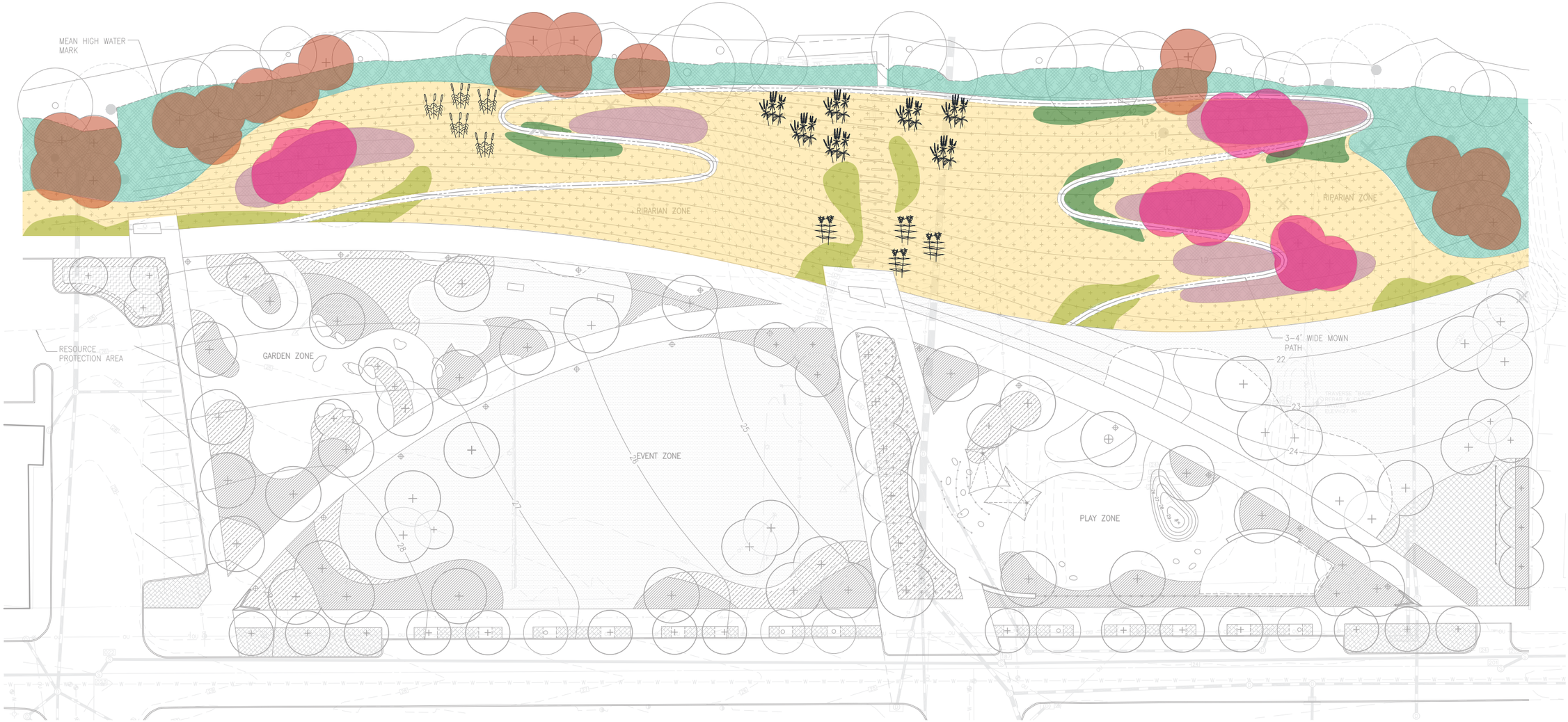
RIPARIAN + GARDEN ZONE

RIPARIAN ZONE

GARDEN ZONE

RIPARIAN + GARDEN ZONE

Planting Typologies



Medium Live Plant Drfits

Tall Live Plant Drifts

Seeded Meadow

Riverview Accent Mix

Shrub Masses

Dock Accent Mix

Riparian Edge

Dock Path Accent Mix

Riparian Trees

Meadow Trees

Planting Typologies

LARRY WEANER
landscape associates

Fredericksburg Riverfront Park

DRAFT RPA Zone Re-Vegetation Memo

***Date:* July 1, 2016**

Note: All planting, installation and management procedures described in this document exclude any areas that fall within the 5' High Water Zone unless specifically stated as applying to said areas.

i. **Existing Vegetative Cover**:

The existing vegetative cover of this section of the park consists largely of non-native lawn grasses and their associated forb species. Directly adjacent to the river is a degraded riparian woodland edge. A mix of desirable natives (*Betula nigra, Platanus occidentalis, Celtis occidentalis*, etc.) and weedy or less desirable species (*Acer negundo, Acer saccharinum, Ailanthus altissima*, and *Ulmus pumila*) are present in this area. The herbaceous and woody understory of the riparian woodland edge is largely composed of ruderal natives and naturalized or invasive non-natives (*Alliaria petiolata, Fallopia japonica, Lonicera japonica, Toxicodendron radicans, Rubus sp*, etc.) most of which are of little ecological or aesthetic value or are weedy species that will inhibit the establishment of desired species.

ii. **Proposed Vegetative Cover:**

Our proposed plantings fall into six categories:

- *Seeded Meadow*-Comprised of regionally native plants appropriate to a river adjacent full sun meadow to replace the majority of the existing lawn in the RPA
- *Live Plant Drifts and Accents*- Also comprised of regionally native plants appropriate to a river adjacent full sun meadow, these drifts will be incorporated into the Seeded Meadow, and would act to increase diversity, and highlight views/areas of interest
- *Shrub Masses*- Native shrub masses will increase diversity, habitat value and will help to guide views across the site and down to the river
- *Riparian Edge*- The riparian woodland understory currently contains some of the most problematic species on site; a new native understory layer will be introduced to add to aesthetics, increase bank stability, decrease particulate erosion, and increase habitat value
- *Meadow Trees*- Native, smaller stature meadow trees will provide shade along meadow pathways, act as an overstory for some of the shrub masses, help to frame view across the meadow and down to the river, and provide additional aesthetic and ecological value throughout the year.
- *Riparian Trees*- As the canopy layer of the riparian woodland edge needs to be culled to remove undesirable species, new canopy tree will be added to help stabilize the bank, increase habitat value, and frame views down to the water

iii. **Steps to Eliminate Existing Vegetation:**

Lawn areas and newly graded will be sprayed with a two application of an aquatic approved herbicide. The riparian woodland understory will receive a similar herbicide treatment, however due to the tenacity of some of the weed species growing there currently, repeat applications will be necessary to ensure lasting weed control. Woody species may be sprayed or receive cut and paint applications of herbicide as necessary and then brush cut or cut-to-ground and stump ground. The site will be cut in between sprays to allow the seed bank to respond and for the subsequent flush of new weeds to also be controlled.

iv. **Proposed Stabilization Methods**:

There are several bank stabilization methods appropriate for use on this site. These suggested methodologies will be excluded from areas within the mean high water mark. These areas will be left untouched apart from selective pruning.

- *Increased Vegetative Cover*- By increasing the vegetative cover on site the likelihood of extreme and regular erosion is curtailed, and the increased network of roots helps to bind the soil together and strengthen bank stability. On this site vegetative cover will increase through seeding and the addition of live-plants (herbaceous plants, trees and shrubs).
- *Compost Blanket)*- A compost blanket is a thin layer of well-decayed organic compost spread evenly over the existing soil which assists in run-off reduction, erosion control, and vegetation establishment. It is a recommended practice for hillsides and watershed drainage areas. Seed can be mixed into the compost and the slow release of nutrients the compost provides helps with establishment of new vegetation and the stability of existing plants. The compost slows over-ground flow, halts splash erosion and absorbs and holds large amounts of runoff; increasing percolation and evaporation of stormwater. Unlike other compost addition practices, aside from minimal surface scarification, very little soil disturbance is needed to successfully apply a compost blanket. A compost blanket application is ideally suited to this site and one composed of fairly low nutrient material (to prevent a flush of weed growth) will be specified for this application.
- *Structural Measures*- In particularly steep areas or areas with extreme existing erosion issues, structural measures such as biodegradable erosion control fabric, etc. may need to be installed (likely in combination with the methods mentioned above).

v. **Installation Methodology –** Much of the methodology will depend on phasing, project sequencing and the time allowed from site grading completion to project completion. After site grading, weed control, and selective pruning and needed tree removal has occurred, new woody plants will be installed by hand on site. Next, the seed-mix infused compost blanket will be added to the delineated areas where runoff control is needed. Any areas where compost blankets are not needed can be seeded using appropriate equipment. Erosion control matting will then be installed in any areas with extreme existing erosion issues or that will be newly graded to a greater than 3:1 slope.

Herbaceous live plant drifts will then be planted by hand in the areas specified. This can either happen right after seeding or one growing season later which allows for a simpler first year weed control regime.

vi. **Long Term Management Requirements –** *Long term management is a very site specific and adaptive process however; these are the types of tasks that are typically required:*

Woody Plants:

Gator bags or similar product should be kept filled during the first growing season after planting. Plants should be monitored on a monthly basis and pruning of dead growth should occur as needed. Evergreens may need an anti-desiccant applied prior to the first winter after planting.

Seeded Meadow Areas:

Year 1: In the first growing season after seeding, cut all seeded growth to 4-6" on a monthly basis. This allows the seedlings of seeded species to receive the needed sunlight to continue to grow while preventing any faster growing weedy species from going to seed. Meadows should be monitored on a monthly basis for pernicious weeds that may been to controlled with spot spraying or more targeted cutting.

Year 2 and after: Cut all meadow growth to a height of 4-6" in March. This prevents the establishment of woody growth and ensures that the previous year's growth does not detract for the aesthetic value of new growth. The meadow may need a second cutting in June to control cool season grasses. Monitor meadow on a bi-monthly basis for pernicious weeds that may been to controlled with spot spraying or more targeted cutting.

Live Herbaceous Plant Drift Areas:

If not installed with a hydrogel slurry, these may need occasional watering the first year to help with establishment. These drifts should not be cut on a monthly basis if installed with the initial seeding. These zones would have to be more carefully string trimmed or hand cut to control weeds the first growing season.

Existing Trees and Shrubs:

These should be monitored for their long term health on an annual basis and any needed pruning or removals should occur as needed.

Area within the 5' High Water Zone:

While all effort should be made to minimize disturbance in these areas, they should be monitored for pernicious weeds that may invade the newly planted areas and these species should either be spot sprayed or cut (do not disturb roots). Any new woody saplings that are effecting the desired sightlines down the river as per the new design should be removed.

Existing Trees and Shrubs (including in the 5' High Water Zone):

Cost Estimate

	PROJECT PHASE & SECTOR	Base	
		Riverfront Park	
	GROSS FLOOR AREA:		
DIV	SCOPE OF WORK		Amount
G	BUILDING SITEWORK		2,900,148
	Subtotal - Building & Site Cost of Work		**2,900,148**
	******General Conditions******		
	General Conditions	12.50%	362,519
	Testing & Inspections	0.40%	11,601
	******General Conditions******		**374,119**
	******Bonds / Insurance******		
	- Performance & Payment Bond	2.00%	65,485
	- Builder's Risk Insurance	0.50%	16,699
	- General Liability Insurance	0.50%	16,782
	******Bonds / Insurance******		**98,966**
	****** Design Contingency******	15.00%	**505,985**
	******Overhead & Fee******		
	Contractor's G&A	5.00%	193,961
	Contractor's FEE	5.00%	193,961
	******Overhead & Fee******		**387,922**
	Subtotal Cost of Work		**4,267,141**
	******Construction Escalation******		
	- Escalation at 2.5%/year:	2.50%	106,679
	Anticip. Mid Pt of Construction	1-Aug-17	
	******Construction Escalation******		**106,679**
	******Design Cost******		
	- Design	LS	600,000
	******Design******		**600,000**
	ESTIMATED CONTRACT COST (ECC)		**$4,973,819**

RHODESIDE&HARWELL