1. Wastewater Wetland Park Sub-System
Current wastewater ponds sited on a massive flood zone are replaced with constructed wet tallgrass prairie ponds. Treatment ponds are integrated in a series of wetland retention and detention ponds designed in hierarchical system that filters and remediates water as it flows through the ponds and eventually into nearby rivers and streams.

2. West Aquifer Park Sub-System
On a massive flood zone and atop the West Fargo Aquifer, the Sheyenne Diversion Channel is be removed, replaced with the native wet tallgrass prairie ecosystem. In a report, the Bureau of Reclamation suggested a recharge method for buried aquifers of this type (where recharge sources are unknown), to drill wells. On their recommendation specialized wells are commissioned for design. These wells are then strategically placed near final ponding zones where filtration and remediation stages would assure quality water recharge of the aquifer.

3. Buffalo Aquifer Park Sub-System
Located East and partially atop of the Buffalo Aquifer, on a site of severe flooding, this location maximizes recharge of the aquifer. Vertical infiltration is allowed through sandy zones prior to reaching the clay lined portion of the Red River Basin. Locating the Park upslope to the East of this zone allows collection of surficial water flow. Thus, surficial water flows horizontally downslope into the wetland park where it is filtered and remediated by movement through the system, maximizing water quality as it reaches zones of infiltration.

All three parks feature interwoven trail systems with detailed interpretation and educational components, interpretive, figurative, and literal, potentially with Educational Research Centers located in the parks, sponsored civically, governmentally through University, or through private sources.

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1. Urban parks highly focus on the integrated interpretive education that tells the story of the Red River Park System. The aim of these interpretive elements is to educate residents on the great utility and service this high-performance landscape system provides them. Locally commissioned public art is designed to figuratively iterate different functions of the system, the water cycle, the journey of water down slope, the function of a prairie plant, the recharge of an aquifer, and so on and so forth. Wet tallgrass prairie is still implemented, often more formalized and structured in the form of bioswales or lining sidewalk or plaza planting beds to complement the downtown aesthetic, while still performing their functional utility.

2. Urban river parks merge the above intervention with riparian prairie functions of slope stabilization. Nearer the urban core, these parks implement a more grade of hard engineering structure, such as that of suspension reinforced caisson anchored flood walls acting as a recreation riverwalk/trail, slope stabilizer, and flood protection for the urban core. As the outer park system, mitigating flood measurements in retention and detention, bioswales, and series of check and control dams regulating agricultural drainage flow, act to lower the flood level of the urban core, it becomes available for structured recreation that reaches downstream and touches the river.

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Annual Community Celebration
Prairie grasses require burning every 3-5 years. With a stratified staggered approach, prairie burning festivals are held annually in celebration of the unique and beautiful Red River prairie landscape.

Burning different sectors of the park system every year, creates a civic bonding of the community in an entirely rare and identifying way. These festivals close down the streets of Downtown, creating a pedestrian mall, bringing in markets, music, food, drink, and folly, all in the theme of the ‘Red’. These festivals close down the streets of Downtown, creating a pedestrian mall, bringing in markets, music, food, drink, and folly, all in the theme of the ‘Red’.

Every year, just when the buds of the Sugar Maple begin to open, this festival turns a once mournful spring that used to drown the city, into a celebratory jubilation of the underlying ecosystems that serves the community with the utmost function and utility.

vc.hefti@gmail.com
Buffalo Aquifer Park (Rural Sub-system 3)
preventative highly functional tallgrass prairie wetland eco-park
NDSU Department of Landscape Architecture | THESIS | May 2012

FLOATING SUSPENSION BRIDGE (typ.)

floating dock
6' resin treated 2x4s & 4x4s
1x6" galvanized steel eye bolts
1" steel washer
1" rebar reinforced poured concrete (to bedrock)
1/4" steel cable

Ru
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FLOATING SUSPENSION BRIDGE ANCHOR/BASE SYSTEM

1' rebar reinforced poured concrete engraved trail marker
dock structure slides vertical with water level along trail marker
3 1/2" corten steel support
4" steel hex blots
1' reinforced poured concrete (to bedrock)
4x4 and corten support meet
1' concrete base for structural trail support at low water levels
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7" max LED lamp; positively correlated light intensity with wind speed

180’x1’ diameter (25’x1/4’ min) carbon fiber reinforced resin poles tapering toward the peak to 2” (1” min)
poles contain electrodes between piezoelectric ceramic discs. A cable connects every other electrode another cable connecting the others. When the pole sways, the stack of piezoelectric disks is compressed, generating a current through the electrodes.

20’ diameter max concrete chamber
housing a torque generator that converts the kinetic energy of poles into electrical energy with an array of current generating shock absorbers, using the forced movement of fluid through the cylinders.
part of the wind energy goes to power a set of pumps that move water from a lower chamber to an upper one. This acts as a back up generator, allowing water from the upper chamber to flow down to the lower chamber, turning the pumps into generators.
Suburban Park Sub-System (1)
mitigative neighborhood park with integrated wetland functions
NDSU Department of Landscape Architecture | THESIS | May 2012

cantilever bench (4c)
cast concrete
2x4 treated wood
stainless steel support
LED underlighting
rock underbed

carbon fiber windstalls (4a)
planting
red maple
don dogwood
mulch bed
patterned brick (4b)

planting
preserved riparian old growth
reconstructed wet tallgrass prairie
engraved mile marker
rebar reinforced concrete
rock bed
permeable asphalt trail

planting
preserved riparian old growth
reconstructed wet tallgrass prairie
reconstructed river edge
geoweb groomed trail (ru3a)

SUBURBAN TRAIL SYSTEM (typ.)

HOLOSCENE | cutsheet 5b

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Suburban Park Sub-System
mitigative neighborhood park with integrated wetland functions
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high albedo will help melt snow/ice in winter

CANTILEVER BENCH (typ.)

HOLOSCENE | cutsheet 2c
The presumption of Fargo is altered when looking under the surface. Fargo has a unique segmented culture of agriculture/education/professional. Visually, I correlate brick revealed through worn concrete downtown. This coupled with the recent trend in downtown revitalization, expresses a tie between those layers and the dual act of preservation of history with forward-thinking integration.