# Attachment 1

## Ned Ped Write-Up of Sustainability & Utility

Biomimetic Functions Performed by the Ned Ped path:

1. Conveyance of water (flood control/water quality)
2. Habitat (aquatic/riparian/wildlife habitat)
3. Transportation and connectivity* (fish/wildlife migration, pedestrian/bike movement)

Biomimetic Form/Process/Ecosystem:

1. Form – Mixed compacted alluvium and rock benches adjacent to perennial stream with
2. Process – Infiltration nearby streambed through large pore space alluvium/ conveyance of water through alluvial transport to downstream / small stream pooling for pollutant deposition / riparian plant pollutant uptake / habitat creation through / compacted alluvium and rocks allow transportation adjacent to stream and to water source when absent perennial flow
3. Ecosystem – Montane Forest

Related biomimicry notes:

1. Resilience is created through variation, redundancy, decentralization
2. Function is performed through use of sunlight, water, gravity

Measures of Success for the Project:

1. Maintenance of biomimetic functions
2. Cost-effectivess
3. Experience (placemaking/aesthetics)
4. Measured Sustainability (Resolution 2011-21/LEED)
5. Maintainable

Notes from the November 16, 2012 Meeting in Relation to Measures of Success:

Maintenance of biomimetic functions (1):

1. Flood control could be greatly enhanced by managing upstream flow the community center and parking lot through onsite retention and infiltration systems

2. Some level of flooding at periodic intervals is to be expected
3. Infiltration could be enhanced:
    a. The path could contain a pattern/strip of looser material for increased infiltration
    b. Infiltration in the road itself could be enhanced to promote infiltration
    c. Use of substrates with varying porosity and porous pipes could be used to guide and infiltrate flows
4. Habitat could be enhanced by selective pooling areas
    a. Alternating small pools/infiltration strips adjacent to 2nd downstream of the roundabout are proposed
    b. Opportunity areas for pooling should be considered utilizing stream enhancement and/or culvert design (e.g., library/roundabout/existing culverts)

Cost-Effective (2)

1. Not paving the street and incorporating curb/gutter more cost-effective
2. A porous pavement system is not likely cost-effective due to high product/install costs
3. Porous pavement systems/porous concrete/porous asphalt all come with a cost associated with the uncertainty in terms of maintenance and reliability

Experience (3)

1. Traffic speed reduction/ traffic calming should be considered
2. People don't want sidewalks (but don't seem to mind the downtown gridded cement walks)
3. A maintained path with connectivity allows for more reliable multi-modal transportation
4. The path needs to be distinct – Distinction draws people to use the path, enhancing connectivity, safety from traffic through distinct color/elevation/texture
5. Library area habitat enhancements would provide habitat/function with a unique option for education/

Measured Sustainability (4)

1. Use of concrete rubble by the lake would meet siginificant LEED criteria for local materials
2. Connectivity of public services (post office/library/transit) meets LEED ND

Maintenance (5):

1. Whatever is used, if it can become a standard for Nederland, that will make it much more maintainable. If equipment is needed like a vac-truck, then it could be used at multiple areas
2. Materials need to be:
    a. Permeable
    b. Plowable
    c. Safe (textured/delineated)
3. Creekside owners need education on planting, preventing deterioration to function and design, and to enable habitat/function enhancement through planting and land use
4. Restrictions on re-development could be considered based on function

Presentation – Need to identify opportunities that meet multiple metrics for success are met and slides for those (e.g., library – aesthetics/habitat/function)

* Connectivity is a measure of how the landscape facilities animal movement between resources patches and promotes continuous movement of wildlife over long distances.