

NedPed Project – Applying Biomimicry’s Life Principles to the Project Design

	BIOMIMICRY'S LIFE PRINCIPLES								
FUNCTION		EVOLVE TO SURVIVE: <i>Continually incorporate & embody information to ensure enduring performance.</i>	BE RESOURCE EFFICIENT: <i>Skillfully & conservatively take advantage of local resources & opportunities.</i>	ADAPT TO CHANGING CONDITIONS: <i>Appropriately respond to dynamic contexts.</i>	INTEGRATE DEVELOPMENT AND GROWTH: <i>Invest optimally in strategies that promote both development and growth.</i>	BE LOCALLY ATTUNED AND RESPONSIVE: <i>Fit into and integrate with the surrounding environment.</i>	USE LIFE FRIENDLY CHEMISTRY: <i>Use chemistry that supports life processes.</i>	BARRIERS	NOTES
Applicable to All Functions	Meet Nederland’s Sustainability Vision	*Educate Ned population on system needs, functions, benefits & stewardship responsibilities . Use library for signs.	* No paving for road or pathways. *Connectivity of public services (post office, library, transit) would meet LEED requirements.	* Place restrictions on redevelopment based on retaining system functions. Review redevelopment options as the system changes.	* Place restrictions on redevelopment based on retaining system functions to integrate system upgrades with changing growth patterns. *The Town needs to develop a sustainability master plan, and process for implementation.	*Material selected for project should become a Nederland standard. *Educate Ned population on system needs, functions, benefits & stewardship responsibilities. Use library for signs.	Consider LCA of materials selected for project.	* There are 7 master plans for the Town without enough correlation between plans.	
Conveyance of Water	Flood Control: Transport Excess Water	* Some level of flooding is to be expected. Town should have process to note and track changes in excess water and incorporate this information into system upgrades.	* Use of concrete rubble by the lake would make use of local material. *Materials selected should be permeable.	* Enhance infiltration in the road. * Some level of flooding is to be expected. * Use substrates with varying porosity and porous pipes to guide infiltration flows.	* Upstream flow managed by onsite retention and infiltration system.	* Incorporate bio swales into the design. * Alternate small pools & infiltration strips adjacent to 2 nd St. below the roundabout.		* Colorado water laws places 48 hour hold restriction on rainwater. * Not enough room for bio swales in easement. * Quantifiable metrics required by design do not include those achieved by permeable pavement.	* Where would you place retention pond? * If road is paved, must add features to increase infiltration. * Must consider maintenance cost and reliability of porous pavement * Utilize stream enhancement and culvert design to increase pooling.
	Recharge Groundwater	* If groundwater levels are measured, assure that this information is available to the planning department.	* Materials selected should be permeable.	* Enhance infiltration in the road.		* Incorporate bio swales into the design. * Alternate small pools & infiltration strips adjacent to 2 nd St. below the roundabout.			
	Water Quality			* Some level of flooding is to be expected. * Use substrates with	* Upstream flow managed by onsite retention and			* Not enough room for bio swales in easement. * Quantifiable metrics	

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				<p>varying porosity and porous pipes to guide infiltration flows. * Incorporate bio swales into the design.</p>	<p>infiltration system. * Incorporate bio swales into the design.</p>			<p>required by design do not include those achieved by permeable pavement.</p>	
Provide Natural Habitat	Protect Aquatic Life					* Incorporate bio swales into the design.			* Enhance habitat by selective pooling.

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SYSTEM GOAL		EVOLVE TO SURVIVE: <i>Continually incorporate & embody information to ensure enduring performance.</i>	BE RESOURCE EFFICIENT: <i>Skillfully & conservatively take advantage of local resources & opportunities.</i>	ADAPT TO CHANGING CONDITIONS: <i>Appropriately respond to dynamic contexts.</i>	INTEGRATE DEVELOPMENT AND GROWTH: <i>Invest optimally in strategies that promote both development and growth.</i>	BE LOCALLY ATTUNED AND RESPONSIVE: <i>Fit into and integrate with the surrounding environment.</i>	USE LIFE FRIENDLY CHEMISTRY: <i>Use chemistry that supports life processes.</i>	BARRIERS	NOTES
	Provide Riparian Habitat		*Alternate small pools & infiltration strips adjacent to 2 nd St. below roundabout.	* Some level of flooding is to be expected.					
	Provide Wildlife Habitat								
Provide Transportation	Fish Movement				* Culvert replacement will allow for more room for migration.				* Is this a goal of the Town? * All culverts need to be replaced and they will be larger, providing more access to fish and wildlife.
	Wildlife Migration				* Culvert replacement will allow for more room for migration.				
	Pedestrian Movement		* No street paving, incorporate curb and gutter. * Residents do not want sidewalks.			* Residents do not want sidewalks. * Materials selected should be plowable. * Maintained pathway with connectivity promotes multi-modal transportation. * Distinct pathway to draw people’ use (color, texture, elevation).		*Cannot have curb and gutter without paving. * Must be ADA compliant.	* Consider traffic speed reduction and traffic calming. * Residents want a pathway, not a paved sidewalk.
	Bike Movement		* No street paving, incorporate curb and gutter. *Residents do not want sidewalks.			* Materials selected should be plowable.		*Cannot have curb and gutter without paving. * Is there enough room for bikes and people?	* How will a road meander affect bikes? * Consider traffic speed reduction and traffic calming.
	Auto Movement		* No street paving, incorporate curb and gutter.			* Materials selected should be plowable. *Residents do not want sidewalks. * Parking spaces designated for snow storage in winter		* Delivery trucks block road.	* Consider traffic speed reduction and traffic calming.