Agenda

Working group participation as match for SWG

Review of April meeting and other core team meetings

General Reminders

   Next meeting on 6/18/2013
   Upcoming meetings related to connectivity
   ICOET:  http://www.icoet.net/ICOET_2013/
       June 23-27, 2013 in Scottsdale, Arizona, USA.
   ICCB:  http://www.conbio.org/mini-sites/iccb-2013
       Connecting Systems, Disciplines and Stakeholders
       July 21-25, 2013 • Baltimore, MD, USA

Transportation Enhancement funding awarded to Bedminster for turtle tunnels

Economic Feasibility Analysis, Cost-Benefit discussion – continued

Explore Federal Funding Opportunities
• Notes

• Recent/upcoming meetings related to connectivity:
  
  • NJ Open Space and Farmland Preservation Coordinators’ Roundtable Discussion (DVRPC; NJCF)
    • April 19, 2013
  
  • ICOET: http://www.icoet.net/ICOET_2013/
    • June 23-27, 2013 in Scottsdale, Arizona, USA.
  
  • ICCB: http://www.conbio.org/mini-sites/iccb-2013
    • Connecting Systems, Disciplines and Stakeholders
    • July 21-25, 2013 in Baltimore, MD, USA
Mapping Core Team Meeting Four
April 16th, 9:30 – 11:30 am
Assunpink Wildlife Management Area, Main Office

Meeting attendees: Rick Brown, Margaret Conroy, Gretchen Fowles, Gylla MacGregor, Amy Miller, Kristin Munafo, Lisa Stern, Larry Torok, Kelly Triece, Pete Winkler, Brian Zarate

- Core area definition
  - Sub-team discussed sets of environmental and biological data that could help define core areas
  - Gets complex quickly
  - One possibility could be a nested or hierarchical approach to capture differing needs of 3-4 suites of species (road volume, patch size threshold)

- Step back and sort out species
  - Which species are we focusing on
  - What data are available for those species
  - What are the basic habitat and movement needs of those species
Guidance Document Core Team Meeting Four

April 16, 12-2pm

Assunpink Wildlife Management Area, Main Building

Meeting attendees: Debra Firman, Gretchen Fowles, Kristin Munafo, Paula Scelsi, Lisa Stern, Joe Sweger, Kelly Triece, Nellie Tsipoura, Charu Vaidya, Brian Zarate

Meeting Notes:

- Review of past core team meetings and the first full working group webinar.
- Review of past meeting notes to confirm the group is addressing past meeting ideas and questions.
- A sub-team has been developing draft BMP “hotsheets” for the design and installation of wildlife crossing structures. These hotsheets would be specific for a particular crossing structure type and/or targeted towards a particular taxonomic group of species. Once a draft BMP is finalized, we will pitch the BMP to target audiences, such as project engineers, for critical review and feedback. One idea is create a realistic project scenario that an engineer may encounter and ask them to design a crossing structure using the information provided and the BMP document.
- We reviewed some economic-feasibility analysis papers from CA to give us ideas on promoting the cost-benefit of connectivity planning.
Communication Core Team Meeting Four  
April 16th, 2:30 -4:30  
Assunpink Wildlife Management Area, Main Office

**Meeting attendees:** Gretchen Fowles, Andrea Kornbluh, Brian Zarate, MacKenzie Hall, Jim Sciascia, Audrey Wendolowski

- Discussed format for a habitat connectivity synopsis that could be presented to the public
  - Leave current ppt as is
  - Work on putting together a short video piece
- Discussed possibilities for a public Habitat Connectivity website
  - Ideally stand-alone site with own url
  - Perhaps media student(s) to help develop, create content, and maintain it

**Tasks:**
- Research website options and possibility of seeking help from communication department of a local university
- Review working group website and consider improvements, such as how to facilitate research collaboration
- Review newly categorized task list and start prioritizing
• One of 12 eligible activities: reduce vehicle-caused wildlife mortality while maintaining habitat connectivity

• Applied for funding for 3 wildlife mitigation projects in northern NJ
THE RIVER ROAD PROJECT

• Freshwater Wetlands Permit June 2011
• Flood Hazard Permit July 2012
• Project Design
  • 2,200 feet of turtle fencing
  • 4 tunnels spaced about once every 400+ feet in the prime corridor
• Montclair Study
  • Silt fence and funnel traps from March 14 – May 26, 2010
  • 754 captures
    • 10 amphibian species, 62% toads, 3 snapping turtles
• DOR Wood Turtles – 2006, 2009
• Several live wood turtles north of roadway (opp. side of river)
NOTE: TERMINAL AND END POSTS SHALL BE SET IN CLASS 'C' CONCRETE FOOTINGS—12" DIA. X 37" DEPTH

NOTES:
1. HARDWARE CLOTH FENCING SHALL BE EMBEDDED 9" MAXIMUM CONTINUOUSLY WITH FENCING.
2. SEE FENCE DETAIL AT CULVERT ON SHEET 7.

PROPOSED TURTLE FENCING DETAIL
NOT TO SCALE
NOTE: TURTLE FENCE TO BE BROUGHT UP TO CULVERT OPENING.

ROAD SECTION TURTLE CROSSING CULVERT PROFILE
NOT TO SCALE
FRAME TO BE EMBEDDED IN MORTAR ALL AROUND

FRAME & GRATE SHALL BE HEAVY DUTY CAMPBELL #4529

EXISTING ROAD

SOIL BOTTOM
6" THICK MINIMUM
8–1/4" MAXIMUM

LIFT RING, (TYP)

1" DIAMETER x 6" DEEP ALIGNMENT HOLE (TYP)

FOUNDATION STONE, COARSE AGGREGATE NO. 57, 6" THICK

SECTION
ECONOMIC ANALYSIS

• Driver safety
  • Research focuses on large ungulates.

• Regional mitigation planning
  • Pinelands/Highlands?

• Natural Resource Damage Assessments
  • Possibly useful for quantifying non-action, i.e., if crossing structure are not installed, this is the value of the wildlife that will be lost if killed by vehicles attempting to cross the roadway or that will not be able to interact with other sub-populations.

• Economic Analysis
For transportation agencies to be excited about the program, the answer should include: (1) enhanced environmental quality over time; (2) improvements to project delivery schedules and costs; (3) management of the risk that regulatory agencies or personalities can trigger bad surprises; and (4) environmental performance measures that support innovative financing, such as design-build contracting.

Kevin Moody, Ecologist
FHWA Office of Technical Services - RC (ENV TST)
61 Forsyth St. S.W., Suite 17T26
Atlanta, GA 30303
12.6 HIGHWAY SAFETY/WILDLIFE-VEHICLE COLLISIONS
With only a modest increase in AADT, we estimated that the annual benefit from reduced elk-vehicle collisions at nearly $1 million/year. The benefit derived from wildlife underpasses, ungulate-proof fencing, and other measures along SR 260 will exceed their cost in approximately 15 years.
This study reports an ongoing process in California, USA, that brings together two public infrastructure agencies – the California Departments of Transportation (Caltrans) and Water Resources (DWR) – with the regulatory agencies that oversee their mitigation requirements – the United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (DFG), United States Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), and United States Army Corps of Engineers (ACE). In addition The Nature Conservancy (TNC), University of California, Davis (UCD), Resources Legacy Fund Foundation (RLFF), and EDAW/AECOM (a consulting firm) are participating in a technical advisory capacity. This collaboration will produce a framework for bundling mitigation requirements of multiple projects at a large regional scale (1000’s of square kilometers). The framework will include identified processes for upfront approval by the regulatory agencies, that will permit the mitigation planning process to occur earlier, or even in advance of, project implementation than is usually the case. The goal is to increase the positive ecological impact of offsite compensatory mitigation while reducing the overall cost of infrastructure project implementation.
LIMITATIONS OF THE CURRENT SYSTEM
The current project-by-project, species-by-species mitigation approach has limitations and can often result in:
- small, unconnected, and poorly protected mitigation sites;
- infrastructure project delays when suitable mitigation land can’t be found;
- high compensation ratios required, adding to mitigation cost, when the infrastructure project has a temporal impact on affected species and habitats;
- limited or no connection to regional or statewide conservation priorities;
- more costly and challenging management of protected or restored mitigation land
- additive administrative or support costs associated with requirements to develop separate agreements and implementation mechanisms for each individual project.
CHALLENGING ISSUES
Despite the time savings, reduced costs, and improved environmental and community benefits of regional advance mitigation, it is often difficult to put into practice. The challenges include:

- uncertainty about obtaining assurances from state and federal regulatory agencies that natural resources secured and conserved for mitigation in advance of project-specific environmental review will ultimately be acceptable;
- uncertainty about which projects will mature beyond planning infancy to reality (thereby justifying the cost and effort of proactive mitigation acquisitions);
- providing ongoing monitoring and management of environmentally sensitive lands for any lengthy period of time in advance of a specifically identified mitigation need;
- obtaining funding, because mitigation dollars are usually tied to specific infrastructure projects, and advance mitigation projects usually have to compete for funds with infrastructure projects.
They both advised that this needs to be run through Resource Equivalency Analysis (REA) and/or a Habitat Equivalency Analysis (HEA) software package to come up with numbers that we're being asked for. There is no "magic number" that is assigned to an individual turtle.

Sherry said that on spill projects she's worked they've contracted a consultant to complete the NRDA and/or a HEA and then billed that to the responsible party. She recommended this group:


Variables in a HEA such as turtle life expectancy, age to sexual maturity, habitat preferences, along with identifying site(s) where mitigation can/should take place.
1. Identify goal(s) to be achieved.

2. Define regulatory or non-regulatory options that achieve goal(s) in Step 1 (above), and a baseline for comparison.

3. Identify groups affected by rule (or rule change).

5. Develop information on costs, benefits, and other outcomes for each option.
Step One: Identify the goal(s) to be achieved through rulemaking

The first step in conducting an EA is to clearly identify the goal(s) to be achieved or problem(s) to be addressed by the rule and demonstrate the need for government action. The goal(s) should be described with sufficient detail and context to allow the development of several regulatory (or non-regulatory) options useful for achieving the goal(s). For example, a goal might be to reduce or limit the amount of total suspended solids in surface waters of the State.
Step Two: Identify several options (regulatory and/or non-regulatory) and a baseline against which to compare alternatives

The baseline scenario can usually be defined as the status quo, or “no action” scenario, including no change to an existing rule. Economic analysis in rulemaking compares the anticipated outcomes of several rulemaking choices against the alternative of taking no new regulatory action (the baseline). A thorough economic analysis provides decision makers and other interested parties with a detailed picture of the gains, if any, that can be anticipated from each option identified. The two tasks (after NY GORR 2008) for this step are:

1. **Identifying a baseline**
   The appropriate baseline for most proposals is maintaining the status quo, or taking no new regulatory action.

2. **Identifying alternatives**
   …cultivate an approach to regulations that values performance-based outcomes and compliance.” Rule managers should strive to employ, where applicable, non-regulatory approaches to meet the goals of the rule. These are often voluntary approaches and sharing of information/best management practices within an industry or between industries. When regulatory approaches are necessary, rules should strive to use market-based alternatives (e.g., offsets, surety bonds, tradable emissions permits, fees, etc.) and performance-based alternatives before turning to design-based standards.
Programs should also try to avoid adverse economic impacts or overly complex requirements on individuals, businesses, overburdened communities and local government agencies. Rule managers should be prepared to document that alternatives to the proposed rule were considered. When identifying alternative regulatory options, rule managers may wish to look at possible variations on what they are considering proposing, such as using different compliance dates, different enforcement methods, phase-in periods, etc.

Where several alternatives along a continuum exist, rule managers may wish to consider how each will affect the economic analysis. In many cases, both the costs and benefits from regulatory action increase as the rule is made more stringent. In such cases, it is essential to consider the costs and benefits “on the margin”.
Step Three: Identify groups affected by the rule

The impacts from regulatory and non-regulatory actions may vary across industries, people and geographic areas of the state. Rule managers must identify who will be affected by each of the regulatory or non-regulatory options under consideration. This step may also be helpful in identifying stakeholders to include in the stakeholder process. Conversely, stakeholder input can help inform the economic analysis. Usually a comparison of the “physical” impacts of the rule (e.g. tons of pollution avoided, level of water quality achieved, etc.) to the baseline will help identify the likely affected groups. The effects on relevant groups can be either positive or negative and possibly both if the rule is large and complex. Once identified, these are the parties that are considered to be relevant for the remainder of the analysis. The primary focus of the economic analysis should be at the state level; that is, on costs and benefits felt by residents, businesses, and other entities in New Jersey. Economic analysis focuses on the effects of rules on human society; in standard economic practice, impacts on ecosystems and other non-human components of the natural environment are analyzed in terms of their benefit or cost to society, e.g., the water retention and filtration value of forests, the amount society is willing to pay to protect an endangered species, etc.
Step Five: Develop detailed impact information

The impacts (costs and benefits) of a regulatory or non-regulatory option may be either direct or indirect. Impacts can be thought of as inputs (what must be done to implement and administer the proposed regulatory action) and outputs (what will be realized from the proposed regulatory action). Inputs and outputs for a specific alternative are measured against the baseline (usually “no action”) scenario. Priority should be given to those impacts that are important enough to potentially change the rank ordering of the main alternatives in the analysis; highly speculative or minor impacts may not be worth significant attention.
1. Direct costs
The direct costs of a rule are the compliance costs for the regulated parties to implement the proposed action or meet the proposed criteria, and the cost for oversight bodies (your program and/or others) to administer it. These typically include labor, equipment, energy and materials.
2. *Direct benefits*

The direct benefits of a proposed rule are the favorable impacts caused by the changes that will be made or required by the rule. Direct benefits may be tangible and fairly easy to quantify, such as budgetary savings or a reduction of staff resources where a duplicative or unnecessary procedure is to be eliminated. However, benefits can be tangible but difficult to quantify, such as the benefit of protecting an endangered species. Positive impacts can also be intangible, such as where a rule change creates increased flexibility in administering a program. Staff should take a broad view when identifying direct benefits, and attempt to include all favorable impacts, whether direct or indirect, tangible or intangible. The analysis should include a description of how, and with what degree of certainty, the benefits can be measured.
3. *Indirect costs and benefits*

Rule managers should also identify and account for the indirect, ancillary, or second-order costs and benefits of the rule. The terminology used for these impacts is not standardized, although the term “ancillary” is usually reserved for benefits.
2. Resource valuations

In some cases the impacts of a rule may involve increases or decreases in the value of a natural resource, e.g. a tract of land. In assessing natural resource values, economists frequently divide sources of value into use value (ecosystem services and other benefits from directly or indirectly using the land) and non-use value (existence, option, and bequest values). Rule managers can consult relevant literature for examples of each type of value.

Some examples of literature on non-use values:
NJDEP, 2007: Valuing New Jersey’s Natural Capital: An assessment of the economic value of the State’s natural resources.
## FEDERAL TRANSPORTATION FUNDING

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Notes</th>
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<tbody>
<tr>
<td><strong>Highway Safety Improvement Program (HSIP)</strong></td>
<td>This program is for high-risk rural areas. To be eligible for these funds, WVC mitigation projects need to be part of a State's Strategic Highway Safety Plan.</td>
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<tr>
<td><strong>Bridge</strong></td>
<td>Bridge projects can provide an opportunity to funnel wildlife under bridges. This solution can be achieved with limited wildlife exclusion fencing and a limited extension to the length of a bridge. By directing wildlife under bridges, the hazard from the road is no longer an issue.</td>
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<tr>
<td><strong>Interstate Maintenance, Surface Transportation, National Highway Programs</strong></td>
<td>Incorporate WVC mitigations into reconstruction and maintenance projects that are funded by these programs.</td>
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<tr>
<td><strong>Planning, Environment, and Realty (HEP) Programs</strong></td>
<td>Other Federal transportation resources for WVC mitigation can be found in DOT agencies and programs.</td>
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<tr>
<td><strong>Public Lands Highways Discretionary Program</strong></td>
<td>This program funds projects on an annual basis in 11 western States that contain at least 3 percent of the total public land in the United States.</td>
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<tr>
<td><strong>Surface Transportation Environment and Planning Cooperative Research Program (STEP)</strong></td>
<td>STEP is the sole source of funds for all FHWA research on planning and environmental issues.</td>
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<tr>
<td><strong>Technology Deployment Program</strong></td>
<td>FHWA administers this program, which includes the Innovative Bridge Research and Deployment (IBRD) program. The IBRD program is intended to promote, demonstrate, evaluate, and document innovative designs, materials, and construction methods for bridges and other highway structures.</td>
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<tr>
<td><strong>Transportation Enhancement Program (TEP)</strong></td>
<td>TEP funds transportation-related projects that are designed to strengthen the cultural, aesthetic, and environmental aspects of the U.S. intermodal transportation system, thus offering communities non-traditional transportation choices.</td>
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<td>Program Name</td>
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<td>Federal Lands Highway Program (FLHP)</td>
<td>The primary purpose of this program is to provide funding for a coordinated program that concentrates on public roads that are located on Federal lands and are not the responsibility of State or local government. The FLHP roads are primarily used for recreational travel and tourism, protect and enhance natural resources, sustained economic development in rural areas, and necessary transportation access for Native Americans.</td>
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<tr>
<td>Coordinated Federal Lands Highway Technology Implementation Program (CTIP)</td>
<td>This is a cooperative technology deployment and sharing program between the FHWA Office of Federal Lands Highway and Federal land management agencies. It provides a forum for identifying, studying, documenting, and transferring new technology to the transportation community. Many new innovative technologies, such as measures allowing fish to pass through culverts, have been funded through the CTIP program. CTIP funds are normally used for technology projects related to transportation networks on Federal public lands. Research projects are not eligible under this program.</td>
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<tr>
<td>Federal Transit Administration (FTA)</td>
<td>The FTA has grant programs to fund transit-related planning and other projects.</td>
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<tr>
<td>State and Community Highway Safety Program</td>
<td>The National Highway Traffic Safety Administration administers this program and provides grants to States, federally recognized Tribes, the District of Columbia, Puerto Rico, American Samoa, Guam, Northern Marianas, and the Virgin Islands.</td>
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