August 2, 2010

Dear Mr. Grant:

We have reviewed your association's application to construct the Horseshoe Falls Dam Fish Passage Restoration project. The fish passage project will install a denil fish ladder at the left abutment for anadromous fish and eel passage. Also, repairs and modifications to the existing spillway and raceway will be performed. Project partners on this ARRA funded project include RIDEM (FWS), NOAA NMFS Restoration Center, USFWS, RI-CRMC and others. Work includes installing: a fish entrance at the downstream channel, turning and resting pools, in-channel baffles, grating for maintenance access, channels, riprap, temporary cofferdams and other work. The project is shown on the attached plans titled “Pawcatuck River Fish Passage Restoration” dated “April 2010.”

Based on the information you have provided, we have determined that the proposed activity, which includes a discharge of dredged or fill material into waters or wetlands, will have only minimal individual or cumulative impacts on waters of the United States, including wetlands. Therefore, this work is authorized as a Category 2 activity under the attached Federal permit known as the Rhode Island Programmatic General Permit (PGP). This work must be performed in accordance with the terms and conditions of the PGP and the following special condition.

There will be a Memorandum of Agreement (MOA) between the RI-HPHC (RI-SHPO) and NOAA Restoration Center. The MOA is not finalized. When that MOA is finished and signed it will be made a special condition of this permit.

You are responsible for complying with all of the PGP’s requirements. Please review the attached PGP carefully, in particular the PGP conditions beginning on Page 7, to familiarize yourself with its contents. You should ensure that whoever does the work fully understands the requirements and that a copy of the permit document and this authorization letter are at the project site throughout the time the work is underway.
This authorization expires on February 13, 2012, unless the PGP is modified, suspended or revoked. You must complete the work authorized herein by February 13, 2012. If you do not, you must contact this office to determine the need for further authorization before continuing the activity. We recommend you contact us before this permit expires to discuss a time extension or permit reissuance.

If you change the plans or construction methods for work within our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

This authorization requires you to complete and return the enclosed Work Start Notification Form to this office at least two weeks before the anticipated starting date. You must also complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation.

This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law, as listed on Page 2 of the PGP. Performing work not specifically authorized by this determination or failing to comply with any special condition(s) provided above or all the terms and conditions of the PGP may subject you to the enforcement provisions of our regulations.

We continually strive to improve our customer service. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://per2.nwp.usace.army.mil/survey.html

Please contact Michael Elliott of my staff, at (978) 318-8131 if you have any questions.

Sincerely,

Diane M. Ray
Chief, Permits & Enforcement Branch
Regulatory Division

Attachments
Copy Furnished:
SAS
Nils Wiberg, P.E.
Fuss & O'Neill
317 Iron Horse Way, Suite 204
Providence, Rhode Island 02908

Andy Manca
Office of Customer and Technical Assistance
RI Dept of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908-5767

James Turek
NOAA Restoration Center
28 Tarzwell Drive
Narragansett, Rhode Island 02882
The capacity of a major roadway is generally considered to be used for peak-hour traffic. In work zones of a multi-lane roadway, the following design guidelines are adopted to determine the number of vehicles that can be accommodated on the roadway. The speed capacity of a major roadway is generally considered to be used for peak-hour traffic. In work zones of a multi-lane roadway, the following design guidelines are adopted to determine the number of vehicles that can be accommodated on the roadway.

**WORK ZONE SPACING**

- Work zone spacing should be consistent with the lane closure type and the expected traffic volume.
- Larger work zones may be required for higher volumes and longer lane closures.

**CHANNELIZING DEVICES SPACING**

- Taper: 20 feet
- Tangerine (work zone): 10 feet
- Downstream taper: 20 feet

**MEASURED AVERAGE WORK ZONE CAPACITIES**

<table>
<thead>
<tr>
<th>Number of Lanes</th>
<th>Speed (mph)</th>
<th>Average Capacity (vph)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**LEGEND**

- H2: REFLECTIVE PLACARD
- H5: WORK ZONE
- P: POLICE DETAIL
- D: TRAFFIC ATTENDANT
- T: TEMPORARY TRAFFIC CONTROL
- F: CHANNELIZING DEVICES
- S: SIGNS
- W: WORK ZONE BARRIER

**NOTES**

1. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

   - TABLE 5.0-2: TAPER LENGTH

2. **CHANNELIZING DEVICES SPACING**

   - TAPER: 20 FEET
   - TANGERINE (WORK ZONE): 10 FEET
   - DOWNSTREAM TAPER: 20 FEET

3. **MEASURED AVERAGE WORK ZONE CAPACITIES**

   - NUMBER OF LANES: 2
   - SPEED (MPH): 50
   - AVERAGE CAPACITY (VPH): 1400

4. **LEGEND**

   - WORK ZONE
   - WORK ZONE BARRIER
   - CHANNELIZING DEVICES
   - SIGNS
   - POLICE DETAIL
   - TRAFFIC ATTENDANT

5. **NOTES**

   - WORK ZONE SPACING
   - CHANNELIZING DEVICES SPACING
   - MEASURED AVERAGE WORK ZONE CAPACITIES

6. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

   - TABLE 5.0-2: TAPER LENGTH

7. **WORK ZONE SPACING**

   - WORK ZONE LENGTH: 200 FEET

8. **CHANNELIZING DEVICES SPACING**

   - TAPER: 20 FEET
   - TANGERINE (WORK ZONE): 10 FEET
   - DOWNSTREAM TAPER: 20 FEET

9. **MEASURED AVERAGE WORK ZONE CAPACITIES**

   - NUMBER OF LANES: 2
   - SPEED (MPH): 50
   - AVERAGE CAPACITY (VPH): 1400

10. **LEGEND**

    - WORK ZONE
    - WORK ZONE BARRIER
    - CHANNELIZING DEVICES
    - SIGNS
    - POLICE DETAIL
    - TRAFFIC ATTENDANT

11. **NOTES**

    - WORK ZONE SPACING
    - CHANNELIZING DEVICES SPACING
    - MEASURED AVERAGE WORK ZONE CAPACITIES

12. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

    - TABLE 5.0-2: TAPER LENGTH

13. **WORK ZONE SPACING**

    - WORK ZONE LENGTH: 200 FEET

14. **CHANNELIZING DEVICES SPACING**

    - TAPER: 20 FEET
    - TANGERINE (WORK ZONE): 10 FEET
    - DOWNSTREAM TAPER: 20 FEET

15. **MEASURED AVERAGE WORK ZONE CAPACITIES**

    - NUMBER OF LANES: 2
    - SPEED (MPH): 50
    - AVERAGE CAPACITY (VPH): 1400

16. **LEGEND**

    - WORK ZONE
    - WORK ZONE BARRIER
    - CHANNELIZING DEVICES
    - SIGNS
    - POLICE DETAIL
    - TRAFFIC ATTENDANT

17. **NOTES**

    - WORK ZONE SPACING
    - CHANNELIZING DEVICES SPACING
    - MEASURED AVERAGE WORK ZONE CAPACITIES

18. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

    - TABLE 5.0-2: TAPER LENGTH

19. **WORK ZONE SPACING**

    - WORK ZONE LENGTH: 200 FEET

20. **CHANNELIZING DEVICES SPACING**

    - TAPER: 20 FEET
    - TANGERINE (WORK ZONE): 10 FEET
    - DOWNSTREAM TAPER: 20 FEET

21. **MEASURED AVERAGE WORK ZONE CAPACITIES**

    - NUMBER OF LANES: 2
    - SPEED (MPH): 50
    - AVERAGE CAPACITY (VPH): 1400

22. **LEGEND**

    - WORK ZONE
    - WORK ZONE BARRIER
    - CHANNELIZING DEVICES
    - SIGNS
    - POLICE DETAIL
    - TRAFFIC ATTENDANT

23. **NOTES**

    - WORK ZONE SPACING
    - CHANNELIZING DEVICES SPACING
    - MEASURED AVERAGE WORK ZONE CAPACITIES

24. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

    - TABLE 5.0-2: TAPER LENGTH

25. **WORK ZONE SPACING**

    - WORK ZONE LENGTH: 200 FEET

26. **CHANNELIZING DEVICES SPACING**

    - TAPER: 20 FEET
    - TANGERINE (WORK ZONE): 10 FEET
    - DOWNSTREAM TAPER: 20 FEET

27. **MEASURED AVERAGE WORK ZONE CAPACITIES**

    - NUMBER OF LANES: 2
    - SPEED (MPH): 50
    - AVERAGE CAPACITY (VPH): 1400

28. **LEGEND**

    - WORK ZONE
    - WORK ZONE BARRIER
    - CHANNELIZING DEVICES
    - SIGNS
    - POLICE DETAIL
    - TRAFFIC ATTENDANT

29. **NOTES**

    - WORK ZONE SPACING
    - CHANNELIZING DEVICES SPACING
    - MEASURED AVERAGE WORK ZONE CAPACITIES

30. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

    - TABLE 5.0-2: TAPER LENGTH

31. **WORK ZONE SPACING**

    - WORK ZONE LENGTH: 200 FEET

32. **CHANNELIZING DEVICES SPACING**

    - TAPER: 20 FEET
    - TANGERINE (WORK ZONE): 10 FEET
    - DOWNSTREAM TAPER: 20 FEET

33. **MEASURED AVERAGE WORK ZONE CAPACITIES**

    - NUMBER OF LANES: 2
    - SPEED (MPH): 50
    - AVERAGE CAPACITY (VPH): 1400

34. **LEGEND**

    - WORK ZONE
    - WORK ZONE BARRIER
    - CHANNELIZING DEVICES
    - SIGNS
    - POLICE DETAIL
    - TRAFFIC ATTENDANT

35. **NOTES**

    - WORK ZONE SPACING
    - CHANNELIZING DEVICES SPACING
    - MEASURED AVERAGE WORK ZONE CAPACITIES

36. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

    - TABLE 5.0-2: TAPER LENGTH

37. **WORK ZONE SPACING**

    - WORK ZONE LENGTH: 200 FEET

38. **CHANNELIZING DEVICES SPACING**

    - TAPER: 20 FEET
    - TANGERINE (WORK ZONE): 10 FEET
    - DOWNSTREAM TAPER: 20 FEET

39. **MEASURED AVERAGE WORK ZONE CAPACITIES**

    - NUMBER OF LANES: 2
    - SPEED (MPH): 50
    - AVERAGE CAPACITY (VPH): 1400

40. **LEGEND**

    - WORK ZONE
    - WORK ZONE BARRIER
    - CHANNELIZING DEVICES
    - SIGNS
    - POLICE DETAIL
    - TRAFFIC ATTENDANT

41. **NOTES**

    - WORK ZONE SPACING
    - CHANNELIZING DEVICES SPACING
    - MEASURED AVERAGE WORK ZONE CAPACITIES

42. **TAPER LENGTH CRITERIA FOR TEMPORARY TRAFFIC CONTROL ZONES**

    - TABLE 5.0-2: TAPER LENGTH
Corps of Engineers Permit No. 2010-814 was issued to the Wood-Pawcatuck Watershed Association. The project is called the Horseshoe Falls Dam Fish Passage Restoration. It involves installing a denil fish ladder on the Upper Shannock Dam aka Horseshoe Dam. Work includes installing a fish entrance at the downstream channel, turning and resting pools, in-channel baffles, grating for maintenance access, channels, riprap, temporary cofferdams and other work.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: ________________________________
Business Address: __________________________________
___________________________________________________
___________________________________________________

Telephone Numbers: ( ) ___________________ ( ) ___________________

Proposed Work Dates: Start: ___________________ Finish: ___________________

Permittee/Agent Signature: ___________________ Date: ___________________

Printed Name: ___________________ Title: ___________________

Date Permit Issued: August 2, 2010 Date Permit Expires: February 13, 2012

FOR USE BY THE CORPS OF ENGINEERS

PM: Mike Elliott Submittals Required: ___________________

Inspection Recommendation: ___________________
COMPLIANCE CERTIFICATION FORM

USACE Project Number: NAE-2010-814

Name of Permittee: Wood-Pawcatuck Watershed Association

Permit Issuance Date: August 2, 2010

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

*************************************************************************
* MAIL TO: U.S. Army Corps of Engineers, New England District
* Policy Analysis/Technical Support Branch, ATTN: Marie Farese
* Regulatory Division
* 696 Virginia Road
* Concord, Massachusetts 01742-2751
*************************************************************************

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Printed Name

Date of Work Completion

Telephone Number