

7.0 FERC STAFF'S CONCLUSIONS AND RECOMMENDATIONS

7.1 SUMMARY OF THE STAFF'S ENVIRONMENTAL ANALYSIS OF THE PROPOSED ACTION

Based on information provided by Millennium and further developed from data requests, field investigations, literature research, alternative analyses, and comments from Federal, state, and local agencies and individual members of the public, we have determined that construction and operation of the Millennium Pipeline Project would result in impacts from Lake Erie to eastern New York would be locally significant. Most notably during the construction period, the project would cause a variety of adverse impacts. Although these may have be mitigated extensively through proposed and recommended mitigation, many are unavoidable.

The most significant unavoidable impacts are turbidity and sedimentation in Lake Erie and the Hudson River; direct and indirect impacts on the federally-endangered shortnose sturgeon and federally-managed EFH in the Hudson River; damage to farm soils especially in the black dirt area in Orange County; permanent conversion of about 26.3 acres of forested wetland to non-forested wetland within the permanent right-of-way; and disturbance of residential communities throughout Westchester County, including disruption caused by in-street construction in the densely populated City of Mount Vernon. Although we have examined many alternatives, including expansion of existing pipeline systems both north and south of Lake Erie and from different directions into New York City, we have been unable to find an alternative that would not create similar disturbances to other locations, other landowners, and other environmentally sensitive areas in New York or neighboring states.

Impacts would be most significant during the construction period. As part of our analysis, we have developed specific mitigation measures that we believe to be appropriate and reasonable for construction and operation of the proposed facilities. We believe that these measures would reduce environmental impact and have concluded that this project can be constructed and operated in accordance with these mitigation measures. We are recommending that our mitigation measures be attached as conditions to any authorization issued by the Commission.

Public Review and Comment

As part of our analysis of the environmental impact of the proposed Millennium Pipeline Project, we requested written scoping comments about the proposed Millennium Pipeline Project and comments on our published DEIS and SDEIS. We conducted 14 public comment meetings which were open to anyone who wanted to provide oral comments about any issue that might affect individuals or communities along the project's route. We have also conducted numerous site visits of the project area and have met with affected landowners, communities, and Federal and state agencies. The information provided through these meetings and in these comments has been taken into consideration throughout our analysis of the project and the conclusions summarized below.

Geology

The impact on exploitable mineral resources would be minimal. The pipeline would cross or be within 1,500 feet of 5 active (or reclaimed) and 3 abandoned mining pits or quarries, 15 oil and gas fields, and 5 historic quarries. During right-of-way procurement, parties could determine a value of exploitable mineral resources that would be lost and reach agreement on adequate compensation, or settle this in an appropriate court. Geologic hazards (seismicity, landslides, and karst terrain) would not pose a significant hazard for the project. Areas where blasting may be required total 48.3 miles, with most blasting anticipated in the counties of Steuben (4.0 miles), Delaware (5.3 miles), and Westchester (29.9 miles). Where blasting

is required, Millennium would conduct pre- and post-blast surveys of all structures with willing landowners and utilities within 150 feet of the construction work area to be able to assess damage to existing structures, if any.

The pipeline would cross about 2,600 feet of the Rock City State Forest/New York State Reforestation Lands in Cattaraugus County and about 1.5 miles north of Little Rock City. "Rock City" geologic formations are known to occur throughout the Rock City State Forest and nearby areas. Millennium has not obtained access through several parcels that reportedly contain these formations. Millennium estimates that the pipeline would cross through 1.2 miles of this area and about 800 to 1,000 feet north and west of some of these formations. While we evaluated six route variations proposed by landowners and Cattaraugus County, we did not recommend any of them since each would be significantly longer and there is no tangible evidence that these geologic formations would be avoided. Further, no unique geologic features requiring blasting or other special construction procedures have been identified on the proposed route. Therefore, we have recommended that Millennium complete surveys between MPs 90.5 and 91.3 (where access has been denied) and file the results and any mitigation plans proposed to minimize impact on the "Rock City" geologic formations if they are present. We believe that implementation of these procedures would adequately minimize impact on these geologic resources.

Soils

Construction of the pipeline would disturb soils and increase the potential for soil erosion, compaction, loss of soil productivity, and damage to existing drainage tiles. Millennium estimates that the trench would not remain open for more than 30 days in a non-residential area and that, typically, there would be no more than 44 days between initial grading and backfilling. No prime farmland soils, as classified by the NRCS, would be affected by the construction or operation of the meter stations. Millennium would minimize impact on soils by implementing measures contained in its ECS, which incorporates our Plan, as well as specific recommendations made by the NYSDA&M. In agricultural areas, Millennium would also employ at least one agricultural inspector for each spread in addition to the other environmental inspectors. We have recommended that Millennium continue to work with the NYSDA&M regarding specialized construction and overwintering procedures in agricultural areas. We believe that implementation of these procedures would adequately minimize impact on soils.

Black Dirt Area

A unique portion of the Hudson Hills physiographic region known as the "black dirt" area is located between approximate MPs 350.0 and 354.0. This area is comprised of peat deposits in the Pine Island area in Warwick, Goshen, and Minisink in Orange County, New York and has an extremely high water table with thick organic deposits that are used for a variety of vegetable crops. Millennium has prepared a site-specific plan for the black dirt area in the Towns of Minisink and Warwick to address concerns identified by landowners and the NYSDA&M. This Black Dirt Plan was developed in cooperation with and reviewed by the New York SHPO, NYSDA&M, Orange County SWCD, Orange County Cornell Cooperative Extension, the Wallkill Valley Drainage Improvement Association, and affected landowners. It has been accepted by the NYSDA&M.

In accordance with the Black Dirt Plan, Millennium would use special construction methods in the black dirt area including the push-pull (or pull-in) and the stove-pipe construction method. Soil layers would be segregated and separated by a plastic barrier and all spoil piles would be silt-fenced and covered to reduce loss by wind erosion. Both Merritt Island and Mission Land Roads, the Wallkill River, Pochuck Creek, the dike and pumping system at Pochuck Creek, and the drainage ditch east of Glenwood Road would be bored. No open-cut crossings of levees, dikes, or pumping systems are proposed. Specialized equipment would be used to restore the construction work area to grade. Millennium would monitor the black dirt area for a

period of 5 years after restoration and would repair or pay for repairing any fields crossed in this area that do not achieve approximate pre-construction annual crop yields during this period. Millennium would also compensate landowners in areas on or adjacent to the construction work area for crop yields that are decreased as a direct result of pipeline construction and would take necessary steps to restore yields to normal production.

Amish Lands

About 20 Amish farms in Cattaraugus County would be crossed between approximate MPs 72.9 and 80.0. The landowners cited numerous examples of farm field damage as a result of 1980 pipeline construction adjacent to Millennium's proposed route. Compaction, excess rock, and trench seepage and settling (often requiring installation of new drain lines) were the most frequently cited problems. These concerns are especially important because of the Amish culture's traditional use of non-mechanized implements in land tillage. In addition, the NYSDA&M identified three parcels that included classified wetlands and another parcel that included wetlands, but was determined to be an upland. The NYSDA&M recommended that the preexisting problems with poor right-of-way restoration be rectified during construction of the new pipeline, proposed construction be completed in accordance with all requirements of Millennium's ECS and our Plan, and the wetland classification be modified to allow standard agricultural or upland construction and restoration techniques in these areas. Millennium would install and maintain its pipeline in accordance with its ECS, and indicated that it would repair field damage caused by pipeline construction performed by Columbia in this area.

In addition, the geologic conditions in this area result in shallow springs on which the Amish generally depend for water supplies. The NYSDA&M believes that pipeline construction may alter these natural spring drainage pathways and affect the natural water source/supply on some Amish farms. The NYSDA&M recommended specific measures for the development of site-specific information and mitigation plans for construction activities on the affected Amish farms. These measures include: continued consultation to determine the need to supplement individual water supplies during construction; development of an inventory of specific water systems that would be crossed by the pipeline; development of site-specific plans for the re-establishment of water supplies; consideration of minor route variations if vulnerable water sources are identified; finalization of restoration plans following review of actual construction disturbances; and monitoring the re-established farm water source/supply locations to ensure continued yields. Millennium continues to develop its construction plans for these parcels and may modify the pipeline route alignment within a property to address landowner needs. Minor route realignments can be made without FERC review as long as the change does not affect a sensitive resource, the landowner concurs with the route change, and no new landowners are affected.

Groundwater

The pipeline would cross both confined and unconfined groundwater aquifers, as well as a total of 13 major aquifer systems, including 7 NYSDEC-recognized primary aquifers and 5 EPA-designated sole source aquifers. Millennium identified five aquifer protection areas (Mayville, Lower Cassadaga Valley, Town of Union/Villages of Johnson and Endicott, Hillcrest, and Chenango) and four public water supply watersheds (Ripley, Westfield, We-Wah, and Grassy Sprain Reservoirs) that would be crossed by the pipeline. Millennium has contacted all towns that would be crossed by the pipeline by letter and by telephone regarding permit requirements and special features, such as protected aquifers and water supply watersheds. Any requirements would be identified in the revised CAS that would be completed before construction. Any new correspondence on the other public water supply watersheds and resulting changes on the CAS would be filed with the Commission before construction.

In response to concerns about protection of aquifers and water supply watersheds, we have recommended that aquifer protection districts be identified on the CAS, that equipment be checked every day for leaks regardless of whether the equipment would be working within an aquifer protection district, and that private wells be tested and monitored for contamination if a spill were to occur up gradient of the capture zone of the well. These additional measures would be included in Millennium's SPCC Plan.

Based on consultations with landowners, Millennium identified 235 private wells on properties crossed by the construction work area. The exact location of these wells in relation to the construction work area would be verified during easement negotiations. Millennium would conduct pre- and post-construction water quality and quantity testing of wells and springs used for drinking purposes within 150 feet of the construction work area, where approved by the landowner, and would repair or replace any well damaged by construction. We have recommended that Millennium confirm the location of wells and springs within 150 feet of the construction work area before construction, and that any complaints concerning water supply yield or quality (including how each was resolved) be included in the weekly construction progress reports. We believe these measures would adequately minimize impact on groundwater.

One landowner in Broome County (approximate MP 242.0) has repeatedly expressed concern that his spring-fed water supply system would be interrupted or destroyed by construction along the back (southern edge) of his property. The water supply system, developed in 1992, supplies water by gravity to the house and barn from a spring that provides "soft water," indicating it is not a deep spring. A separate 0.5-acre spring-fed pond and a second seasonal spring are also located on the property. While construction is not likely to interrupt this water supply system, there is a possibility that excavation of the trench could alter underground water flow to the water supply system. Therefore, we have recommended that Millennium prepare a report that contains site-specific information about the spring (approximate MP 242.0), the water bearing stratum that supplies the spring, and construction plans to maintain uninterrupted flow to the spring for review and written approval by the Director of OEP before construction. If the report indicates that trench excavation may affect the spring, then we have recommended that the pipeline be moved farther upslope away from the spring. This would increase both the vertical and horizontal separation between the spring and the pipeline.

Surface Water

The Millennium Pipeline Project would cross a total of 507 waterbodies (including Lake Erie), of which 308 are perennial and 199 are intermittent waterbodies. A total of 21 waterbodies would be over 100 feet wide at the crossing. Both the NYSDEC and the COE recommended that all streams be crossed using dry crossing construction techniques. Millennium proposes to cross 493 waterbodies (97 percent of all waterbodies) using dry crossing techniques (e.g. directional drill, horizontal bore, coffer dam, dry ditch, or aerial), unless at the time of crossing there is no perceptible water flow. This includes all of the intermittent streams and 295 of the 309 perennial waterbodies. Of the 14 perennial waterbodies that would be at least partially open cut, 3 are between 42 and 96 feet wide, 9 are between 140 and 2,500 feet wide, and 2 are more than 2,500 feet wide (Lake Erie and Hudson River). Only Lake Erie, the Hudson River, the Cohocton River, and the East Branch Delaware River (all major waterbodies) would require more than 4 days to cross. One other waterbody (East Branch Delaware River) would be crossed using a combination conventional bore and open cut/diversion. We have recommended that the open-cut crossings of the three intermediate waterbodies (Cassadaga Creek, State Drainage Ditch, and Catatunk Creek) be completed within 48 hours.

Millennium received its section 401 Water Quality Certificate from the PADEP for the Lake Erie crossing on March 29, 2000. Millennium also received its section 401 Water Quality Certificate from the NYSDEC on December 8, 1999, for all waterbodies in New York that would be crossed by the proposed route which originally included construction within the ConEd right-of-way in Westchester County. This certification included waterbodies that would also be affected by the ConEd Offset/Taconic Parkway

Alternative along the ConEd right-of-way such as Furnace Brook Lake, Teatown Lake, and the Croton River. Millennium would be required to obtain a revision to its section 401 Water Quality Certificate for waterbodies crossed along portions of the route that have changed since then, including any route changes that may be approved by the Commission. We find that the proposed crossing procedures and specified mitigation would minimize impact on waterbodies.

Public Water Supplies

The pipeline would cross five waterbodies within 3 miles of active public water intakes: Belson Creek at MP 38.1, Olean Creek at MP 112.2, Genesee River at MP 137.3, Indian Kill Tributary at MP 367.0, and Indian Kill Reservoir at MP 367.1. Millennium proposes cross Belson Creek using dry crossing techniques and to open-cut the remaining three waterbodies, installing in-stream sediment filters and contacting local water authorities one week before actual in-stream construction. Millennium is in the process of completing a final evaluation for the directional drill of the Genesee River. Further, because the Indian Kill Tributary is a minor stream (under 10 feet wide at the crossing location) located upstream of a public water supply intake, we have recommended the use of a dry crossing technique to reduce the potential for a significant increase in turbidity associated with open-cut construction techniques.

Lake Erie

The pipeline would cross a total of about 32.9 miles of Lake Erie within U.S. waters and 60.4 miles within Canadian waters. Lake Erie would be crossed by directionally drilling the shoreline and using conventional underwater construction by mechanical jetting for the lake crossing. Lake Erie is classified as a coldwater fishery in Pennsylvania and a Class A (high quality) waterbody in New York. The NYSDEC has requested that construction be restricted to the period between June 1 and September 15, which is more restrictive than our Procedures (June 1 to September 30 for coldwater fisheries and June 1 to November 30 for warmwater fisheries). Millennium has requested a variance to extend the timing window to between mid April and November because of the presence of hard shale at the landfall that may increase the difficulty and duration of the directional drill. We believe this is reasonable.

Temporary disruption of sportfishing, commercial traffic, boating and other recreational activities would be expected to occur due to the physical disturbance, noise and turbidity resulting from water-based construction activities. However, the impacts would be minimal as most of the lake would remain open for boat transit.

Ice Scour: One of the most important concerns was the potential for pipeline damage from ice scour along the bottom of Lake Erie. High winds on Lake Erie can fracture and pile ice into large ridges. Ice scour occurs when the keels of these ridges drag along the lake bed. To avoid damage, a pipeline must be designed to withstand the forces from an ice scour expected once every 100 years and the pipe crown must be placed sufficiently below the scour depth to keep pipe deformations within acceptable limits. Based on analyses prepared by C-CORE and Millennium, and review of these analyses by ERDC at CRREL, the trench depth was increased from 9.2 to 11.2 feet in the areas nearest the U.S. shore. Millennium has agreed to install its pipeline at the recommended depths.

Turbidity and Sediment Deposition: Temporary increases in suspended solids would be expected as a result of in-lake construction activities. The time that the particles remain suspended depends on their settling velocities and water turbulence. The distance of travel by the sediments from the source to the point of deposition depends on the particle mass and current velocity. Millennium modeled turbidity and sediment deposition based on the CRREL recommended trench depths. Millennium's modeling indicated that a visible sediment plume (TSS > 35 mg/l) could cover a maximum area of between 8.0 and 3,701.2 acres at the surface and an area of between 8.0 and 4,761.6 acres at the bottom. Duration of the plumes at the surface

ranged between 2 and 47 hours. The plume would follow construction across the lake and would not be sustained at any location. Previous studies have indicated that TSS concentrations of 1,000 mg/l would have no lethal effects on most fish species. Predicted sediment deposition ranged between 1 and 27 inches up to 4,920 feet from the trench. Sedimentation due to construction activities across all of Lake Erie may affect about 1.3 percent of the lake. ERDC's review of the modeling indicated that Millennium's predicted turbidity plume is conservative.

Potential for Encountering Contaminated Sediments: To minimize the potential for sediment contamination, Millennium selected the pipeline route to avoid areas of fine recent sediment deposition and maximize the crossing of non-depositional areas (i.e., those with glacial till or coarser-grained sediment). Once the corridor was established, surficial sediment samples were collected along a grid system for the analysis of an indicator contaminant (e.g., mercury). Sediment samples revealed mercury concentrations below the Ontario sediment quality guideline for lowest effect level of 0.2 µg/g and well below the EPA bulk chemical composition guideline for polluted sediment of greater than 1 µg/g. These levels in the surficial sediments represent natural (background) concentrations of mercury. Based on the low mercury levels, the concentrations of other chemical parameters were expected also to be low, indicating that sediment quality along the route corridor would likely not be a problem. Based on the information provided by Millennium and review by ERDC, no additional sampling or analyses are needed due to increased trench depths (accounting for ice scour) because the extra material excavated would be uncontaminated.

Pipeline Repair in Lake Erie: Millennium estimates that pipeline repair in Lake Erie would require 14 days from the time of break detection to the time the pipeline would be returned to service. If there is ice cover, repair would take 21 days because of the need to mobilize an ice breaker vessel.

On March 29, 2000, Millennium received its section 401 Water Quality Certification from PADEP. We have recommended that Millennium file the finalized plan for the Lake Erie crossing before construction, including finalized construction procedures for minimizing and monitoring dispersion of the turbidity plume and sediment deposition.

The NEB review of the Canadian Millennium facilities was suspended in early 2000 at the request of the applicants pending completion of the FERC review of Millennium's application in the U.S. In August 2001, St. Clair and TransCanada advised the Joint Review Panel that they were withdrawing their applications without prejudice to their right to refile analogous applications if and when appropriate. St. Clair and TransCanada noted that it may be necessary to amend portions of the existing applications to reflect economic and technical changes to their projects since the original filings. We have recommended that Millennium not begin construction of any portion of the U.S. portion of the project until it files a copy of the appropriate permits from the NEB for the upstream Canadian project.

Hudson River

The pipeline would cross the Hudson River (MP 387.9), in Haverstraw Bay, between Bowline Point in Haverstraw and the Franklin Delano Roosevelt Veteran's Administration Hospital in Cortlandt, about 11.3 miles north of Nyack, New York, and the Tappan Zee Bridge. The proposed crossing would be 2.1 miles long, making directional drilling infeasible as a construction option. However, the shallow, slow-moving water and sandy bottom at the crossing location would facilitate the use of the open-cut construction method. In response to agency concerns about the use of a conventional dredging techniques, Millennium now proposes to use an open-water, lay-barge construction method. This would involve excavating a 1,300-foot-long trench section at one time and then installing the prefabricated pipe segments (with a 3-inch concrete coating), which have been assembled on the lay barge, in the excavated trench. The trench would be backfilled immediately after pipe installation using the bottom-dump barges, and trenching would begin on the next 1,300-foot-long segment.

Millennium modeled the extent of the visible plume and the thickness of sediment deposition for the proposed crossing method. The model results were broken down into four components: 1) dredging in shallow water using a 6-cubic-yard closed bucket, 2) backfilling in shallow water using a 6-cubic-yard closed bucket, 3) dredging in deep water using a 22-cubic-yard closed bucket, and 4) backfilling in deep water using a bottom dump barge. The modeling predicted a visible plume (> 35 mg/l) ranging between 60 and 90 feet wide by between 35 and 460 feet long during dredging and a plume ranging between 90 and 500 feet wide by between 170 and 400 feet long during backfill. The total area affected by operation on any given day ranged between 0.06 acre and 5.23 acres depending on the operation (e.g., components 1 through 3). Periodic impacts involving about 9.18 acres would occur during backfill of the deep water component (e.g., component 4). Haverstraw Bay is estimated to average about 2.6 miles wide (13,940 feet) by 4.2 miles long (22,000 feet) for a total of about 7,040 acres. Proposed construction would affect about 1.5 percent of the bay over the duration of the crossing.

Millennium conducted sediment sampling in the Hudson River near the crossing location and found trace levels of metals and other chemical contaminants. In accordance with the NYSDEC's section 401 Water Quality Certification, Millennium would implement a Hudson River Sampling Plan that would be used during construction to monitor and adjust construction practices to minimize adverse water quality impacts to the extent possible.

To minimize adverse impacts on fisheries, and after a collaborative process with the NYSDOS, NYSDEC, FWS, and NMFS, Millennium proposes to cross the Hudson River/Haverstraw Bay between September 1 and November 15. Millennium originally proposed construction during the winter months (November 1 to January 31) when biological rates (i.e., food consumption and metabolic rates) are at their lowest. While the winter construction window would minimize impact on recruitment and spawning since most species spawn in the spring and early summer when water temperature rises, it may have an adverse effect on sensitive or protected juvenile or adult fish using the bay as overwintering grounds (i.e., striped bass, American shad, federally endangered shortnose sturgeon).

We believe it is critical to protect the overwintering uses of Haverstraw Bay and also important to minimize impacts on aquatic biota that are there during spring and summer. We believe that, compared to Millennium's original proposal, the currently proposed lay-barge dredge method would significantly reduce environmental impacts on the Hudson River and Haverstraw Bay. With the revised proposed construction method, most impacts would be temporary and construction could be completed within the September 1 through November 15 construction window. We note that the NYSDEC has approved the proposed project by issuing its section 401 Water Quality Certificate. We have recommended Millennium file its finalized Hudson River Sampling Plan developed to meet the NYSDEC's section 401 Water Quality Certificate which contains numerous general conditions as well as 26 site-specific conditions for the Hudson River. We have also recommended that Millennium prepare and file a work plan and schedule for the Hudson River crossing showing completion of construction activities within the September 1 to November 15 time window, including contingency plans for delays due to weather, equipment malfunction, or other work slowdowns.

Aqueduct Crossings

The proposed Millennium Pipeline Project would cross four aqueducts in Westchester County: the Old Croton Aqueduct (MP 397.4), New Croton Aqueduct (MPs 401.2, 410.3, and 413.8), Delaware Aqueduct (MP 418.1), and Catskill Aqueduct (MP 418.2). The Old Croton Aqueduct is no longer in use, but is listed on the NRHP and is a National Historic Landmark. It would be crossed within a protective berm where a stream is culverted across the aqueduct. Millennium would use a site-specific crossing plan developed in consultation with the NYSOPRPHP (the property owners and administrators). Except for the Catskill Aqueduct, that is discussed below, the other aqueduct crossings would be in deep tunnel sections and would not be affected by construction.

The pipeline would cross the Catskill Aqueduct at MP 418.2 in Yonkers, Westchester County. The NYCDEP has expressed continuing concern regarding the pipeline crossing in Yonkers because the top of the aqueduct is only buried about 8 feet deep in this area. The NYCDEP is concerned that a failure of the pipeline could result in an interruption of water supplied to New York City via the Catskill Aqueduct. The NYCDEP states that such a rupture and water supply loss would have catastrophic effects on the health of its customers. Further, it states that Millennium has not developed a design which provides adequate protection for the aqueduct during pipeline construction and operation.

Millennium has met with NYCDEP officials on several occasions to discuss the issues that have been raised. As a result, Millennium has prepared a conceptual crossing design for the aqueduct to ensure that the aqueduct would be protected in the event that the pipeline ruptured at the crossing location. The conceptual crossing design includes a steel-reinforced concrete barrier between the pipeline and the aqueduct, supporting concrete columns extending from the proposed concrete barrier to the bedrock underlying the aqueduct as an added measure of protection, installation of a heavy wall, high tensile steel pipe, and installation of a telemetry system to continuously monitor the pipeline crossing for any changes in pressure.

In its comments on the SDEIS, the NYCDEP reiterated its concern that a gas pipeline explosion would have potentially catastrophic impacts on the delivery of water to the City of New York and communities north of the city. The NYCDEP met with Millennium in January 2001 and discussed the feasibility of shifting the crossing location outside of the Sprain Brook Parkway roadbed to increase the vertical separation between the pipeline and the aqueduct. Also discussed were the permit requirements to allow site access for site investigation work to develop the site-specific crossing plan using the conceptual crossing design. The NYCDEP requested that the crossing analysis and concurrence by an independent consultant be completed before the decision on the crossing location is finalized. Millennium states that it has retained an engineering consultant to complete technical review of the design and is proceeding with obtaining access from the NYCDEP to develop the site-specific plan. We believe that this is an engineering design issue that must be resolved before construction can begin. Therefore, we have recommended that Millennium file the final site-specific plan, the evaluation of the plan by the independent engineering analyst and the comments of the NYCDEP about the plan before construction. We have also recommended that construction not begin until the site-specific plan has been reviewed and approved by the Director of OEP.

Fishery

Millennium identified 126 waterbodies (95 perennial and 31 intermittent) as designated trout waters or streams suitable for trout spawning. The project also would be within or adjacent to a designated Significant Coastal Fish and Wildlife Habitat that is part of the state's Coastal Management Program in Haverstraw Bay at the Hudson and Croton River crossings. The only open-cut crossing of a designated trout stream would be the Mongaup River/Rio Reservoir (MP 330.0), which would be expected to take a maximum of about 4 days. The East Branch Delaware River (MP 287.0) would be crossed using a combination conventional bore and open cut/diversion, and water would be diverted around the open-cut segment. The remaining fishery streams would be crossed using dry-crossing construction techniques, if flowing at the time of the crossing (e.g., flume, dam and pump, aerial, or directional drill). Dry crossing techniques and use of specified construction timing windows would minimize impact on water quality and would avoid interruption of spawning runs at waterbodies. We believe that implementation of these mitigation measures would reduce impact on fisheries.

Since a very small portion of Lake Erie (about 798 acres in the U.S. out of about 10,000 square miles) would be affected by construction, impact on recreational and commercial fishing would be minor; however, the DOI commented that a compensatory mitigation plan be developed for unavoidable impacts on Lake Erie and suggested the possibility of creation of a trout spawning reef since some blasting may be

required for a short distance (about 0.6 mile) in the U.S. near the shoreline and blast rubble could be used for the creation or enhancement of lake trout spawning habitat, if appropriate. Millennium has stated that it would consult with the COE, NYSDEC, PADEP, and NYSDOS regarding this possibility.

The crossing of the Hudson River at Haverstraw Bay would be within designated EFH for seven species of fish (red hake, winter flounder, windowpane, bluefish, Atlantic butter fish, fluke, and possibly the Atlantic herring) and habitat for the endangered shortnose sturgeon. The NMFS would use the FEIS, along with our EFH Assessment and BA (both issued January 2001) to complete its review. Millennium proposes to cross the Hudson River/Haverstraw Bay between September 1 and November 15 using an open-cut lay-barge construction technique to minimize impacts on fishery resources.

Vegetation and Wildlife

Construction and operation of the Millennium Pipeline Project would result in temporary and permanent alteration of wildlife habitat, as well as direct impact on wildlife such as disturbance, displacement, and mortality. The clearing of forest for construction and operation of the pipeline would result in a change of forested wildlife habitats to herbaceous and shrub cover habitat types. After construction, the temporary construction right-of-way and extra work areas in previously forested areas would be allowed to revegetate naturally and would eventually return to pre-construction conditions. The project would permanently affect a total of about 540.6 acres of upland forest within the permanent right-of-way, which would be converted from forest habitat and maintained as herbaceous and shrub cover for operation of the pipeline.

The project would cross about 5.3 miles of the Mongaup WMA in Sullivan and Orange Counties between MPs 323.8 and 330.2. Following the removal of Columbia's existing Line A-5 pipeline, Millennium proposes to construct the new pipeline in the same ditch. The pipeline would also cross 0.7 mile of the Doris Duke Wildlife Sanctuary in the Sterling Forest between MPs 364.9 and 365.8. Construction would be in the lift and lay segment of the project and would affect about 7.5 acres of land (6.1 acres for the construction right-of-way and 1.4 acres for staging areas), of which about 3.4 acres would be forest. Millennium would finalize site-specific plans for crossing both the Mongaup River WMA and the Doris Duke Wildlife Sanctuary in consultation with the NYSDEC, and the NYSOPRHP and the PIPC, respectively, which would minimize the impact of construction on these areas. We have recommended that Millennium file the final plans with the Secretary prior to construction.

Potential construction related impacts on waterfowl concentration areas along the Hudson River/Haverstraw Bay and Croton River (a designated Significant Coastal Fish and Wildlife Habitat) include temporary changes to water quality from increased siltation and sedimentation resulting from ground disturbances such as trenching activities. However, we believe that strict adherence to Millennium's ECS, and our Plan and Procedures, would minimize impact on water quality and result in only temporary, minor impact on these habitats. In addition, Millennium states that it would continue consultation with the FWS, NYSDEC, and the Division of Coastal Resources and Waterfront Revitalization regarding mitigation measures including restrictions on time-windows for construction during peak migration within these areas. We believe that implementation of these mitigation measures would minimize impact on the WMA and waterfowl concentration areas.

The DOI commented that other wildlife areas may include birdwatch areas, such as the hawk watch site near the AT (MP 363.5). Millennium stated that it would be willing to consider the creation of wildlife enhancement areas along the construction right-of-way and that any plans pertaining to the creation of wildlife enhancement areas would be developed and sited in consultation with the FWS, the COE, the NYSDEC, and landowners. Since no such plans have yet been developed we have recommended that if

Millennium develops wildlife enhancement areas in consultation with these agencies, these areas would be marked on the CAS and the plans filed before construction.

Endangered and Threatened Species

We have consulted informally with the FWS and NMFS regarding the presence of federally listed or proposed species in the project area. Eight federally listed endangered or threatened species were considered by the FERC as potentially occurring in the vicinity of the proposed project facilities. One of the species (the peregrin falcon) was delisted on August 25, 1999 and was eliminated from detailed review. The remaining species are the endangered shortnose sturgeon, dwarf wedge mussel, clubshell and Northern riffleshell, and the threatened bald eagle, bog turtle, and northern wild monkshood. Since northern wild monkshood is not known or likely to occur with the project area, the project would not affect this species or suitable habitat for this species. The BA was issued in January 2001 on the seven federally listed or proposed species and the FWS provided its comments in March and July 2001.

The shortnose sturgeon occurs in the Hudson River between the George Washington Bridge in Manhattan and the Federal Lock and Dam in Troy, New York. In particular, the Haverstraw Bay area provides seasonal foraging and wintering habitat for this species and monitoring data suggest that sturgeon numbers may be increasing in the Hudson River. It is likely that construction of the proposed Hudson River crossing within Haverstraw Bay would impact the shortnose sturgeon and could result in direct mortality. However, we believe that most of the bay would be undisturbed by construction and that the project would not likely jeopardize the continued existence of the species. In addition, while constructing during a time of year other than the winter may minimize impact on the shortnose sturgeon, we believe it would generally result in a greater level of impact on other fish species.

The NYSDEC included 26 conditions in its section 401 Water Quality Certificate that relate specifically to the Hudson River and minimizing impact from sedimentation and turbidity. We believe that the proposed open-cut lay-barge construction method, if implemented in accordance with the NYSDEC conditions and our recommendations, would minimize impact on the fisheries in Haverstraw Bay and the shortnose sturgeon.

The formal consultation process began on June 1, 2001, and on September 14, 2001, the NMFS submitted its biological opinion (BO) and an incidental take statement (ITS) to the FERC, concluding the section 7 formal consultation process. The NMFS concluded that the proposed action may adversely affect, but is not likely to jeopardize the continued existence of the federally endangered shortnose sturgeon. The ITS authorizes the take of one shortnose sturgeon from either injury or mortality, and includes three non-discretionary terms and conditions that must be complied with, as well as four discretionary conservation recommendations.

If the Commission authorizes construction across Haverstraw Bay at the proposed crossing location and Millennium receives all other permits and approvals, then to comply with section 7 of the ESA, we recommended that Millennium should include all of the terms and conditions of the NMFS Incidental Take Statement in its final site-specific Hudson River crossing plan and file it for review and written approval before construction. In addition, if facilities are not constructed within 1 year from the date of issuance of the certificate, Millennium should consult with the FWS and NMFS to determine if additional consultations or surveys are required.

Millennium has completed species surveys where requested by the FWS. These included dwarf wedge mussel surveys in the West and East Branches of the Delaware River, and clubshell and Northern riffleshell mussels in Cassadaga Creek and State Drainage Ditch. None of these mussel species were found. Millennium would bore the Neversink River to avoid impact on the dwarf wedge mussel. We have

recommended that construction not begin within an 1.8-mile-long segment that includes the Neversink River until the bore of the river is completed successfully in case the bore fails and an alternative route would need to be used.

No surveys were required for the bald eagle since the nesting sites are known. However, we recommended that Millennium consult with the FWS regarding the crossing of the Mongaup River before construction to determine if additional bald eagle nests have been found along the pipeline route.

Millennium conducted field surveys of 18 wetlands where the FWS believed populations of bog turtles may occur. Only one site was found with suitable bog turtle habitat. Millennium states that it would avoid this area during construction and would revise its CAS to show the reduced work area.

Special status species that also may be affected by the Millennium Pipeline Project (other than federally listed endangered and threatened species) include seven Federal species of concern and ten state-listed endangered or threatened species. Construction of the Millennium Pipeline Project or use of storage yards should have no direct impact on habitats used by these species.

However, Millennium, in consultation with the NYSDEC, identified 14 locations where the timber rattlesnake may be affected by pipeline construction. To minimize impact on this species, Millennium has incorporated a line change to avoid impact on one known den site. In addition, Millennium proposes to comply with the NYSDEC's recommendations to either restrict construction to the period between November 1 and March 15 or hire a snake monitor if construction would occur between March 16 and October 31. The snake monitor would be qualified to find rattlesnakes within the construction work area and to remove them safely and unharmed to nearby release sites. Millennium met with the NYSDEC concerning the potential impacts on the timber rattlesnakes associated with moving loose boulders during construction activities. As a result of this meeting, Millennium proposes to remove all loose boulders from the construction work area that provide potential timber rattlesnake habitat between October 1 and May 7, as recommended by the NYSDEC. We believe that implementation of the proposed mitigation measures would ensure that the impact on protected species is minimized.

Wetlands

According to field delineations conducted by Millennium and our review of the NWI maps, the proposed pipeline would cross about 673 wetlands for a total crossing length of 41.4 miles, affecting about 414.3 acres during construction. No wetlands would be affected by aboveground facilities.

All construction and restoration in wetlands would be in accordance with Millennium's ECS and our Procedures, as supplemented with its site-specific mitigation measures and our recommendations. To further reduce wetland impacts, we examined the feasibility of avoiding 57 crossings of 38 NYSDEC-regulated wetlands and also those predominantly forested wetlands that would exceed 500 feet in length. Generally, following an existing corridor through forested areas is preferable to establishing a new corridor, since a portion of the cleared corridor can be used for some of the construction and permanent rights-of-way. Constraints to avoiding wetlands include existing residential development, roads, and unfavorable topography. Our review indicates that the advantages of these types of route change are normally negated by the additional impacts on other resources and by establishing a new right-of-way that would deviate from the existing right-of-way. Millennium developed site-specific plans for crossing state-regulated wetlands in consultation with the NYSDEC in the spring and summer of 1999. We have reviewed these site-specific crossing plans and find them to be acceptable. We believe that if Millennium constructs its project in accordance with its site-specific crossing plans and the measures contained in its ECS, impacts on NYSDEC-regulated wetlands would be minimized.

The DOI commented that underlying aquiclude materials provide a supporting hydrology for perched wetland habitats, these areas should be identified, and Millennium should develop techniques to minimize impacts. We believe that determining whether a wetland is hydrologically sustained by a fragipan or aquiclude is difficult before construction and would not be practical for a project of this magnitude. Although we are not convinced that perched wetlands would not be encountered, we recommended that Millennium identify and restore these wetlands. If construction activities affect a perched wetland, Millennium would be responsible for the successful restoration of these wetlands.

Land U:

The Millennium pipeline would generally be installed within a 75-foot-wide right-of-way, of which 50 feet would be maintained for operation. Construction of Millennium's pipeline and aboveground facilities would directly disturb about 797.6 acres underwater in Lake Erie for trench construction and 5,135.6 acres of land on shore for the construction right-of-way, extra work areas, and aboveground facilities. About 1.3 percent of Lake Erie (in both Canada and the U.S.) may be affected by sedimentation resulting from construction activities. Following construction, Millennium would retain 797.6 acres of permanent right-of-way underwater in Lake Erie and 2,341.4 acres of land on shore for operation of the pipeline and associated aboveground facilities.

About 335 miles of the pipeline on land (87 percent) would be constructed adjacent to or within existing rights-of-way. The remaining 48.8 miles of pipeline on land and the 32.9 miles of pipeline in Lake Erie would be constructed on new right-of-way. Segments of new right-of-way would be distributed throughout the length of the project and were incorporated into the proposed route because of topography, engineering, or residential constraints of areas adjacent to the existing rights-of-way.

Residential Areas

There would be about 221 residential structures, some of which are multi-family buildings, within 50 feet of the construction work area. With the exception of densely populated residential areas in Westchester County where the pipeline would be placed along roads or within the streets, only one residence, in Chautauqua County, would be located less than 25 feet from the construction work area. Millennium would implement mitigation measures contained in its ECS during construction in residential areas. These measures would include fencing the construction work area, preserving mature trees and landscaping, reducing the construction work areas as necessary to maintain 25 feet between the residence and the construction work area, using drag section or sewer line construction techniques to install the pipeline, and restoring residential properties immediately after backfilling the trench. We believe that the proposed mitigation would lessen impact on residences from construction and operation of the pipeline. Also, we have recommended additional mitigation measures for certain residences and the submittal of detailed site specific plans for all residences within 25 feet of construction work areas.

Millennium identified 231 septic systems on properties that would be affected by the construction work area. Millennium states that the location of each septic system or leach field would be verified during easement acquisition and through discussions with individual landowners, and would be avoided wherever possible. Where avoidance would not be feasible, and a system would be taken out of service during construction, Millennium would provide alternate service or compensate the landowner for the loss of use. If a system were damaged during construction, Millennium would repair or replace the damaged portion to its pre-construction condition or otherwise compensate the landowner. We believe that these measures would minimize impact on septic systems.

Construction in Mount Vernon

The last approximate 1.9 miles of the pipeline would be constructed within the boundaries of the City of Mount Vernon between MPs 419.9 and 421.8. About 1 mile of this total would be along the Bronx River Parkway and the rest would be within the residential and commercial streets of MacQuesten Parkway, Oak Street, Lincoln Avenue, Valentine Street, North Roosevelt, South 8th Avenue, and West 4th Street to the terminus at South 7th Avenue and West 4th Street. In-street construction would disrupt residence and business access, traffic, parking, and community health and recreation services. We received over 750 comment letters from the citizens of Mount Vernon who cited environmental justice concerns as well as concerns about pipeline construction and operation near residential neighborhoods, the Hamilton Elementary School, two fire stations, the Mount Vernon Hospital, the Greater Centennial African Methodist Episcopal Zion Church, and a neighborhood health center. Objections were also raised about the location of the Mount Vernon Metering and Regulating Station in the parking area near the neighborhood clinic near South 8th Avenue and West 4th Street.

However, the pipeline terminus has been modified. The variation would tie into ConEd's existing 20-inch-diameter pipeline at the intersection of South 7th Avenue and West 4th Street, one block east of the church and the neighborhood health center. This change would require relocation of the Mount Vernon Meter and Regulating Station to a parking area near Oak Street and MacQuesten Parkway. We have recommended this variation. We have also recommended that Millennium develop site-specific plans for all in-street construction with particular attention to the plans for construction near the Hamilton Elementary School, the fire stations, and hospital in consultation with emergency service providers. Further, because of the number of residents that would be disturbed by construction, we have recommended that Millennium consult with appropriate authorities and community representatives to develop site-specific construction plans that would address construction timing, traffic detours, maintenance of equipment to reduce air and noise pollution, and loss of on-street parking. We have also recommended that, because of the potential for in-street utilities to be damaged by construction activities, Millennium have appropriate utility repair crews and materials present at all times during in-street construction next to buried utilities.

Recreation and Public Interest Areas

The pipeline would cross several recreational waterbodies including Lake Erie, 3 river segments listed on the NRI (Chautauqua Creek, Cohocton River, and the Wallkill River), and segments of 3 rivers under study for inclusion in the NYSDEC Wild Scenic and Recreational Rivers System. Several state and local parklands and numerous recreational trails (including the Appalachian Trail) would be crossed by the proposed route. Other recreation and public interest areas crossed by the pipeline include a golf course, ball fields, hospital, and many private hunting clubs. Impact on these areas is expected to be minimal due to effective routing, use of existing corridors, minimizing width of construction right-of-way, and timing of construction activities based on Millennium's consultations with the appropriate local government and owner representatives.

Traffic

A traffic study was conducted on those segments of the 9/9A Proposal where the pipeline would be placed within the roadways of U.S. Route 9, State Route 9A, and States Routes 9A/100 (a heavily used, generally north-south transportation corridor with truck traffic) using data obtained from the NYSDOT and modeling methods defined in the 1987 Highway Capacity Manual. The study focused on the effects of shutting down one lane of traffic within these roadways and included current traffic volumes, accident data, and predicted traffic impacts (e.g., queues or backups) as a result of the one-lane shutdown, ramp closures, open cut road crossings, construction through signalized intersections, and road shutdowns as a result of blasting.

On U.S. Route 9 (where the pipeline would be installed adjacent to the northbound lane for approximately 2.1 miles between MPs 391.8 and 394.2), daily traffic volumes ranged between 15,100 and 19,200 with an average calculated accident rate 2.2 times below that for similar highways as compiled by the NYSDOT. The closure of one lane was predicted to result in queues and an approximate 6-minute delay between 7 and 8:45 p.m. Millennium proposes to stop construction during the peak evening traffic hours (3 to 7 p.m.). If the 9/9A Proposal is approved by the Commission, we have recommended that Millennium stop construction between the hours of 3 and 8 p.m. unless otherwise approved or restricted by the NYSDOT. One on ramp would require closing, resulting in an estimated 5 to 8 minutes of additional travel time to detour around the ramp closure. No signalized intersections would be affected. The potential for blasting was considered moderate.

On State Route 9A (where the pipeline would be installed adjacent to the northbound lane for approximately 4.3 miles between MPs 397.0 and 401.3), the daily traffic volumes ranged between 15,000 and 17,300, with an average calculated accident rate 1.1 times above that for similar highways. No traffic delays were predicted as a result of the closure of one lane. Two on and off ramps would require closure, resulting in 4 to 16 minutes of additional travel time for detours. Construction would also cross through 3 signalized intersections. Based on modeling on one of these intersections (North State Road at MP 401.1), a delay of 127 seconds for the northbound lane during peak traffic may be acceptable considering the LOS for this lane at this intersection is F (the lowest level). However, for the southbound lane, any increase above a 268 second average delay during the peak commuter rush hour movement would be significant. Since these predicted impacts would be likely to also occur at the other signalized intersections, we recommended that Millennium avoid construction activities within 300 feet of the signalized intersections during the peak morning traffic hours unless otherwise approved or restricted by the NYSDOT.

The potential for blasting was considered high within this segment because of the narrow shoulders, lack of breakdown lane, and visible exposed ledge. If blasting is required, all lanes of State Route 9A would need to be closed for between 5 and 20 minutes depending on whether subsurface rock or rock outcrop is being broken up. If one northbound lane is closed before and after blasting, the model predicted that a 20-minute closure would result in a maximum of 271 vehicles queuing in the northbound lane for 52 minutes and a maximum of 142 vehicles queuing in the southbound lane for 27 minutes. If both northbound lanes remain open the queue in the northbound lane would be reduced to a maximum of 136 vehicles for 26 minutes. We have recommended that Millennium prepare a blasting plan in consultation with the NYSDOT and that it include a provision to avoid a lane closure (for the construction work area) before and after any blasting.

On State Routes 9A/100 (where the pipeline would be installed adjacent to the southbound lane for approximately 2.4 miles between MPs 401.3 and 404.0), daily traffic volumes ranged between 20,000 and 22,000 with an average calculated accident rate 1.1 times below that for similar highways. The closure of one lane was predicted to result in queues and an approximate 5-minute delay just after the lane closure at 10 a.m. and a 25-minute delay between 3 and 8:15 p.m. We have recommended that Millennium stop construction during the peak evening traffic hours between 3 and 7 p.m. unless otherwise approved or restricted by the NYSDOT. One on ramp and one off ramp would require closing, resulting in an estimated 9 to 10 minutes of additional travel time. No signalized intersections would be affected. The potential for blasting was considered low.

About 3.1 miles of in-street construction would be required for this project. The pipe would be installed using stove-pipe construction techniques and a 20- to 35-foot-wide construction work area. That segment of the street needed for construction would be closed to traffic, and traffic would be routed around the work area. The length of the closed segment would vary, but would typically be between 200 and 500 feet to allow for trenching, staging and welding of the pipe, and backfill. Road closures would usually be

block by block. We have recommended that Millennium file site-specific plans for where there would be in-street construction. These plans include traffic management.

Finally, since significant traffic delays could be expected at locations where Millennium proposes to open cut road crossings or close on and off ramps, we have recommended that Millennium file a traffic management plan for each road that it proposes to open cut or close ramps.

Coastal Zone Management Consistency

Millennium received its coastal zone consistency determination for construction in Lake Erie from the PADEP on April 6, 2000. No part of the project would be on land in Pennsylvania. No impacts are anticipated on cultural resources or endangered and threatened species for the Millennium project area within the designated Pennsylvania coastal zone.

Millennium initiated CZMA consultation and filed a CZM consistency certification with the NYSDOS in November 1998 for the segments of pipeline within the coastal zone of New York. Millennium responded to NYSDOS comments on its filing in March 1999, and discussed various aspects of its proposed crossing of the Hudson River again with the NYSDOS in August and September 1999. In March 2001, Millennium provided an updated CZM consistency certification to the NYSDOS that included the 9/9A Proposal. Millennium is also coordinating with the COE, NMFS, FWS, and NYSDEC as part of other required Federal and state permit processes. The NYSDOS began its review of the project on March 12, 2001, subject to part 930, subpart D, but it has not completed its review of the project.

Based on consultations with the NYSDOS, the Lake Erie crossing appears to be consistent with New York CZM policies. The revised construction method for the Hudson River crossing (using a closed-bucket, lay-barge dredge during a construction time window that would minimize potential impacts to a variety of federal- and state-sensitive fishery resources) represents a significant improvement over the original bottom-pull dredge construction method. While we believe that construction of the pipeline within the coastal zone may have significant, temporary impact, particularly that segment within the Hudson River, we believe that construction and operation of the pipeline would not represent a long-term impact on the coastal zone or its policies. For the 9/9A Proposal, we recommend that Millennium develop a plan in consultation with the Village of Croton-on-Hudson regarding its LWRP before construction. In addition, since the NYSDOS is responsible for determining the proposed project's consistency with New York coastal zone management policies, we also recommend that Millennium file a determination of consistency from the NYSDOS before beginning construction.

Visual Resources

About 335.0 miles (87 percent) of the land segment of pipeline would be adjacent to existing rights-of-way or in roads, reducing the need to establish new utility corridors. This expansion of existing corridors may result in visual impacts, particularly in areas where existing vegetation provides screening of powerline rights-of-way from nearby residences. However, most of the pipeline would be constructed adjacent to Columbia or other existing rights-of-way where visual impact would be limited to that associated with widening of the existing rights-of-way. Nevertheless, the loss of trees would be most noticeable near residences where existing trees may screen the view of existing rights-of-way. To mitigate for this visual impact we have recommended that Millennium minimize the clearing of trees and vegetation that provide important visual screening of an existing right-of-way from the adjacent residences. Where screening must be removed for safety considerations, Millennium would offer to plant fast growing trees or shrubs within the temporary work areas where vegetative screening is removed between a residence and existing right-of-way.

Cultural Resources

Millennium has completed cultural resource surveys in Lake Erie and the Hudson River. No further testing is planned for the Lake Erie crossing. Further testing is planned for 15 sonar targets found in the Hudson River. Millennium filed cultural resource survey reports for the completed surveys with the Commission and the SHPOs that cover about 394.7 miles (95 percent) of the pipeline route and extra work areas, including the Lake Erie and Hudson River crossings, 158 access roads, 22 pipe storage/contractor yards, and 2 measuring stations. The New York SHPO commented on the October 1999 report and made recommendations for additional work. We concur with the New York SHPO's recommendations. Millennium also completed cultural resource surveys of the 9/9A Proposal.

Because additional surveys and testing are still required and final determinations of eligibility and effect have not been made for this project, we have recommended that construction be deferred until all cultural resource surveys, testing, and any required mitigation plans have been completed and the reports filed, along with SHPO comments, as appropriate.

Socioeconomics

Construction and operation of the project would not significantly increase total employment or population along the proposed route. Consequently, there would be little additional demand on housing or public services; short-term limitations on the availability of hotel/motel rooms may occur in the vicinity of construction spreads. Some traffic congestion could result when bulk equipment and materials are moved onto the construction right-of-way and when workers commute to and from a work site; however, this impact would be mostly temporary at any one location due to the migration of construction activity down the pipeline route. During construction, the project would generate a positive economic stimulus as a direct result of local expenditures for labor, materials, and equipment, and short-term jobs. During operation, the project would contribute to the tax base of the towns crossed by the pipeline.

With the implementation of the ECS, proposed mitigation measures, and our recommendations, we believe that construction and operation of the project can be done safely. We recognize that the construction process is an annoyance to many people and it will cause temporary disruptions to people and services. This is particularly true where in-street construction would occur (see Residential Areas and Construction in Mount Vernon above). However, this is not unlike the disruption created when any work is done on utilities that are buried beneath streets or significant road maintenance, repairs or improvements occur.

Environmental Justice

The public, regardless of economic status and ethnicity, has been given the opportunity to comment on the project. Although our requests for comments on environmental issues include requests that comments be filed during specified comment periods, we continued to accept comments about the project up until the EISs were finalized for publication. Our public meetings about the project were open to everyone. Oral and written comments were given equal consideration.

Construction and operation of the project would result in a temporary impacts on rural, urban and residential areas during construction, although implementation of the ECS, proposed mitigation measures, and our recommendations would mitigate these impacts. The Millennium Pipeline Project is a linear project and would affect populations from a variety of ethnic and economic backgrounds. The City of Mount Vernon is about 72.4 percent minority. It is the only minority community along the 422-mile-long project. About 0.36 percent of the project constructed within the city. However, about 61 percent of the proposed in-street construction for the project would be in Mount Vernon. This construction is needed because of the

location of the interconnection of Millennium's proposed facilities and ConEd's existing 20-inch-diameter pipeline.

We believe that natural gas pipelines can be constructed and operated safely when this is done in compliance with the USDOT regulations. We do not believe that construction or operation of the pipeline would have disproportionate adverse human health or environmental effects on any minority or low income communities or Native American groups.

Air and Noise

We have identified no significant short- or long-term impact on air or noise quality as a result of construction and operation of the project. There would be a beneficial impact on the air quality of local and regional airsheds if natural gas were to replace current and continued use of more-polluting fuels. We have not quantified this effect since we don't know the specific end-use for the gas. To minimize noise impact at residences that may be affected by noise from directional drilling rigs, we recommend that Millennium file a site-specific plan identifying how it would reduce construction noise during a directional drill before construction.

Construction noise would be intermittent and would vary from hour to hour at any single location depending on the equipment in use and the operation being performed. Millennium provided an estimate for noise produced by the various pieces of construction equipment expected to be used along U.S. Route 9, State Route 9A, and State Routes 9A/100. The overall noise level in the vicinity of construction activities was estimated at an L_{dn} of 86.4 dBA over a 24-hour period, although noise levels would be higher at stationary noise receptors in the immediate vicinity of construction. Since construction would move at about 400 feet per day, the duration of exposure to high noise levels would be limited to a relatively short period of time.

Alternatives

We evaluated 15 possible system alternatives using varying combinations of the existing pipeline systems (or proposed expansions of these systems) of Vector, TransCanada, Tennessee, National Fuel, ANR, Independence, Transco, Duke (Texas Eastern and Algonquin), CNG, eCORP, and Iroquois. These system alternatives were identified mostly to minimize overall environmental impact or to avoid impacts associated with the Lake Erie and Hudson River crossings. To avoid the Lake Erie crossing, we evaluated use of the Niagara Import Point and the pipeline systems of Vector, TransCanada, Tennessee, and National Fuel and an onshore route along the proposed ANR/Independence/Transco systems. To avoid the Hudson River crossing, we evaluated the pipeline systems of Algonquin and Iroquois. Some of these pipeline system alternatives were identified by us; others were suggested by the pipeline companies themselves. All made use of varying combinations of the existing or proposed pipeline facilities and additional pipeline loops and compression. However, none of the pipeline companies filed applications to construct or operate these alternatives. We found none of the system alternatives to be reasonable or practical for varying reasons, including the potential for at least equal or greater environmental impact, construction constraints, the difficulty associated with using multiple pipeline systems to transport the gas volumes, or the cost differential associated with the expansion that would affect the likelihood of the project ever being proposed.

We also evaluated 9 major route alternatives, the most significant being the ConEd Offset/Taconic Parkway Alternative discussed below. The others included two major route alternatives around Lake Erie and one alternative across Lake Erie, one major route alternative across New York State, two alternative crossings across the Hudson River, and two major route alternatives in Westchester County. With the exception of the ConEd Offset/Taconic Parkway Alternative discussed below, we found none of these major route alternatives to be reasonable or practical.

In addition, we reviewed 26 route variations proposed by landowners and 17 line changes proposed by Millennium to address landowner concerns. These are minor realignments that were identified by landowners, in many instances, to avoid or minimize impact on specific concerns on their properties. Of these, we agreed that Millennium should incorporate the 17 line changes and the following 14 variations (see section 6):

- Moore Variation (MPs 94.0 to 94.4)
- Grimins Variation (MPs 185.0 to 186.0)
- Moss Hill Road Variation (MPs 204.3 to 204.4)
- Larison Variation (MPs 213.6 to 214.0)
- Micha Variation (MPs 243.4 to 244.7)
- Fava Variation (MP 249.4)
- Bauer Variation (MPs 302.5 to 303.0)
- Trader Variation (MP 314.4 to 314.5)
- Mission Land Road Variation (MPs 351.6 to 352.4)
- Briarcliff Commons Variation (MP 401.3 to 401.5)
- Ridge Hill Variation (MPs 416.6 to 416.8)
- Mosiello Variation (MP 416.8 to 417.0)
- Parkway Variation (MP 418.3 to 420.5)
- Mount Vernon Variation (MP 421.8)

ConEd Offset/Taconic Parkway Alternative (MPs 391.9 to 404.5/Alternative MPs 0.0 to 13.3)

This alternative in Westchester County is one of the most controversial portions of the project and accounted for the majority of comments received on the SDEIS. It was proposed by municipalities of Briarcliff Manor, Croton-on-Hudson, and Ossining in response to our suggestion in the SDEIS of the ConEd Offset/State Route 100 Alternative as a compromise between the original proposal that was located entirely within the ConEd right-of-way and Millennium's amended route, the 9/9A Proposal that minimized use of the ConEd right-of-way but required construction along U.S. Route 9 and State Routes 9A and 100.

Most of the concerns were associated with: loss of trees from within the ConEd right-of-way that serve as screening between residences and the powerline right-of-way; impacts on conservation and recreation lands within the Brinton Brook Sanctuary, Jane E. Lytle Memorial Arboretum, and Teatown Lake Reservation; blasting within the ConEd right-of-way; health concerns associated with dioxins from residual herbicides used 20 years ago on the ConEd right-of-way; the crossing the Croton River aquifer and wellfield protection areas; and proximity of the pipeline along the Taconic State Parkway to the Todd Elementary, and Middle and High Schools in Briarcliff Manor. Since the Todd Elementary School is about 150 feet from the pipeline along the southbound lane of the Taconic State Parkway, we evaluated both the north and south sides of the parkway. We have completed a detailed environmental analysis of this alternative and have made recommendations to minimize impacts, where appropriate.

There is no clear environmental advantage between the 9/9A Proposal and the ConEd Offset/Taconic Parkway Alternative. Neither route is popular with the people who would be affected by its construction, and both would have limited adverse impacts. We have recommended additional mitigation measures to reduce these impacts. However, the ConEd Offset/Taconic Parkway Alternative has the advantage of co-location on an existing utility rights-of-way for over half of its length, rather than imposing a utility within a narrow transportation corridor. Further, Millennium and the PSCNY have agreed to stringent safety specifications that would be part of the design of the pipeline and to allow the pipeline to be installed closer to the powerlines to take advantage of the existing cleared right-of-way, thus minimizing tree clearing in sensitive areas and minimizing construction disturbance on adjacent property owners. Based on the filed comments, the local governments object to both routes, but generally prefer the ConEd Offset/Taconic

Parkway Alternative over the 9/9A Proposal, and we recommend the ConEd Offset/Taconic Parkway Alternative to the Commission.

.2 FERC STAFF'S RECOMMENDED MITIGATION

If the Commission certifies the proposed project, we recommend that the following measures be included as specific conditions to further mitigate the environmental impact associated with the construction and operation of the proposed project:

Millennium shall follow the construction procedures and mitigation measures described in its application and supplements (including responses to staff data requests) and as identified in the final environmental impact statement (FEIS), unless modified by this Order. Millennium must:

- a. request any modification to these procedures, measures, or conditions in a filing with the Secretary of the Commission (Secretary);
- b. justify each modification relative to site-specific conditions; explain how that modification provides an equal or greater level of environmental protection than the original measure; and
- d. receive approval in writing from the Director of the Office of Energy Projects (OEP) **before using that modification.**

The Director of OEP has delegation authority to take whatever steps are necessary to insure the protection of all environmental resources during construction and operation of the project. This authority shall allow:

- a. the modification of conditions of this Order; and
- b. the design and implementation of any additional measures deemed necessary (including stop work authority) to assure continued compliance with the intent of the environmental conditions as well as the avoidance or mitigation of adverse environmental impact resulting from project construction and operation.

Prior to any construction, Millennium shall file an affirmative statement with the Secretary, certified by a senior company official, that all company personnel, environmental inspectors, and contractor personnel will be informed of the environmental inspector's authority and have been or will be trained on the implementation of the environmental mitigation measures appropriate to their jobs **before** becoming involved with construction and restoration activities.

4. The authorized facility locations shall be as shown in the FEIS, as supplemented by filed alignment sheets. **As soon as they are available, and before the start of any construction**, Millennium shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by this Order. All requests for modifications of environmental conditions of this Order or site-specific clearances must be written and must reference locations designated on these alignment maps/sheets.

Millennium shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage yards, new access roads, and other areas that would be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, and documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered species would be affected, and whether any

other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of OEP **before construction** in or near that area.

This requirement does not apply to route variations required herein or minor field realignments per landowner needs and requirements which do not affect other landowners or sensitive environmental areas such as wetlands.

Examples of alterations requiring approval include all route realignments and facility location changes resulting from:

- a. implementation of cultural resources mitigation measures;
 - b. implementation of endangered, threatened, or special concern species mitigation measures;
 - c. recommendations by state regulatory authorities; and
 - d. agreements with individual landowners that affect other landowners or could affect sensitive environmental areas.
6. Within 60 days of the acceptance of this certificate and **before construction** begins, Millennium shall file an initial Implementation Plan with the Secretary for review and written approval by the Director of OEP describing how Millennium will implement the mitigation measures required by this Order. Millennium must file revisions to the plan as schedules change. The plan shall identify:
- a. how Millennium will incorporate these requirements into the contract bid documents, construction contracts (especially penalty clauses and specifications), and construction drawings so that the mitigation required at each site is clear to onsite construction and inspection personnel;
 - b. the number of environmental inspectors assigned per spread, and how the company will ensure that sufficient personnel are available to implement the environmental mitigation;
 - c. company personnel, including environmental inspectors and contractors, who will receive copies of the appropriate material;
 - d. what training and instructions Millennium will give to all personnel involved with construction and restoration (initial and refresher training as the project progresses and personnel change), with the opportunity for OEP staff to participate in the training session(s);
 - e. the company personnel (if known) and specific portion of Millennium's organization having responsibility for compliance;
the procedures (including use of contract penalties) Millennium will follow if noncompliance occurs; and
 - g. for each discrete facility, a Gantt or PERT chart (or similar project scheduling diagram), and dates for:
 - i. the completion of all required surveys and reports;
 - ii. the mitigation training of onsite personnel;
 - iii. the start of construction; and
 - iv. the start and completion of restoration.
7. Millennium shall employ at least a team of (i.e., two or more or as may be established by the Director of OEP) environmental inspectors per construction spread. The environmental inspectors shall be:

- a. responsible for monitoring and ensuring compliance with all mitigative measures required by this Order and other grants, permits, certificates, or other authorizing documents;
 - b. responsible for evaluating the construction contractor's implementation of the environmental mitigation measures required in the contract (see condition 6 above) and any other authorizing document;
 - c. empowered to order correction of acts that violate the environmental conditions of this Order, and any other authorizing document;
 - d. a full-time position, separate from all other activity inspectors;
 - e. responsible for documenting compliance with the environmental conditions of this Order, as well as any environmental conditions/permit requirements imposed by other Federal, state, or local agencies; and
 - f. responsible for maintaining status reports.
- 8 Millennium shall file updated status reports prepared by the lead environmental inspector with the Secretary on a weekly basis until all construction-related activities, including restoration and initial permanent seeding, are complete. On request, these status reports will also be provided to other Federal and state agencies with permitting responsibilities. Status reports shall include:
- a. the current construction status of each spread, work planned for the following reporting period, and any schedule changes for stream crossings or work in other environmentally sensitive areas;
 - b. a listing of all problems encountered and each instance of noncompliance observed by the environmental inspectors during the reporting period (both for the conditions imposed by the Commission and any environmental conditions/permit requirements imposed by other Federal, state, or local agencies);
 - c. corrective actions implemented in response to all instances of noncompliance, and its cost;
 - d. the effectiveness of all corrective actions implemented;
 - e. a description of any landowner/resident complaints which may relate to compliance with the requirements of this Order, and the measures taken to satisfy its concerns; and copies of any correspondence received by Millennium from other Federal, state or local permitting agencies concerning instances of noncompliance, and Millennium's response.
9. Millennium must receive written authorization from the Director of OEP before commencing service from the project. Such authorization will only be granted following a determination that rehabilitation and restoration of the right-of-way is proceeding satisfactorily.
10. **Within 30 days of placing the certificated facilities in service**, Millennium shall file an affirmative statement with the Secretary, certified by a senior company official:
- a. that the facilities have been constructed and installed in compliance with all applicable conditions, and that continuing activities will be consistent with all applicable conditions; or
 - b. identifying which of the certificate conditions Millennium has complied with or will comply with. This statement shall also identify any areas along the right-of-way where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

Millennium shall hire and fund a third-party contractor, to work under the direction of the Commission staff, for the sole purpose of monitoring Millennium's compliance with the environmental conditions attached to the order, including all measures proposed by Millennium. A draft monitoring program shall be developed by Millennium and filed with the Commission for

review and approval of the Director of OEP, along with a proposal from potential contractors that will be available to provide the monitoring and reporting services. The monitoring program shall include the following elements: (2-11)

- a the employment by the contractor of one to two full-time, on-site monitors per construction spread;
 - b the employment by the contractor of a full-time compliance manager to direct and coordinate with the monitors, manage the reporting systems, and provide technical support to the Commission staff;
 - c a systematic strategy for the review and approval by the contract compliance manager and monitors of variances to certain construction activities as may be required by Millennium based on site-specific field conditions;
 - d the development of an Internet web site for the posting of daily or weekly inspection reports submitted by both the third-party monitors and Millenniums' environmental inspectors; and
 - e a discussion of how the monitoring program could incorporate and/or be coordinated with the monitoring or reporting that may be required by other Federal and state agencies.
12. **Prior to construction**, Millennium shall modify section II.C .2 of its ECS so that it is consistent with section V.F.3.d of our Plan which states that no more than ton of wood chips per acre be spread on the construction right-of-way. (2-18)
 - 3 **Prior to construction**, Millennium shall modify section II.F of its ECS to state that restoration of residential properties will begin immediately after trench backfilling. (2-22)
 - 4 **Prior to construction**, Millennium shall modify ECS section II.G to state that it will restore all trails and section II.J to state that it will restore all roads immediately after backfilling the trench so that they are opened quickly for full public use. (2-23)
 15. **Before construction**, Millennium shall file with the Secretary the results of surveys conducted in the area between mileposts (MP) 90.5 and 91.3 when access is obtained, and any mitigation plans proposed to minimize impact on the "Rock City" geologic formations for review and written approval of the Director OEP. (p 5-5)
 16. Millennium shall modify its Environmental Construction Standards (ECS) to include a contingency plan, developed in consultation with the New York State Department of Agriculture and Markets (NYSDA&M), for overwintering agricultural areas and file it for review and written approval of the Director of OEP **before construction**. If the NYSDA&M agriculture inspector directs Millennium to delay final cleanup, Millennium shall file a report with the Secretary identifying these locations by milepost. (p 5-11)
- Millennium shall continue consultations with the NYSDA&M regarding specialized construction procedures in agricultural areas that shall be incorporated into the ECS. The finalized ECS shall be filed with the Secretary, **before construction**, for review and written approval of the Director of OEP. (p 5-11)
18. Millennium shall identify aquifer protection districts and watersheds on its construction alignment sheets (CAS). (P. 5-17)
 19. Millennium shall expand its Spill Prevention, Containment, and Control Plan to specifically include the following: (p. 5-17)

- a. a requirement that all construction equipment be inspected daily for leaks before work;
 - b. a listing of specific water supply, municipal, or state officials to be contacted in the event of a reportable spill; and
a listing of the requirements of local or state officials concerning construction in aquifer protection areas and public water supply watersheds.
20. Millennium shall file with the Secretary the location by milepost of all drinking water wells and springs within 150 feet of the construction work area and their distance from the construction work area, **before construction**. In addition, Millennium shall specify which wells would be within perched water systems. (p 5-17)
21. Millennium shall include in its weekly construction progress reports any complaints concerning water supply yield or quality and how each was resolved. **Within 30 days of placing the facilities in service**, Millennium shall file a summary report identifying all potable water supply systems damaged by construction and how they were repaired. (p 5-17)
22. Millennium shall file with the Secretary a site-specific plan to complete the open-cut crossings of Cassadaga Creek (MP 59.9), State Drainage Ditch (MP 72.9), and Catatunk Creek (MP 228.1) within 48 hours, **prior to construction**, or it shall file a site-specific plan explaining why more time is needed for the crossings for review and written approval of the Director of OEP. (p 5-28)
23. Millennium shall file with the Secretary a contingency plan for the crossing of each waterbody if the directional drill (Ramapo River, MP 370.0; Croton River, MP 396.8) or conventional bore (Bemus Creek, MP 55.6; Great Valley Creek, MP 94.7; Wrights Creek, MP 95.8; Canisteo River, MP 171.5; Nanticoke Creek, MP 240.7; Wallkill River, MP 350.7; and Intermittent Ditch to Eurich Ditch - MP 353.9) is unsuccessful. **Prior to construction**, Millennium shall file with the Secretary for review and written approval of the Director of OEP, a plan with the set of criteria it will use to identify when a horizontal directional drill or bore is unsuccessful. This shall be a site-specific plan that includes scaled drawings identifying all areas that would be disturbed by construction. Millennium shall file this plan **concurrent with its application** to the U.S. Army Corps of Engineers (COE) and New York State Department of Environmental Conservation (NYSDEC) for a permit to construct using this plan. The Director of OEP must review and approve this plan in writing **before construction of the alternate crossing plan**. (p 5-35)
24. Millennium shall consult with the COE and expand the site-specific crossing plan for the Genesee River (MP 137.3) to include construction and restoration mitigation measures to protect the integrity of the flood control berm. The revised plan and COE comments shall be filed with the Secretary for review and written approval by the Director of OEP **before construction**. (p 5-36)
25. **Before construction**, Millennium shall file with the Secretary for review and written approval by the Director of OEP, the finalized plan for the Lake Erie crossing. The plan shall include: (p 5-54)
- a. the trench depth recommendations determined by the Cold Regions Research and Engineering Laboratory analysis;
 - b. the manual for handling emergency repair of the pipeline in Lake Erie;
 - c. finalized construction procedures, including construction schedules and timing, procedures for minimizing and monitoring dispersion of the turbidity plume and sediment deposition, and a description of the mitigative actions that Millennium would take if the observed turbidity plumes exceed the predicted plumes; and

- d. specific information on the discharge rate of spoil in the lake bottom in modeled zones F, G, H, I, and J after the construction contractor and jet sled equipment have been selected.
26. Millennium shall **not begin construction** of any portion of the project **until** it files with the Secretary a copy of the appropriate permits from the Canadian National Energy Board regarding construction of the Canadian portion of the project. (p 5-54)
27. **Prior to construction**, Millennium shall file with the Secretary: 1) the finalized Hudson River Sampling Plan developed to meet the NYSDEC's section 401 Water Quality Certificate, and 2) a work plan and schedule for the Hudson River crossing showing completion of construction activities within the September 1 to November 15 time window, including contingency plans for delays due to weather, equipment malfunction, or other work slowdowns. All monitoring data collected during construction of the Hudson River shall be filed with the Secretary at the same time it is submitted to the NYSDEC.(p 5-62)
28. **Prior to construction**, Millennium shall file with the Secretary the results of any alternative crossing locations developed in consultation with the New York City Department of Environmental Protection (NYCDEP), the site-specific crossing plan and design for the Catskill Aqueduct (approximate MP 418.2), the independent engineering assessment of the proposed site-specific crossing plan, and any comments from the NYCDEP on the alternative crossing locations and the site-specific crossing plan. The final Catskill Aqueduct crossing plan shall be filed with the Secretary for review and written approval of the Director of OEP. (p 5-65)
29. Millennium shall develop construction and restoration plans for the Mongaup Wildlife Management Area (MP 323.8 to MP 330.2) and the Doris Duke Wildlife Sanctuary (MP 364.9 to MP 365.8) in consultation with the NYSDEC, and New York State Office of Parks, Recreation, and Historic Preservation (NYSOPRHP) and Palisades Interstate Park Commission, respectively. The final plans shall be filed with the Secretary **before construction**. (p 5-73)
30. If Millennium develops wildlife enhancement areas in consultation with the U.S. Fish and Wildlife Service (FWS), COE, NYSDEC, and landowners, it shall identify the locations of these wildlife enhancement areas on the CAS and file them with the Secretary **before construction**. (p 5-73)
- Before construction**, Millennium shall complete consultations with the New York Natural Heritage Program (and the National Park Service [NPS], as appropriate) to determine if any unique natural communities would be crossed, including the diverse vegetation communities in Chautauqua County between MPs 54.4 and 56.4, and the old growth eastern hemlock forest between MPs 279.2 and 279.3 in Delaware County. Millennium shall file with the Secretary, for review and written approval by the Director of OEP **before construction**, mitigation plans developed through these consultations. The mitigation plans shall include all correspondence, telephone logs, locations of each area by milepost, crossing length, acreage of vegetative community affected, and proposed mitigation. (p 5-75)
32. **Prior to construction**, Millennium shall include all of the terms and conditions of the NMFS' incidental take statement on its final site-specific Hudson River crossing plan, and file the plan with the Secretary for review and written approval from the Director of OEP. The terms and conditions are:
- a. Trained NMFS-approved observers must be present on the dredge and backfill barge for the duration of the project;

- b. If any whole shortnose sturgeon (alive or dead) or sturgeon parts are taken incidental to the project, Carrie McDaniel (978-281-9388) or Mary Colligan (9789-281-9116) must be contacted within 24 hours of the take. An incident report for shortnose sturgeon take (for a copy see the NMFS's September 14, 2001 biological opinion, available for viewing on FERC's internet site at www.ferc.gov; go to the "RIMS" link and follow instructions to access the document) shall also be completed by the observer, and sent to Carrie McDaniel via fax (978-281-9394) within 24 hours of the take. Every incidental take (alive or dead) shall be photographed and measured, if possible; and Silt curtains shall be bottom weighted, and run surface-to-bottom around the area being backfilled in order to effectively minimize suspended sediment concentrations.

In addition, if facilities are not constructed within 1 year from the date of issuance of the certificate, Millennium should consult with the FWS and NMFS to determine if additional consultations or surveys are required. (5-79)

33. No construction shall begin between MP 339.9 (intersection of Peenpack Trail and Martin Road) and MP 341.7 (Shinhollow Road) until the bore of the Neversink River is successfully completed. Millennium shall also abandon the existing pipeline crossing of the Neversink River in place. (p 5-80)
34. In the event that a bore cannot be completed at the proposed Neversink River crossing location (MP 341.0), Millennium shall develop a contingency plan in consultation with the FWS, NYSDEC, and The Nature Conservancy. The plan, at a minimum, must: (p 5-80)
- a. identify an alternative crossing location, and/or alternative route and construction methods (if required);
 - b. include an analysis of the environmental impacts associated with construction of the contingency plan (i.e., definition of the impact area or construction work areas); and
 - c. include a survey of the entire construction work area and area of potential effect by a biologist qualified to identify dwarf wedge mussels, as required.

All survey work must use FWS-approved methodologies, and must be completed **before the start of any alternative construction activity** in the project segment between MP 339.9 and 341.7. The mitigation plan and all associated consultation documentation shall be filed with the Secretary for review and written approval by the Director of QEP **before construction**.

35. If flows are low enough, Millennium shall use a flume or a dam and pump construction technique for the crossing of Cassadaga Creek (MP 59.9) and shall complete all instream work between July 1 and November 30. (p 5-81)
36. Millennium shall consult with the FWS regarding the site-specific plan being developed with the NYSDEC for the new permanent boat launch facility at the Mongaup River/Rio Reservoir (MP 330.0) to protect bald eagles and their habitat. Millennium shall file the final plan and all comments received from the NYSDEC and FWS on the new boat launch facility with the Secretary **before construction**. (p 5-82)
37. If blasting is required in designated bald eagle activity areas when bald eagles are present, Millennium shall develop with the NYSDEC and FWS a construction plan that includes the potential amount, location, and schedule of the required blasting. The finalized construction plans, and all associated consultation documentation, shall be filed with the Secretary for review and written approval by the Director of OEP **before construction**. (p 5-83)

38. Millennium shall contact the FWS and NYSDEC in the fall the year before the start of construction to determine if any additional bald eagle nests have been found in the vicinity of the project area. Documentation of the results of this consultation shall be filed with the Secretary for review and written approval by the Director of OEP **before construction**. (p 5-84)
39. Millennium shall continue consultations with the FWS and NYSDEC regarding any other requirements for surveying, monitoring, or avoiding special status species (the bean villosa, long head darter, and green floater) or their habitats. The results of these consultations, including copies of all correspondence, and proposed mitigation shall be filed with the Secretary **before construction** for review and written approval by the Director of OEP. (p 5-84)
40. Millennium shall employ at least one wetland specialist per construction spread. The wetland specialist must be familiar with the existing hydrologic patterns of the affected wetlands within the construction work area and shall be present during final grading of these wetlands. The wetland specialist shall have the authority to direct any modifications to the final grade, as necessary, to ensure that the original hydrologic patterns of affected wetlands are restored to the fullest extent practicable. (p 5-86)
41. Millennium shall not use an additional 25 feet of Columbia's existing right-of-way in wetlands crossed between MPs 41.7 and 376.4. (p 5-88)
42. Millennium shall use a non-seed carrying barrier (such as straw or fabric), determined in consultation with the NYSDEC and COE to separate wetland and non-wetland subsoils, where non-wetland subsoil from grading operations would be stored in wetlands. The barrier material shall be visible to the equipment operator when it is exposed during restoration. Millennium shall file the milepost location of the areas where these barriers are used in its weekly construction report. (p 5-89)
43. Millennium shall establish an environmental mitigation complaint resolution procedure that would be in place throughout construction and restoration of the Millennium Pipeline Project. The procedure shall provide landowners and/or abutters with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the pipeline facilities and restoration of the right-of-way. **Prior to construction**, Millennium shall mail the complaint procedure to each landowner whose property will be crossed by the project and abutters whose properties are adjacent to a road or utility right-of-way that will be used for installation of the pipeline. The complaint resolution procedure must: (p 5-94)
 - a. include a local contact (and telephone number) and Millennium's "hotline" contact (and toll-free telephone number) that the landowner/abutter should first call with his/her concerns;
 - b. indicate how long it will take after complaints/inquiries are made for Millennium to respond;
indicate that the response will inform the caller how and when problems were or will be resolved; and
 - d. instruct the landowner/abutter that if they are still not satisfied with the response from contacting Millennium's "hotline," then the Commission's Enforcement Hotline may be contacted at (877)303-4340.
44. Millennium shall include in its weekly status report a table that contains the following information for each problem/concern reported: (p 5-94)
 - a. the identity of the caller and the date of the call;

- b. the CAS alignment sheet number, property identification number, and milepost/survey station number of the property;
 - d. a description of the concern/problem; and
an explanation of how and when the problem was resolved, or why it has not been resolved.
45. Millennium shall continue consultations with New York State Electric and Gas (NYSEG) regarding the placement of the pipeline within or adjacent to the NYSEG powerline right-of-way (MPs 232.2 to 243.5) and develop mitigation plans to reduce the risk associated with a pipeline accident during construction and operation of the pipeline. The plan and NYSEG's comments on the plan shall be filed with the Secretary for review and approval by the Director of OEP **before construction** may begin. (p 5-98)
46. Millennium shall update the listing of residences within 50 feet of the construction work area and file this information with the Secretary **before construction**. For all previously unidentified residences closer than 25 feet to the construction work area, Millennium shall file a site-specific plan with the Secretary for the review and written approval of the Director of OEP **before construction**. (p 5-101)
47. Millennium shall develop site-specific construction plans for construction adjacent to the Hamilton Elementary School, Fire Station No. 4 on Oak Street, and the fire station at South 14th and 3rd Streets in Mount Vernon. These plans shall include measures to assure the safety of Hamilton Elementary School students while at school and going to and from school, and adequate movement of emergency fire equipment during in-street construction activities. These plans shall be developed in consultation with the City of Mount Vernon and emergency service providers and filed with the Secretary, **prior to construction**, for the review and written approval of the Director of OEP. (p 5-103)
48. Following consultation with appropriate authorities and community representatives, Millennium shall prepare site-specific construction and mitigation plans for the City of Mount Vernon (MPs 419.9 to 421.8). These plans shall address construction-related issues, including: (p 5-103)
- a. construction schedules and timing;
 - b. traffic detours around construction activities;
 - c. resident notification of construction schedules;
 - d. alternate parking locations for loss of parking spaces;
 - e. provisions for maintenance of access to businesses and residential buildings;
 - f. provisions for maintenance of construction equipment to reduce air and noise pollution; and
 - g. provisions for appropriate utility repair crews and materials to be on site at all times during construction in residential/commercial areas between MPs 420.6 and 421.8.

If utilities to residential buildings are damaged and cannot be restored on the same day, Millennium must offer affected residents alternative housing and transportation to and from these alternative housing locations. The plans, with documentation of consultation with appropriate authorities, shall be filed with the Secretary for review and written approval by the Director of OEP **before construction**.

49. **Before construction**, Millennium shall provide each landowner affected by construction with a final CAS showing the construction work area and pertinent information about how the Millennium Pipeline Project would be constructed and restored on their property. (p 5-105)

50. **Before construction** across the Metro-North Commuter Railroad Company (Metro-North) railroad tracks in Westchester County, Millennium shall file the detailed plans and design drawings with the Commission along with comments on the plans from Metro-North for review and written approval by the Director of OEP. (p 5-106)
5. **Before construction**, Millennium shall file with the Secretary all mitigation plans for construction of the pipeline and restoration of the construction right-of-way developed with the property owners identified on table 5.8.3.2-1, for review and written approval of the Director of OEP. (p 5-107)
52. Millennium shall continue consultations with the NPS to finalize the site-specific plan for the crossing of the Appalachian Trail at MP 363.6. Millennium shall file the results of this consultation, and comments from the NPS and the State Historic Preservation Officer (SHPO), with the Secretary for review and written approval by the Director of OEP **before construction**. (p 5-116)
53. Millennium shall provide off road vehicle (ORV) control in forested areas as specified in its ECS to any landowner or land manager that requests such controls along its construction right-of-way. If these controls extend off the construction right-of-way, Millennium shall conduct appropriate surveys in the off-right-of-way areas. The results of these surveys, and plans for ORV controls that extend off the right-of-way, shall be filed with the Secretary before their installation. (p 5-118)
- Prior to beginning construction** of any project facilities, Millennium shall file with the Secretary a determination of consistency with the New York State coastal zone management plan. (p 5-139)
55. Millennium shall minimize the clearing of trees and vegetation that provide visual screening of an existing right-of-way from the adjacent residences. Where screening must be removed for safety considerations, Millennium shall offer to plant fast growing trees or shrubs within the temporary work areas where vegetative screening is removed between a residence and existing right-of-way. Millennium shall file the milepost locations of areas where tree screening adjacent to residences would be removed **prior to construction**. (p 5-141)
56. Millennium shall **defer construction** of facilities, and use of all staging, storage, and temporary work areas, and new or to-be-improved access roads **until**: (p 5-146)
- a. Millennium files with the Secretary all additional cultural resources surveys and evaluation reports, and any required treatment plans, and the appropriate SHPO's comments on the reports and plans;
 - b. the Advisory Council on Historic Preservation has been given the opportunity to comment on the project; and
 - c. the Director of OEP reviews and approves all cultural resources reports and plans, and notifies Millennium in writing that construction may proceed.

All material filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION -- DO NOT RELEASE."

Millennium shall file a site-specific plan identifying how it would reduce construction noise during a directional drill near residences. The plan shall include projected daytime and nighttime noise levels at nearby residences and mitigation measures that would be used to minimize noise at these residences. The plan shall be filed with the Secretary for review and written approval by the Director of OEP **before construction**. (p 5-162)

58. Millennium shall prepare a report that contains the following information regarding the water supply system on the Supa property (approximate MP 242.0): (p 6-84)
- a. the elevation of the spring outlet and cistern;
 - b. the water bearing stratum for the spring at source, if possible;
 - c. the depth to water along the pipeline trench, and the water bearing strata along the pipeline trench and orthogonal (right angle) downhill to spring;
 - d. if the pipeline trench or sidehill cut would intersect the water bearing stratum that feeds the spring or the spring's water source, determine if the pipeline trench would convey water away from the spring based on trench elevations; and if the pipeline trench would convey water away from the spring, develop engineering and/or other mitigation measures (including a reroute upslope to avoid the water table) to maintain uninterrupted flow to the spring and cistern.

The report shall include site-specific diagrams as necessary to illustrate the flow of water to the spring and cistern and shall be filed with the Secretary for review and written approval by the Director of OEP before construction.

If the Route 9/9A Proposal (MPs 391.2 and 404.1) is used then conditions 59 to 69 would apply to the Millennium Pipeline Project.

59. Millennium shall consult with and assist Federal Emergency Management Agency (FEMA) with the development of a Contingency Plan for the emergency evacuation route for the Indian Point Nuclear Power Plant on the 9/9A Proposal. **Prior to construction**, Millennium shall file with the Secretary all correspondence with FEMA and the final Contingency Plan. (5-99)
60. Millennium shall coordinate with the New York State Department of Transportation (NYSDOT) about the pipeline siting with respect to a potential ramp location near MP 402.5 on the 9/9A Proposal and file any correspondence or plans developed with the NYSDOT with the Secretary **prior to construction**.(p 5-106)
61. On U.S. Route 9 (approximate MPs 391.8 to 394.2) on the 9/9A Proposal, Millennium shall avoid construction activities in the northbound lane between the hours of 3 and 8 p.m., unless otherwise approved or restricted by the NYSDOT in writing. (p 5-124)
62. On State Routes 9A/100 (approximate MPs 401.3 to 404.0) on the 9/9A Proposal, Millennium shall avoid construction for an additional 4 hours during the peak evening traffic period between the hours of 3 and 7 p.m., unless otherwise approved or restricted by the NYSDOT in writing. (p 5-124)
63. **Prior to construction**, Millennium shall file a traffic management plan for each ramp closure on the 9/9A Proposal with the Secretary for review and written approval by the Director of OEP. The traffic management plan shall identify the hours of closure, the method of advance notification, the detour route, and signing, as needed. The plan shall discuss the feasibility of using weekends for construction. Millennium shall consult with the NYSDOT and file its comments and/or approval of the plan. (p 5-125)
64. **Prior to construction**, Millennium shall file with the Secretary for review and written approval by the Director of OEP, a traffic management plan for each road that is proposed for an open cut on the 9/9A Proposal. The traffic management plan shall identify construction work hours, lane closures (including the duration of the closure), how traffic would be managed (e.g., signs, flagpersons) and routed through construction, what provisions would be made for pedestrian traffic, and traffic

detours, as needed. The traffic management plan shall discuss the feasibility of using weekends for construction. Millennium shall consult with the NYSDOT and file its comments and/or approval of the plan. (p 5-125)

65. Millennium shall avoid construction on the 9/9A Proposal during the weekday morning peak period within 300 feet of signalized intersections (State Route 134 [MP 398.6], Chappaqua Road [MP 400.4], and North State Road [MP 401.1]) along State Route 9A, unless otherwise approved or restricted by the NYSDOT in writing. (p 5-128)
66. **Prior to construction**, Millennium shall file with the Secretary for review and written approval by the Director of OEP, a traffic management plan for installation of the pipeline at bridge overpasses on the 9/9A Proposal. The traffic management plan shall identify construction work hours, lane closures (including the duration of the closure), how traffic would be managed (e.g., signs, flagpersons) and routed around construction, and shall discuss the feasibility of using weekends for construction. Millennium shall consult with the NYSDOT and file its comments and/or approval of the plan.(p 5-128)
67. **Before construction**, Millennium shall file with the Secretary for review and written approval by the Director of OEP, a blasting plan for the 9/9A Proposal that identifies the locations by milepost where blasting is necessary during construction along U.S. Route 9, State Route 9A, and State Routes 9A/100, how blasting would be conducted, and how traffic would be managed. The plan shall be developed in consultation with the NYSDOT and include any necessary restrictions to avoid lane reductions (to accommodate work areas) before and after any blasting operation and until any traffic backups have ceased. Millennium shall file the NYSDOT comments and/or approval of the plan. (p 5-130)
68. **Prior to construction**, Millennium shall develop a plan in consultation with the Village of Croton-on-Hudson regarding its Local Waterfront Revitalization Plan to enhance the shoreline park in the vicinity of the 9/9A Proposal. The plan shall be filed with the Secretary. (p 5-132)
69. Millennium shall file with the Secretary, **before construction**, the site-specific plan developed for NYSDOT to restore vegetative screening or to install screening fences on NYSDOT property near residences on the 9/9A Proposal, and all final plans developed with landowners to protect or replace specific trees. (p 5-141)

If the ConEd Offset/Taconic Parkway Alternative (MPs 391.9 and 404.5/Alternative MPs 0.0 to 13.3) is used then conditions 70 to 76 would apply to the Millennium Pipeline Project.

70. **Before construction**, Millennium shall file with the Secretary for review and approval by the Director of OEP, a detailed blasting plan for construction along the ConEd Offset/Taconic Parkway Alternative. This plan shall include at a minimum: (p 6-33)
- a. the blasting recommendations as filed by ConEd in its filings with the Commission on October 23 and November 7, 2000 and in any subsequent consultations;
 - b. a listing by milepost of each location that would require blasting, either for the trench or to establish a level working right-of-way, as determined by core drilling, shallow refraction seismic surveys, or other geophysical means; and blasting specifications, including general provisions for storage of explosives, pre-blast operations (such as drill hole dimensions, type and size of charges, loading and firing, etc.) procedures for discharge of explosives and notification of the public, disposal of explosive materials, the maintenance of blasting records, and pre- and post-blast inspections.

- 71 Millennium shall restrict all construction activities across the Croton Primary Aquifer between Alternative MPs 2.9 and 4.4 to the period of September 1 through October 30. (p 6-35)
72. Millennium shall continue consultations with Jane E. Lytle Memorial Arboretum representatives regarding the specific measures it would implement to minimize impact on the arboretum and wetland W08CT (Alternative MP 2.6) on the ConEd Offset/Taconic Parkway Alternative. These measures shall include a provision that the pipeline be located to avoid construction disturbance to Wetland W08CT and to minimize impact on the drainage swales and streams that supply it. In addition, Millennium shall include provisions to complete all construction activities (grading through restoration) adjacent to the Arboretum (Alternative MPs 2.5 to 2.7) at one time in the shortest time possible. Millennium shall file with the Secretary the final, site-specific plan that describes measures that would be implemented before and after construction, and includes scaled drawings identifying areas that would be disturbed within the arboretum and plans for restoration plantings and reseeding within the construction work area. (p 6-39)

Millennium shall prepare site-specific mitigation plans for residential properties adjacent to the ConEd Offset portion of the ConEd Offset/Taconic Parkway Alternative where tree screening would be removed and specifically at Alternative MPs 0.6, 0.8, 1.0, 3.1, and 7.1. For each property, prepare a dimensioned site plan that shows:

- a. the location of the residence in relation to the new pipeline, the ConEd right-of-way, and the nearest existing ConEd structures;
- b. the edge of the construction work area;
the edge of the new permanent right-of-way;
- d. vegetation that would be removed or preserved;
- f. a description of how the property would be protected from construction activities, and a restoration plan that describes how the construction right-of-way would be restored and replanted.

These plan(s) shall be filed with the Secretary for review and approval by the Director of OEP before construction. (p 6-44)

74. **Before construction**, Millennium shall file with the Secretary all mitigation plans for construction of the pipeline and restoration of the construction right-of-way developed with the property owners or land managers identified on table 6.2.6.1-6. (p 6-47)
75. Millennium shall prepare a detailed construction and restoration plan for construction through the Teatown Lake Reservation (Alternative MPs 4.8 through 6.2). This plan shall be developed in consultation with the Teatown Lake Reservation and include provisions to complete construction activities (grading through restoration) at one time in the shortest time possible, with the exception of the access road that may remain open for the passage of construction equipment. Millennium shall file with the Secretary the final, site-specific plan that describes measures that will be implemented before and after construction, and includes scaled drawings identifying areas that will be disturbed within the reservation and plans for restoration plantings and reseeding within the construction work area. (p 6-56)
76. **Before construction**, Millennium shall file with the Secretary a dimensioned site-specific plan of the pipeline between approximate Alternative MPs 10.5 and 11.0 of the ConEd Offset/Taconic

Parkway Alternative. This plan shall show the location of the pipeline, and construction work areas, in relation to the sewer line and Todd Elementary School. (p 6-59)