



5.0 INFRASTRUCTURE PLAN



5.0 Infrastructure Plan

5.1 Anticipated Development

The anticipated development provided in the Fort Monmouth Reuse and Redevelopment Plan was used to project the demands for the various utilities serving the area. The Reuse and Redevelopment Program is summarized on Page 3-12. Based on the Plan, Utility demands were calculated for gas, electric, water and wastewater based on the development summary provided. The demands were projected by development type in square feet (SF), within each of the three municipalities, and for 10 Year and 20 Year periods.

Projected utility demands were submitted to the appropriate utility company to review and provide:

- Input on the ability of the utility company to meet projected demands,
- An analysis of system improvements and upgrades needed to meet projected demands,
- Cost estimates associated with identified system improvements, and
- The utility company's policy with respect to a potential cost-sharing program.

A summary of the utility demand analyses along with the responses of the respective utility companies follows.

5.2 Utility Systems

Gas Utility

New Jersey Natural Gas (NJNG) currently provides service to and throughout the Fort Monmouth facilities, as this is the only utility that was previously privatized. The anticipated natural gas demand associated with the projected development is approximately 151,000 cubic feet per hour (CFH) for the 10 Year Plan and 68,000 CFH for the 20 Year Plan periods, for a total demand of approximately 219,000 CFH. Approximately 80% of the estimated gross natural gas demand for the total build-out is required for Office/R&D and Residential components of the Plan.

Adequacy of Existing System

NJNG, on the basis of their system model for the proposed development, responded that the existing system can support the 10 Year (until 2018) additional load in Tinton Falls, Eatontown, and Oceanport Reuse Areas. However, by the end of the 20 Year Plan (2028) the model projects some weakness in the

Eatontown, Belmar, and Spring Lake sections of their service area.

System Improvements

NJNG projects that some minimal system improvements may be needed in the Red Bank, Fairhaven, and Rumson areas for the 10 Year Plan. By the end of the 20 Year Plan period, however, substantial system improvements will be required in the Tinton Falls, Eatontown, Oceanport, Belmar, and Spring Lake sections.

Currently, NJNG performs system improvements as a part of their standard maintenance procedures to support existing and new customers.

Costs

Based on current tariff and standard operating procedures, NJNG plans to provide new gas main services to serve the proposed redevelopment under a Firm Rate free of charge, as long as the cost to serve equals or is less than ten times the margin. In other words, per the current procedures, NJNG would forgo ten years' margin, not making any money on a gas main extension until year eleven.

The work associated with the potential system improvements is not typically charged to a customer, rather it is absorbed by the rate base. In the case of the proposed redevelopment, this would be the norm. For example, the Franklin line (transmission main that serves the Fort Monmouth area) is currently being replaced and this cost is

covered in the transportation charges that all customers pay. Hence, such an improvement substantially increases the amount of gas that can flow to support the proposed Reuse Areas as well as any other projects in the area.

Comments/Suggestions

NJNG requires a detailed Final Reuse Plan in order to further refine its gas distribution system model, which in turn would enable NJNG to project itemized distribution improvements and related costs. Based on the initial forecasts, NJNG deems adequate the potential to handle the projected redevelopment per the 10 Year Plan, and costs associated with the 20 Year projected redevelopment need to be investigated further as they are more likely to impact the development process.

Electric Utility

Electricity is currently supplied to Fort Monmouth by Jersey Central Power & Light (JCP&L). The anticipated electric demand associated with the projected redevelopment is approximately 30,000 Kilowatts (KW) for the 10 Year Plan and 14,000 KW for the 20 Year Plan periods, for a total demand of approximately 44,000 KW. Approximately 77% of the estimated gross electric demand for the total build-out is required for Office/R&D and Residential components of the Reuse Plan.

Adequacy of Existing System

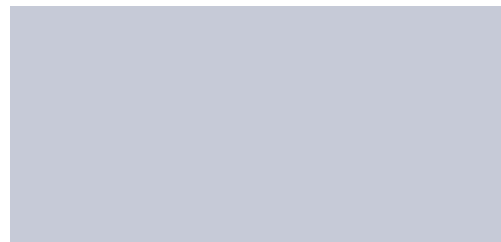
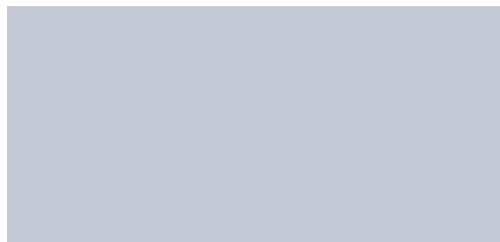
Annual consumption of electricity by Fort Monmouth is currently approximately 20,000 KW. Approximately 90 Uninterruptible Power

Supply (UPS) systems and 51 emergency generators are located in various buildings throughout the facility. The electricity is distributed through a series of transformers located throughout the Fort area, and there is concern about the feasibility of the existing system to handle the projected demands.

System Improvements

Upon review of the projected demands, JCP&L reported that, typically, customer-owned facilities do not meet JCP&L standards and are not reused by JCP&L. Further, JCP&L indicated that additional capacity, if required, would be determined when the Final Reuse Plan and specific site plans and loading impacts are developed and submitted for review. Area requirements are dynamic and time-sensitive, so available capacity, service proposals, and associated costs could be affected by the timing of applications and installations. Capacity is not reserved. Depending upon the magnitude of new loads, coupled with regional load requirements, significant infrastructure improvements may be required outside of the Reuse Area. These improvements may require existing transmission circuits to be rebuilt, upgraded, or replaced.

The full impact of the development on JCP&L, and the need for improvements, would be determined by an Initial Load Study (ILS), which requires a well-defined redevelopment proposal and timeline, including detailed locations of proposed loads. JCP&L indicated that new substations would be required



within the Reuse Areas; however, these could be on existing substation sites. Easements or conveyance of property would also be required.

Costs

JCP&L provided the following cost information and assumptions:

• Primary/Secondary Distribution (6 – 12.5kV Overhead Feeders)	\$5,400,000
• Transmission (Relocation of existing Transmission, Rebuild existing line)	\$2,100,000
• Substation (2 Substations – high side 34.5kV)	\$4,700,000
Subtotal	\$12,200,000
Tax Gross up (23.97%)	\$ 3,000,000
Total	\$15,200,000

NOTE:

1. Cost estimates are not based upon a planning study. Costs are 2008 dollars.

2. The municipalities of Oceanport, Eatontown, and Tinton Falls may require by ordinance that electric distribution be done underground. Costs associated would require detailed study at later stages of implementation.

Assumptions:

1. All JCP&L facilities are overhead, except for transformers larger than 300kVA.
2. All three phase underground commercial services are installed and owned by the company/customer requesting service.
3. Overhead line extensions are along existing roads.
4. Distribution costs were developed utilizing a per foot cost estimate that reflected the existing system denoted in the base maps that were provided. It needs to be noted, however,

the actual build-out of the system may be significantly different.

5. Smart Growth designations would be granted for the area, thus line extension costs to the developer/customer would be refundable, predicated on meeting revenue requirements.
6. JCP&L facilities are not in a designated wetland area, which would require permitting and additional engineering costs.
7. The rough distribution design has capacity to serve approximately 42 MW of load.
8. The existing transmission, presently, can support 20 MW of load. Any increase beyond the 20 MW would require a full planning study that incorporates the review of the Fort Monmouth load projection, in conjunction with the loading impacts from surrounding communities and the County.

This is a detailed study that requires a non-refundable fee.

9. The new JCP&L substations would require an acre of property. If bulk (115kV or 230kV) transmission is required to support the redevelopment, the substation footprint is a minimum of 2 acres, and the associated costs are substantially greater than noted above.

10. There are no single customers with loads exceeding 2,500kVA. Customers exceeding 2,500kVA may be required to accept transmission service and provide their own transformation and regulation.

Comments/Suggestions

JCP&L requires a detailed Final Reuse Plan in order to further refine its electrical distribution system needs, and provide reliable conclusions on its ability to meet projected demands and at what cost. JCP&L has also been requested to provide costs for an underground distribution system within the Fort property.

Water Utility

New Jersey American Water (NJAW) currently provides service to and throughout the Fort Monmouth facilities. The anticipated water demand associated with the projected development is approximately 1,000,000 gallons per day (gpd) for the 10 Year Plan and 670,000 gpd for the 20 Year Plan periods, for a total demand of approximately 1,670,000 gpd. Approximately 75 % of the estimated gross water demand for the total build-out is required for Office/R&D and Residential components of the development.

Adequacy of Existing System

The Main Post and Charles Wood Area have had some water quality problems throughout the years, primarily due to the system's age. Presently, the system is presumed to be in fairly reliable condition, with adequate quality; however, it may be preferable for a developer, or NJAW, to install a new water distribution system rather than replacing and/or repairing the existing one. In fact, NJAW has indicated that a majority of the

water system piping has reached its useful life, and the proposed development would require installation of new water mains, sized to meet demand. NJAW does currently have several large diameter water mains adjacent to the Fort property that may be able to adequately service the property; however, NJAW makes no guarantee that the allocation required would be available at the time of application/development.

System Improvements

NJAW has indicated that the development Plan extends into a time frame where water allocation would potentially be a problem unless several long-term projects are completed. However, NJAW has not provided any further detail, plans, or reports on potential improvements.

Costs

NJAW currently anticipates that all on-site piping would have to be replaced to meet the demands and/or layout of the proposed development. These costs would be paid for by the developer, with the potential for eligibility for refund depending on then-current Smart Growth development programs. NJAW has not provided any estimates for the potential improvements.

Comments/Suggestions

The maintenance and repair of the existing water distribution system would be complex and costly. It may be advantageous to utilize the existing storage tanks located in the Reuse Area. Potential use of any aquifer to supplement water service would be subject to the approval of the New Jersey Department of Environmental Protection.

Additional follow-up with NJAW's Developer Services Department would be required. They have indicated that a formal application, including at least a concept design of the on-site system, would be required for NJAW to initiate its Developer Services Service Extension review process.

Wastewater

Wastewater from Fort Monmouth currently flows to Two Rivers Water Reclamation Authority (TRWRA) wastewater lift/metering stations, and is then pumped to the TRWRA's wastewater treatment plant located in Monmouth Beach on the Shrewsbury River. Currently, TRWRA is under a self-imposed ban on new sewer connections for an anticipated two year period as of July 2007.

The anticipated wastewater output associated with the projected development is approximately 1,000,000 (gpd) per the 10 Year Plan and 670,000 gpd per the 20 Year Plan periods, with a total output of approximately 1,670,000 gpd. Approximately 75 % of the estimated gross wastewater output from the total build-out would result from the Office/R&D and Residential components of the development. Considering the addition of infiltration/inflow, the gross quantity of wastewater to be treated is estimated at 1,750,000 gpd.

Adequacy of Existing System

For the year 2007, the total metered flow discharged from both the Main Post and Charles Wood Areas was 142 million gallons, although Fort Monmouth was charged for 204 million gallons due to the required minimum charges. This current arrangement resulted in Fort Monmouth being charged for 62 million gallons of wastewater discharge above its actual usage.

The TRWRA's treatment plant located on the Shrewsbury River is permitted to treat 13.83 mgd on average per month. The constraint in the system, however, is the TRWRA's main wastewater pump station. From March to May of 2007, it was observed that the pump station was operating above its capacity, and it was this overloading of the pump station that resulted in the sewer connection ban.

In consultation with FMERPA, the TRWRA has indicated that a more detailed analysis of the existing on-site wastewater piping system is necessary to ascertain the condition of the system, the severity of the infiltration/inflow, and the feasibility of repair versus

replacement of the piping. To this end, FMERPA has assembled a subcommittee of the Infrastructure Advisory Committee, with representatives from each of the three towns, the TRWRA, and the Garrison office of Fort Monmouth. This subcommittee has been charged with developing a Request for Proposals (RFP) for engineering services to perform an in-depth assessment of the existing wastewater system piping. The portions of the system to be assessed and the methods of testing are still being evaluated. It is anticipated that the engineering services would be scheduled for the spring of 2009. FMERPA has secured federal funds to undertake these services.

System Improvements

It can be inferred from the above projected demand estimates and the capacity of the TRWRA treatment plant that the treatment plant itself could adequately handle the additional wastewater flows projected by the Reuse Plans. The existing pump station, however, would have to be replaced to match the capacity of the treatment plant. The TRWRA recently completed a \$45 million upgrade of the treatment plant; hence, it is anticipated that funding the replacement of the existing pump station is a major concern for the TRWRA.

The results of the detailed analysis of the existing on-site wastewater system would also serve to determine recommendations regarding the extent, magnitude, and cost of repair and/or replacement of the existing system.

Costs

The TRWRA stated that the existing pump station cannot be expanded and would have to be replaced to provide the additional capacity. The TRWRA has selected a new location on the site of the TRWRA treatment plant. The TRWRA estimates the cost to construct the new pump station between \$25 and \$35 million dollars.

Comments/Suggestions

The existing TRWRA treatment plant is adequate to handle the future wastewater

needs of the proposed redevelopment of Fort Monmouth. The constraint lies in the inadequacy of the existing pump station to pump the current wastewater flows to the treatment plant, much less the additional demands of future development. Based on the construction schedule of the proposed redevelopment, it would appear that there is adequate time for the TRWRA to construct a new pump station. Discussions between the TRWRA and FMERPA should proceed.

Telephone

Verizon did not provide any details on their ability to handle the demands of the redevelopment of Fort Monmouth; however, they did state that all the costs associated with any upgrades to the existing systems required and installation of new infrastructure would be at the expense of the developer. Verizon further stated that they would require more detailed concept redevelopment Plans before they could proceed with a feasibility analysis and cost breakdown of their distribution systems, as well as a "letter of intent" for payment of all of their costs to perform the analysis. Through FMERPA, assistance has been solicited from a representative of the New Jersey Board of Public Utilities (NJBPU) to seek a greater level of cooperation from Verizon on the condition of the existing telephone system, the potential for system improvements, and costs for meeting the proposed development demands on the Fort property.