Quality Growth Through Partnerships
The Camden Partnership, Inc.

SECTION XII
ADEQUACY OF RESOURCES
(Water, Sewage, Electricity, etc.)

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INTRODUCTION
The purpose of this document is to provide information on the current and future status and need for the resources described herein to support Camden County residential and business needs as well as any emerging requirements from the Naval Submarine Base Kings Bay (NSBKB). In the regard, the information described herein is referred to as "community" and "community resources." It is clear that resource availability and adequacy is important for many reasons including the following:

- Influence or need for additional resources in support of mission expansion at NSBKB
- Signals the continued financial prosperity and potential for the community
- Ensures that the community has the where-with-all to deliver on necessary infrastructure projects
- Infers that military family dependents will have education, employment and recreational opportunities

The geographical scope of this section encompasses all cities within Camden County, the unincorporated areas of the county as well as appropriate aspects of NSBKB. The focus with respect to community resources is primarily on infrastructure elements such as water, waste management, and sources of power. The availability of these resources is necessary to facilitate continued community growth of NSBKB missions and the continued expansion of the surrounding communities.

DISCUSSION TOPICS INCLUDE:
- Availability of water
- Electrical power and related power resources
- Waste treatment capability
- Solid waste collection
- Landfills

AVAILABILITY OF WATER
The Camden community has availability and access to sufficient sources of water based on currently permitted daily and maximum draw limits. Table 1 summarizes the current allotments and average usage in the county including NSBKB:

COMMUNITY WATER USE PROFILE
Kingsland is currently permitted to draw 2.5 million gallons per day (mgd) annual average from four (4) wells that access the Floridian Aquifer. They have an additional 20% leeway for seasonal peak periods. The city has pumped, on average, 1.65 mgd over the last three years and has not experienced any appreciable increase during that period. That implies

usage of about 64% of permitted draw. In addition the city has three (3) water storage tanks with a capacity of 1.750 million gallons.

	Unincorporated Areas	NSBKB	Kingsland	St. Marys	Woodbine	Aggregate
Usage(mgd)	N/A	1.0	1.6	2.5	.083	5.183 (mgd)
Capacity(mgd)	N/A	2.9	2.5	3.0	.325	8.725 (mgd)
Usage %	N/A	34%	64%	83%	26%	59%
Storage(mg)	NA	2.650	1.750	.750	.350	5.500 (mg)

COMMUNITY WATER RESOURCES
Table 1

St. Marys is currently permitted to draw 3.0 million gallons per day annual average. They have an additional 20% leeway for seasonal peak periods. The city has pumped, on average, 2.5 mgd on a yearly average over the last three years and has not experienced any appreciable increase during that period. That implies usage of about 80% of permitted draw. In addition the city has two water storage tanks with a capacity of .750 million gallons. There is currently a proposed new water storage facility that would hold .5 million gallons.

The City has hired JJ&G engineering firm to write a new water and sewer master plan. The plan, once approved by the City Council would be submitted to EPD by December 2004. The City has also approved $283,000.00 to correct identified wastewater lift station telemetry projects and standby power to lift station projects.

Woodbine is currently permitted to draw from the aquifer .325 million gallons of water per day on a monthly average and currently is averaging just under .100 mgd, imply a usage of 25% of capacity. The City has two water storage facilities with a capacity of .350 million gallons.

NSBKB is currently permitted to draw 2.9 million gallons per day annual average. The Base has pumped, on average, 1.0 million gallons per day annual average. These averages imply a usage of about 35% of permitted draw. In addition the base has aerial and in ground water storage tanks with a capacity of 2.65 million gallons. There are no plans to request an increase in permitted water draw

ELECTRICAL POWER AND RELATED RESOURCES
The primary suppliers of electrical power are the Georgia Power Company and the Okefenoke Rural Electric Cooperative. In addition, NSBKB has a large capacity for power generation.

Georgia Power Company (a Southern Company) can serve any business requirements that might conceivably locate in Camden County, whether on the base or in the surrounding community. The power system is built to serve the NSBKB and the community at the 230,000 volt level and can be served from power generated in both Florida and Georgia. The system has redundancy built in to insure a very reliable source is available at all times. When NSBKB was built in the early 1980s time frame the electrical system in this part of the

state was upgraded to insure that any future growth would be accommodated. This resource capability has been enhanced since then to maintain that goal. The community is served from various substation locations and has capacity available to add to them in order to serve growth no matter where it occurs in the county and the balance of their assigned territory.

Okefenoke Rural Electric Cooperative, headquartered in Nahunta provides electric power to some areas of Camden County as well as to seven (7) other surrounding counties. It delivers power from Georgia generating plants through a transmission line network. Rates are approved by the Rural Utilities Service (RUS) and are on file with the Georgia Public Service Commission.

NSBKB receives its power from two sources or capabilities. The first and primary supplier is the Georgia Power Company. NSBKB and GA. Power have a strong operating relationship and a unique pricing arrangement known as "real-time pricing". The origin of this arrangement is that the NSBKB has internal capability to generate power. The Base can normally generate its own power, albeit at a higher price than they can routinely buy it "on the market". Because of their market pricing arrangement, using half hour increments that GA. Power offers at times, it is in the NSBKB best interest to generate their own power. In fact during those peak periods the base does sell its excess to Georgia Power. In practice, NSBKB generates and sells the excess during the daylight hours of the warmer months. This results in sizeable savings to the NSBKB. NSBKB can generate 7-10 MW of power above its own average demand of 28 MW. It is not unusual for the base to receive savings of up to $15,000 per day. This is a highly favorable arrangement for the base since the generators are designed to operate continuously. NSBKB not only saves a substantial amount of money but also helps Georgia Power meet its peak demands. Clearly, a unique and profitable arrangement for NSBKB Power and the local community.

The Atlanta Gas Light Company provides the infrastructure for the distribution of natural gas. Several years ago Georgia deregulated the natural gas industry and today the consumer has the option of purchasing its gas from a variety of providers however the distribution capability is only provided by one organization. It should be noted that the SUBASE Kings Bay also is served by this company with the major customers being the Central Thermal Plant and a large part of Military Family Housing as well.

WASTE TREATMENT CAPABILITY

The **City of Kingsland** is currently permitted to process 2.2 million gallons per day (mgd) of influent through the Waste Water Treatment Plant located on South Grove Blvd. Over the recent past the city has processed approximately 1.5 mgd, a utilization rate of 68%. The City has been working with their consulting engineer (Carter & Sloope of Macon, GA) for the last year and a half developing and refining a strategy to meet the waste water treatment requirements for the 2010 to 2020 time frame. The short term strategy (2005-2010) is looking at operational improvements at the current plant: adding .5 mgd to capacity, developing an equalization facility, rehabilitating the bar screen and a variety of other items. The early draft document for the long term strategy includes building a new waste water treatment plant east of I-95 in the high growth corridor from Exit 7 south to Exit 1.

Since the high growth corridor is common to both the City of Kingsland and St. Marys, and certainly would benefit NSBKB, they are exploring ways of working with the City of St. Marys in the expansion and joint utilization of their new plant at Scrubby Bluff. This would seem to be a viable solution to both cities longer term needs.

Kingsland has received favorable press recently for a new approach to processing output from its waste treatment facility. They have been using a method of storing and "drying" their output in a "Geo Tube". The end result is a much easier to move sludge as well as the favorable effect of using less space in the County landfill.

St Marys processes 1.2 million gallons of sewage per day on an annual average basis, while they are currently permitted for 1.5 million gallons per day for sewage. This results in a daily utilization of 80%. Because of the higher utilization rate, the city is bringing online an additional 42% capacity increase in mid 2004. The opening of a new plant accounts for an increase of .5 million gallons in capacity.

Woodbine has its own waste treatment facility that serves the city, as well as some output from the county landfill. The system was designed to process 368,000 gallons of waste per day. At this time, usage is approximately 100,000 gallons of waste per day or a 27% utilization factor.

NSBKB has three different sources for treating and processing waste water. The first and second sources are essentially similar treatment plants differentiated by their location on base. The "Upper Plant" has a capacity of 1.5 MGD and usage is approximately 50%. The second or "Lower Plant" has capacity of > .5MGD and usage is about 30% of full capacity. The third treatment facility is for "Industrial Waste" and encompasses dry-dock wash down and batch waste for toxic metals, acids, and caustics

SOLID WASTE COLLECTION

The solid waste collection service in Camden County is accomplished in a variety of ways. For residents outside a city the service is out-sourced to a private company - BWI. This includes curbside pickup as well as re-cycling. Within the city limits of Kingsland and St. Marys the service is provided by the city. It should be noted that the SUBASE Kings Bay collection is done by a different private company. The waste collected in all cases is transported to the Camden County landfill for appropriate processing.

LANDFILLS

Contemporary Solid Waste Management Programs are far more technically and financially complex than the "dumps" of the past. These programs place ever increasing demands on the technical and financial competence of the management. The development of five (5), ten (10) and twenty (20) year plans are necessary to provide a basis of general direction to such programs and to satisfy the requirements of State and Federal regulatory agencies.

The goal of the disposal element is to ensure that solid waste treatment and disposal facilities serving local governments and regions meet regulatory requirements. These requirements must support and facilitate effective solid waste handling programs today and

in the future for a ten-year period, thereby maintaining and enhancing the quality of life for residents within the area in terms of reasonable economies of scale.

Background- Camden County landfill

In 1990, Camden County evaluated property for the development of a solid waste disposal facility for the County. Based upon the results of this evaluation, the County acquired 200 acres for the S.R. 110 Municipal Solid Waste Landfill. This land fill was approved by the State of Georgia Environmental Protection Division (EPD) on May 3, 1990. A study conducted by the Kings Bay Impact Coordinating Committee projected the need for forty (40) acres of land to meet the County needs for sanitary landfill disposal for the next twenty (20) years.

On September 28, 1992, Camden County opened the first phase of a "state of the art" Subtitle ID landfill. The new landfill was located on Highway 110 in the southwestern portion of the county. The first phase was constructed as a twelve (12) acre -fully lined footprint and includes a leach ate collection system. The capacity of this phase is 423,400 cubic yards or 211,700 tons.

The initial plan of development and use was to build the total capacity of 1,600,000 tons in five phases. The projected life of the facility was thirty (30) years. In 1995, The Board of County Commissioners decided to commercialize the 110 Landfill and compete for a controlled but sustained level of inbound non-hazardous waste from inside and outside of the County. Presently, non-hazardous waste generated within Camden County is not exported to an outside disposal facility. The largest industrial generator, Bayer Crop Sciences has their own landfill. The county accepts a controlled quantity of waste generated outside of the county for disposal at its landfills.

Industrial, Construction and Demolition Landfill

Camden County recently purchased an industrial landfill from Durango Paper Company. The new facility complies with all state and federal guidelines for non-hazardous industrial waste and construction/demolition waste. Due to its proximity to the County's S. R. 110 Landfill, along with the anticipated future growth in Camden County the state permitted the facility in 2003 allowing the facility to accept out of county industrial and construction and demolition waste.

Private industrial Landfills

There is only one private landfill in Camden County, owned and operated by Bayer Crop Science in Woodbine. The Bayer Crop Science industrial landfill is fully lined and has a leach ate collection system. The facility opened on January 19, 1988. The company uses the landfill to dispose of waste paper, gypsum -from manufacturing, fiber drums, and other industrial waste. The company estimates that it generates 1,000 pounds of waste per day for disposal in this facility, or about 130 tons per year. Table 2 summarizes the landfill capacity by community.

RESOURCE	CAMDEN CTY	NSBKB	KINGSLAND	ST. MARYS	WOODBINE	AGGREGATE
Water Supply	N/A					
Capacity/usage(mgd)		2.9 / 1.0	2.5 / 1.6	3.0 / 2.5	.325 / .038	8.725 / 5.138
						(approx 59% of authorized)
Storage capacity(mg)		2.65	1.75	0.75	0.35	5.500 mg
Waste Water Treatment	N/A					
Industrial WW plant	N/A	yes	no	no	no	
Residential WW plant	N/A	yes	yes	yes	yes	
Capacity/usage(mgd)		2.0 / .9	2.2 / 1.5	1.5 / 1.2	.368 / .100	6.1 / 3.7
Expansion plans	none		future planning	.5mgd @6/2004	none	(approx 61% utilized)
Electrical Power	GA Power	GA Power	GA Power	GA Power	GA Power	
Capacity/usage	N/A	70mw/31mw	N/A	N/A	N/A	(no apparent limit)
Generators	N/A	36mw dsl gen	N/A	N/A	N/A	
Thermal plants	N/A	Atlanta Gas Lt.	N/A	N/A	N/A	
Chilled Water		7500tons/5000				
Hot Water		125mbtu/40				
Solid waste collection	Out sourced BWI	MDI	City	City	County/BWI	
Capacity/usage	none	none	City service	11,000 T/year process	none	
Expansion plans			none	Analysis in process		
Landfills		none	none	none	none	
RT. 110						
Utilization	30%					
Remaining Life	14 years					
C&D Industrial						
Utilization	12%					
Remaining life	50 years					
Private industrial landfill	one(1) Bayer					
	130 tons/year					

LANDFILL CAPACITY SUMMARY

Table 2