



## Relicensing Briefing Card

### ISSUE: OPERATIONS

**Brief:** Georgia Power currently operates the Morgan Falls Project in a modified-run-of-river-mode for the primary purposes of power generation, domestic water supply and wastewater assimilation for metropolitan Atlanta.

"Run-of-river" means that water is not stored and project outflows are equal to project inflows. Morgan Falls operates in a modified run-of-river mode, which utilizes the small amount of storage available to re-regulate variable inflows into a more steady flow release pattern.

- ◆ The limitation on available water supply in the Chattahoochee River is a result of operation of Buford Dam primarily for peak power. Morgan Falls re-regulates its project inflows to insure that a 750-cubic feet per second (cfs) minimum flow rate target is achieved downstream in addition to ensuring there is enough water available for drinking water withdrawals downstream of the project.
- ◆ Morgan Falls has 16.8 MW total plant capacity, however, only an average of 10.2 MW is available for peaking operations. The remaining generating capacity is utilized to re-regulate flows for water supply and quality. Due to the small amount of reservoir storage available, Morgan Falls is only capable of re-regulating project inflows on an hourly to daily basis.
- ◆ See Water Supply and Reservoir Storage briefing cards for more detailed information on how the limited reservoir storage is used for water supply and wastewater assimilation.
- ◆ See Generating Capacity briefing card for more detailed power generation data.

**Bottom Line Take Away:** Georgia Power has proposed to continue operating Morgan Falls in a modified run-of-river mode for water supply, water quality, and power generation.

**Issue Contact:** Fred Cox and Courtenay Riddle



## Relicensing Briefing Card

### ISSUE: VALUE OF HYDROPOWER

**Brief:** Hydropower is a clean, efficient, renewable source of electric generation. As the country's fourth largest source of electric power, it adds a low-cost supply to our fuel mix while reducing reliance on foreign energy sources.

- ◆ Hydropower provides a low-cost energy source. With no fuels to transport or burn, hydro is cost competitive with other power resources. Its operating and maintenance costs are low and predictable.
- ◆ Hydropower is 100 percent renewable. In fact, hydro accounts for 75 percent of the nation's total renewable electricity generation.
- ◆ Hydropower is a clean, emission-free resource that generates no wastes for disposal. Use of hydro power to produce electricity avoids the release of carbon emissions, sulfur dioxides and nitrogen oxides from fossil-fuel generation.
- ◆ As a totally domestic energy source, hydropower supports U.S. energy security by increasing our energy independence. Greater use of hydropower means less reliance on foreign energy sources.
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- ◆ Hydropower provides non-power benefits, too, including flood control, grid stability, water supply, recreation and irrigation. Hydropower projects create habitat for fish and wildlife, hatcheries for endangered species, bird habitats and viewing areas. This is the only fuel source capable of being switched on and off quickly.
- ◆ We have the ability to add up to 21,000 MW of new capacity without building a single new dam. Only 3 percent of the nation's dams are currently used to generate electricity. That's enough power to supply eight cities the size of Seattle or 6.9 million homes for a year.

**Bottom Line Take Away:** Hydropower is a valuable domestic, low-cost, efficient, and environmentally friendly electric power resource for the 21st century and beyond. It is important that we preserve and expand our use to meet our country's growing electric generation needs.



Relicensing Briefing Card

ISSUE: COMPARISON OF BUFORD DAM TO MORGAN FALLS DAM

**Brief:** This briefing card compares basic information to emphasize that Buford Dam operations influence the Chattahoochee river system much more than Morgan Falls operations.

	BUFORD DAM	MORGAN FALLS
Usable Storage, Ac-Ft	1,089,400	2,250
Usable Storage + Unusable Storage, Ac-Ft	1,957,000	2,450
Average Annual Flow, CFS	2,124 (Yr 1956-98)	2,317 (1976-01)
Time to Drain Usable Storage at Avg. Annual Flow	259 days	0.49 days
Time Water Remains in Reservoir at Avg. Annual Flow (Residence Time)	465 days	0.53 days
Lake Area at Normal Full Pond, Acres	38,542	673
Shoreline Length at Normal Full Pond, Miles	540	23.5
Power Capacity, MW	108.9	16.8
River Mile of Dam	348.3	312.6

**Bottom Line Take Away:** Buford Dam provides 484 times the usable storage that Morgan Falls provides and its operations dictate Chattahoochee River flow through the Morgan Falls project area.

**Issue Contact:** Fred Cox and Courtenay Riddle



## Relicensing Briefing Card

### ISSUE: GENERATING CAPACITY

**Brief:** The maximum generating capacity of the project is 16.8 MW. The dependable capacity of the project during the critical summertime flow season is 10.2 MW.

- ◆ There are seven, horizontal Francis-type turbines with nameplate ratings of 2.4 MW each, for a total maximum plant generating capacity of 16.8 MW.
- ◆ Maximum hydraulic capacities of the individual turbine units are as follows:

Units 1, 5, and 6:	776 cubic feet per second (cfs)
Unit 2:	646 cfs
Unit 3:	978 cfs
Unit 4:	929 cfs
Unit 7:	622 cfs
Total:	5,503 cfs
- ◆ Average Annual Generation for 1961 to 2002 was 56,562 megawatt-hours (MWH), which is enough power to supply 4,400 homes per year.
- ◆ Dependable capacity is the average capacity for 8 hours each day for 5 consecutive days using average summer inflows while passing minimum flows at all other times. Of the total 16.8 MW plant capacity, only an average of 10.2 MW is available for peaking operations. Most of the storage, which would allow a higher peaking capacity, is utilized to re-regulate flows for water supply and quality.
- ◆ The generating capacity provided by Morgan Falls is emissions free. Replacement of generating capacity at Morgan Falls may require an increase in fossil-fueled generating capacity which is not emissions free.
- ◆ Hydropower generation is cheaper than fossil-fueled generation (natural gas or coal) or nuclear generation. Using this cheaper source in our power production mix helps insure lower utility bills for consumers.

**Bottom Line Take Away:** Although small, Morgan Falls provides enough power for 4,400 homes in the Atlanta area, and if not available would be replaced by more expensive, emissions-producing fossil-fueled generation.

**Issue Contact:** Fred Cox and Courtenay Riddle



## Relicensing Briefing Card

### ISSUE: RECREATION

**Brief:** There are several recreation facilities providing access to the Morgan Falls Project. The river and the riparian environment comprise a major outdoor recreation attraction in the Atlanta metropolitan area. As such, the recreational demand is very high.

- ◆ Three land units of the Chattahoochee River National Recreation Area abut portions of the impoundment reservoir (Island Ford, Vickery Creek, and Gold Branch). They provide opportunities for walking, hiking, running, wildlife viewing, fishing, boat launching, and picnicking within the Project.
- ◆ The Chattahoochee Nature Center (CNC) is a non-profit environmental education facility. The facility partners with local schools and has 127 acres.
- ◆ The Chattahoochee River Park (81 acres) is equipped with a playground, picnic shelters, picnic table, grills, benches, restrooms, canoe and raft rentals, boat ramp, walking trails, and fishing areas. It is operated by The City of Roswell.
- ◆ Don White Memorial Park (1.5 acres) provides a parking area, picnic tables, benches, and two fishing docks. It is operated by The City of Roswell.
- ◆ Riverside Park provides playgrounds, an open field, picnic tables, benches, and restrooms. It is operated by The City of Roswell.
- ◆ Georgia Power provides a portage and take-out ramp around the dam. The Atlanta Rowing Club has a facility on the river which provides access and equipment.
- ◆ The Sandy Springs Conservancy plans to develop 60 acres of land along the river into a community park including trails with a bridge crossing the river. The City of Roswell plans to develop a 7-mile linear park along the river. It would include multi-use trails and other amenities.

**Bottom Line Take Away:** There are many recreational opportunities that lay within the Morgan Falls Project boundary provided by entities such as the National Park Service, the City of Roswell, Fulton County, and Georgia Power Company. Many of these amenities and opportunities for recreation would not exist without the presence of the Morgan Falls Project.

**Issue Contact:** Scott Hendricks and Larry Wall



## Relicensing Briefing Card

### ISSUE: HISTORIC AND CULTURAL RESOURCES

**Brief:** The Morgan Falls Project area was used for thousands of years before European settlers arrived at the Chattahoochee River. Cultural resources found there include both historic and pre-historic objects and activities that may help us understand our past.

#### ARCHAEOLOGICAL RESOURCES

- ◆ An archeological survey of a portion of the current reservoir revealed significant use of the river dating to pre-historic time. Relicensing reports will reference and summarize this study and other available information.
- ◆ The Hightower Trail that bisects the Morgan Falls reservoir is thought to have been recognized by the different tribes as the unofficial boundary between the Creek nation to the south and the Cherokee nation to the north. The trail was used as a connector between two major trading routes.

#### HISTORIC HYDRO AND ENGINEERING RESOURCES

- ◆ The Morgan Falls Project was constructed between 1903 and 1904, and is the oldest continuously operating generating plant owned by Georgia Power. The project and its reservoir have been an integral part of the North Fulton County landscape for 100 years.
- ◆ The powerhouse and dam are expected to be eligible for listing on the National Register of Historic Places and are already listed as one of 76 Historic Engineering Sites in Georgia for the Historic American Engineering Record.
- ◆ The Morgan Falls powerhouse began producing electricity on October 10, 1904. Most of its 10.5-MW output was used to operate the Atlanta street car system.
- ◆ The dam was the first construction job in the South on which a power-operated rock crusher and concrete mixer constituted part of the equipment.

**Bottom Line Take Away:** The project area is rich in historic and archeological data. Substantial background information is available in reports and historical archives. This material will be developed through the licensing process and made available to the interested parties.

**Issue Contact:** Scott Hendricks and Larry Wall



## Relicensing Briefing Card

### ISSUE: LAND MANAGEMENT

**Brief:** Georgia Power possesses minimal amounts of fee simple land ownership that provides direct control for land management efforts. The project boundary is located around the reservoir upstream of the dam at the 868 foot elevation.

- ◆ Georgia Power owns fee simple rights to a small tract of land around the dam and powerhouse and under the reservoir for a distance of 800 feet upstream from the dam.
- ◆ Other property around the reservoir inside the project boundary is managed through the possession of flood rights by Georgia Power under the terms and conditions specified in the project license.
- ◆ Local, state and federal land management agencies in the project area prescribe uses and manage land use around the project.
- ◆ Land is managed primarily for recreational uses.
- ◆ Aesthetic resources and environmental protection are major resource goals.

**Bottom Line Take Away:** Georgia Power exercises land management over minimal areas around the Morgan Falls Project. Existing project boundary is only 2 vertical feet above the normal pool elevation of the reservoir. Aesthetic and environmental protection around the project is provided by other local governmental entities having land management responsibilities.

**Issue Contact:** Larry Wall



## Relicensing Briefing Card

### ISSUE: TRIBAL CONCERNS

**Brief:** The Morgan Falls project area was a crossroads for Indian activity during historic and prehistoric periods. Current FERC regulations require that tribes be consulted to determine if there are issues regarding their previous occupation and use of the area.

- ◆ Archeological evidence indicated that the Morgan Falls area was heavily used by early period Indians.
- ◆ Bureau of Indian Affairs was consulted to determine which tribes may have an interest in the project due to historic occupation of the project area.
- ◆ Ten tribes were identified as possibly having an interest.
- ◆ Tribes are given special deference for consultation purposes, and the FERC must consult with the tribes on a government to government basis.
- ◆ Georgia Power has been designated as FERC's non-federal representative for the purpose of consulting with the tribes.
- ◆ The treaties which ceded the Indian lands in Georgia has historically been an issue with some Creek tribes.

**Bottom Line Take Away:** Native American interests in the area is not presently known but will be established during consultation efforts.

**Issue Contact:** Larry Wall



## Relicensing Briefing Card

### ISSUE: WATER SUPPLY

**Brief:** Georgia Power operates the Morgan Falls project under an agreement with the Atlanta Regional Commission (ARC), a governmental agency acting on behalf of local water utilities. Under the agreement, Georgia Power agrees to use its best efforts to operate the Morgan Falls project to provide the minimum releases determined by ARC to be sufficient for downstream water quality and water supply.

- ◆ The Chattahoochee River supplies drinking water for over 3 million people in metropolitan Atlanta. South of Peachtree Creek, the river is also the primary receiving water for assimilating the area's treated effluent. Downstream of Morgan Falls and upstream of Peachtree Creek are two major water supply intakes (City of Atlanta and Cobb-Marietta Water Authority).
- ◆ EPD has established a 750-cubic feet per second (cfs) minimum flow rate target immediately upstream of Peachtree Creek for wastewater assimilation. Morgan Falls minimum releases must meet the 750-cfs flow target, plus the downstream water intake demands.
- ◆ Buford Dam releases vary widely on a daily basis from a normal minimum flow of 600 cfs to peaking flows of 10,000 cfs. Buford Dam controls 76% of the drainage area above Morgan Falls.
- ◆ The Buford Dam release pattern provides a sufficient volume of water to meet downstream water quality and water supply needs on a weekly basis, but the timing of the releases does not allow for meeting the 750-cfs minimum flow rate at all times during the week.
- ◆ Morgan Falls has very limited reservoir storage, which Georgia Power uses to the maximum extent to re-regulate the Buford Dam flow releases into a more steady flow pattern that allows the water needs of all downstream water users to be met.
- ◆ Georgia Power has been re-regulating Buford Dam flows for downstream users since 1960, initially through an agreement with the City of Atlanta. This agreement was replaced in 1986 by an agreement between Georgia Power and the ARC. With each revision of the agreement, Georgia Power has agreed to higher flow releases from Morgan Falls. Thus, Morgan Falls re-regulation has assumed a greater role in meeting the water needs for metro Atlanta.
- ◆ Related Briefing Cards include: Generating Capacity, Plant Operations, and Reservoir Storage.

**Bottom Line Take Away:** Georgia Power operates Morgan Falls in a manner which is beneficial to all downstream users interested in water quality and water supply and proposes to continue its current operations at Morgan Falls.

**Issue Contact:** Fred Cox and Courtenay Riddle



## Relicensing Briefing Card

### ISSUE: EXISTING STUDIES AND DATA

**Brief:** The upper Chattahoochee River basin has been extensively studied. Georgia Power believes the majority of information necessary to characterize the existing environment and evaluate the resource impacts of continued project operation already exists or is being obtained. Key sources of this information, as described in the Pre-Application Document (PAD), include but are not limited to:

- ◆ The Atlanta Regional Commission, which coordinates water management of the Chattahoochee River in metropolitan Atlanta and maintains a comprehensive database of up-to-date land use and population data for the region.
- ◆ The Metropolitan North Georgia Water Planning District, which has compiled and evaluated a vast amount of information for 16 counties in preparing long-term plans for managing watersheds, water supply, and wastewater.
- ◆ The U.S. Army Corps of Engineers, which has comprehensively evaluated long-range water planning alternatives, including the possibility of dredging Morgan Falls, instream flow, and water allocation in the Chattahoochee River.
- ◆ GDNR Wildlife Resources Division, which has inventoried and surveyed the Chattahoochee River since 1980 for the purposes of managing the trout fisheries both upstream and downstream of Morgan Falls.
- ◆ Georgia Environmental Protection Division and U.S. Geological Survey, which compile, report, and model data on water quality conditions in the Chattahoochee River both upstream and downstream of Morgan Falls.
- ◆ National Park Service, which has been conducting baseline studies of flora, fauna, and recreation within the Chattahoochee River National Recreation Area, including an ongoing instream flow study and ongoing mussel survey.

**Bottom Line Take Away:** Georgia Power has proposed to continue operating Morgan Falls in a modified run-of-river mode for water supply, water quality, and power generation.

**Issue Contact:** Fred Cox and Courtenay Riddle



## Relicensing Briefing Card

### ISSUE: RESERVOIR STORAGE

**Brief:** The current usable storage in the Morgan Falls reservoir is 2,250 acre-feet. The sedimentation which has occurred in the reservoir has approached or reached equilibrium.

- ◆ Substantial sediment deposition has occurred in the Morgan Falls impoundment over its 100-year operational history.
- ◆ In the late 1950s, the City of Atlanta and Georgia Power entered into a contract to raise the dam by 6 feet to increase storage for greater re-regulation capacity. This re-regulation capacity would allow increased peaking generation and the ability to re-regulate the daily inflows from the newly constructed Buford Dam for City of Atlanta water quality needs.
- ◆ Historical usable storage in the reservoir was estimated to be 3,150 ac-ft in 1960, 2,450 ac-ft in 1976, and 2,250 ac-ft in 2001. These data indicate that sedimentation in the reservoir has approached or reached equilibrium..
- ◆ The storage at Morgan Falls has an insignificant effect on the total weekly flow that passes a point in the river immediately upstream of Peachtree Creek, and therefore has no effect on the total volume of water that must be released on a weekly basis at Buford Dam to meet Atlanta water supply and water quality needs.
- ◆ The storage at Morgan Falls only affects how much of the peaking releases at Buford Dam must be shifted from weekday peak power periods to weekend off-peak power periods.
- ◆ Georgia Power believes the cost of dredging the Morgan Falls impoundment to provide additional re-regulation of flows for water supply would be prohibitively costly and re-regulating flows at Buford Dam would be a more cost effective alternative.

**Bottom Line Take Away:** Georgia Power does not believe it will be cost effective to dredge for water supply management needs.

**Related Briefing Cards include:** Generating Capacity, Plant Operations, and Water Supply.

**Issue Contact:** Fred Cox and Courtenay Riddle



## Relicensing Briefing Card

### ISSUE: WATER QUALITY

**Brief:** The Georgia Environmental Protection Division (GEPD) (2003a) classifies the water use of the Chattahoochee River in the 48-mile segment from Buford Dam to Peachtree Creek as Drinking Water, Recreation, and Fishing. The reach is also classified as Secondary Trout Waters, indicating that it is capable of supporting stocked trout throughout the year (and it does).

- ◆ The 36-mile segment of the Chattahoochee River upstream of Morgan Falls dam, including the Morgan Falls' Bull Sluice, fully supports its designated uses.
- ◆ The 12-mile downstream segment between Morgan Falls dam and Peachtree Creek partially supports its designated uses. The reduced support is due to elevated densities of fecal coliform bacteria and PCBs detected in fish tissue, both attributed to stormwater runoff from highly urbanized areas.
- ◆ Fecal coliform concentrations in the Chattahoochee River generally increase downstream through metropolitan Atlanta.
- ◆ Fecal coliform densities are higher in the tributaries to the downstream reach, which drain densely urbanized areas, than in the mainstem river.
- ◆ Urban sources of fecal coliform include: wildlife, most notably ducks and geese, which often occur on the water in great numbers; domestic pets, such as dogs; leaks and overflows from sanitary sewer systems; livestock, such as horses; and leachate from operating and closed landfills.
- ◆ GEPD completed a fecal coliform evaluation for 79 stream segments in the Chattahoochee River basin and has developed a strategy for addressing urban sources of fecal coliform. This was referred to as a Total Maximum Daily Load (TMDL) evaluation. It concluded that stormwater runoff was the major source.
- ◆ PCBs have been banned in the U.S. and the levels are declining.

**Bottom Line Take Away:** The Morgan Falls Project waters are meeting their designated uses. Elevated concentrations of fecal coliform in the river downstream of the project originate in urban stormwater runoff from tributaries and are not attributable to project operations. GEPD has developed a plan for addressing urban sources of fecal coliform.

**Issue Contact:** Tom Broadwell



## Relicensing Briefing Card

### ISSUE: PROJECT LOCATION

**Brief:** The Morgan Falls Hydro Project occupies about 7 river miles on the Chattahoochee River situated in the northern part of greater metropolitan Atlanta about 16 miles North of the State Capitol in downtown Atlanta.

- ◆ The Project dam has a Dunwoody mailing address and Project lands are located in Fulton and Cobb Counties near the cities of Roswell and Sandy Springs.
- ◆ Morgan Falls dam is located at river mile 312.6, about 36 river miles downstream of Lake Lanier's Buford Dam and 12 miles upstream from Peachtree Creek in the City of Atlanta.
- ◆ The Project impoundment, Bull Sluice, is crossed by Roswell Road and Georgia Highway 400 and lies within the 48 river mile National Park Service Chattahoochee River National Recreation Area.
- ◆ Morgan Falls dam is located at Latitude 33.58.00 and Longitude 84.23.00.

**Bottom Line Take Away:** The Morgan Falls Hydro Project is located just north of downtown Atlanta in Fulton and Cobb Counties occupying about seven river miles on the Chattahoochee River.

**Issue Contact:** George Martin



## Relicensing Briefing Card

### ISSUE: FISHERIES

**Brief:** The 48-mile stretch of the Chattahoochee River below Buford Dam supports a popular urban trout fishery within the Chattahoochee River National Recreation Area. The stretch is classified as Secondary Trout Waters, indicating that it is capable of supporting stocked trout throughout the year.

- ◆ Historically, the Chattahoochee River was a warm-water stream. The development of Buford Dam in 1958 turned it into a cold-water stream. Buford Dam releases cold water from the depths of Lake Lanier.
- ◆ The Georgia Department of Natural Resources (GDNR) manages the 36-mile segment above Morgan Falls Dam as a put-and-take trout fishery, stocking it heavily with adult-size brown and rainbow trout.
- ◆ GDNR manages the 12-mile segment below Morgan Falls as a put-grow-and-take trout fishery, stocking it mostly with juvenile brown and rainbow trout. Large trout are also stocked part of the year for catch-and-release fishing.
- ◆ Stormwater runoff from highly urbanized tributary watersheds appears to elevate summer temperatures below Morgan Falls to levels detrimental to trout with increasing frequency. Concerned, GDNR is studying the situation.
- ◆ GDNR, in coordination with the National Park Service (NPS), has diversified fishery management objectives below Morgan Falls to include restoration of native warm-water fisheries. Shoal bass, a species endemic to the basin, was stocked for the first time in spring 2003.
- ◆ A limited striped bass fishery has also developed below Morgan Falls. Striped bass move upstream into the stretch from West Point Lake, where they were introduced as stocked fish in the 1990s. Reproduction is intermittent at best.
- ◆ Fishing in the Morgan Falls impoundment is mostly for warm-water species, including bluegill, redear sunfish, and largemouth bass.

**Bottom Line Take Away:** Morgan Falls Project waters support diverse cold-water and warm-water fishery management objectives.

**Issue Contact:** Michael Abney