Vulcan

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To Beth Boland	Date 2-7 # of pages ▶
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He Did Receive Pg. 4 of 4

Atlanta Regional Commission
200 Northcreek, Suite 300
3715 Northside Parkway
Atlanta, Georgia 30327-2809

Harry West
Director

January 10, 1997

Honorable Hollis Lathem, Chairman
Cherokee County Commission
90 North Street, Suite 310
Canton, GA. 30114

RE: Development of Regional Impact--Vulcan Materials Asphalt Plants

Dear Chairman Lathem:

I am writing to let you know that the ARC staff has completed the Development of Regional Impact (DRI) review of the asphalt plants proposed by Vulcan Materials on the site previously approved for a quarry. Our finding is that the proposed development is in the best interest of the State.

We realize that there are further requirements such as an air quality permit amendment and stormwater permit which would be required from the State for such facility. Also, we want to state that our finding **does not imply** that the proposed plants are in the best interest of the local jurisdiction. There may be local considerations for which the County determines not to approve the plants.

Enclosed is a copy of our detailed report. Also enclosed are copies of comments received from Georgia Dept. of Transportation and Georgia Environmental Protection Division.

Please feel free to call me if you have any questions concerning our review or need further information.

Sincerely,

Harry West
Director

Enclosure

c Mr. Ken Patton, Dir. of Planning
Mr. Jimmy Fleming, Vulcan Materials Co.
Mr. Wayne Shackelford, Commissioner, GDOT
Mr. Harold Reheis, Director, GEPD

Facility: Vulcan Materials Company Asphalt Plant
Preliminary Report: December 16, 1996
Final Report: January 10, 1997

DEVELOPMENTS OF REGIONAL IMPACT

REVIEW REPORT

GENERAL

According to information on the review form or comments received from potentially affected governments:

Is the proposed project consistent with the host-local government's comprehensive plan? If not, identify inconsistencies.

No. The site is zoned agricultural and projected as agricultural/forestry on the Cherokee County Future Land Use Plan. While a special use permit (SUP) was issued in 1987 or 1988 for a quarry within a 300-acre site encompassing the 14 acres currently proposed for two asphalt plants, no development has occurred on the site. The SUP was conditioned on Vulcan's not leasing the site for an asphalt plant. The Court later invalidated that condition. It is ARC's understanding that Vulcan Materials now intends to activate the quarry operation as well as develop the asphalt plants. According to Vulcan's representative, they already have all the required permits for the quarry and are seeking rezoning for the plants only.

Is the proposed project consistent with any potentially affected local government's comprehensive plan? If not, identify inconsistencies.

No inconsistencies were identified in the review process. However, the site is very near the Forsyth/Cherokee County boundary.

Will the proposed project impact the implementation of any local government's short-term work program? If so, how?

No impacts were identified.

Will the proposed project generate population and/or employment increases in the Region? If yes, what would be the major infrastructure and facilities improvements needed to support the increase?

Information submitted with the review projects 20 employees.

What other major development projects are planned in the vicinity of the proposed project?

ARC has not reviewed any proposed major developments in the vicinity of this site.

Will the proposed project displace housing units or community facilities? If yes, identify and give number of units, facilities, etc.

Not directly. However, if an asphalt plant is developed at this site, it may cause some nearby housing to be converted to other uses. The general vicinity of the proposed development is sparsely developed, but there are a few residences nearby.

Will the development cause a loss in jobs? If yes, how many.

No.

LOCATION

Where is the proposed project located within the host-local government's boundaries?

The proposed plant site is in east Cherokee County about on the Forsyth/Cherokee boundary. It is south of Hightower/Matt Road (Hwy. 369) and east of Lower Creighton Road.
84°15'30"/34°17'

Will the proposed project be located close to the host-local government's boundary with another local government? If yes, identify the other local government.

Yes. Forsyth County.

Will the proposed project be located close to land uses in other jurisdictions that would benefit or be negatively impacted by the project? Identify those land uses which would benefit and those which would be negatively affected and describe impacts.

The Forsyth County Future Land Use Plan projects residential development in the area around the proposed plant site. Although new asphalt plant equipment is designed to meet air quality standards for stationary sources, nearby residential areas may be negatively impacted by the plant's proximity. The plant will emit air pollutants and the prevailing winds also may carry dust and/or odor toward residential areas. The general vicinity of the project is sparsely developed, but there are a few residences nearby. Vulcan's Forsyth County property is proposed as a buffer with no quarry, asphalt plant, or entrance on that part of the site.

ECONOMY OF THE REGION

According to information on the review form or comments received from potentially affected governments:

What new taxes will be generated by the proposed project?

$36,736 according to information submitted with the review.

How many short-term jobs will the development generate in the Region?

None.

Is the regional work force sufficient to fill the demand created by the proposed project?

N/A

In what ways could the proposed development have a positive or negative impact on existing industry or business in the Region?

Unknown. However, Vulcan's representative indicated that the proposed plants may not be in addition to those already in existence but may only be relocated from other sites.

NATURAL RESOURCES

Will the proposed project be located in or near wetlands, groundwater recharge area, water supply watershed, protected river corridor or other environmentally sensitive area of the Region? If yes, identify those areas.

In what ways could the proposed project create impacts that would damage or help to preserve the resource?

The proposed project site is located in the Lake Allatoona Water Supply Watershed. Under DNR watershed protection criteria, the Lake Allatoona Water Supply Watershed is a large water supply watershed. The proposed site does not include any perennial flowing streams, though is in close proximity to Hurricane Creek which flows into Settingdown Creek, which flows into the Etowah River. None of the DNR criteria for large water supply watersheds apply to this proposed development.

Water quality in the Lake Allatoona Water Supply Watershed can be impacted without storm water pollution controls. The amount of pollutants that will be produced after construction of the proposed Vulcan Materials Asphalt Plant was estimated by ARC. These estimates are based on some simplifying assumptions for typical pollutant loading factors (lbs/ac/year). The loading factors are based on the results of regional storm water monitoring data from the Atlanta region. The following table summarizes the results of the analysis.

Estimated Pounds of Pollutants Per Year

Land Coverage	Total Phosphorus	Total Nitrogen	TSS	BOD	Zinc	Lead
Heavy Industrial (14.0ac)	20.3	269.36	11,130	1,792	23.24	2.94

If the development is approved, Cherokee County should take steps to mitigate potential impacts. The interim Regional Storm Water Quality Management Guidelines, adopted by the Atlanta Region, provide suggestions for addressing storm water quality. These guidelines offer technical guidance for the control of post-development pollution in storm water (find attached).

The proposed plant site of 14 acres does not contain wetlands, but the encompassing 300-acre site does. Site design features such as incorporating wetlands into landscaping should be considered. This approach and others are listed in the Interim Regional Storm Water Quality Management Guidelines.

HISTORIC RESOURCES

Will the proposed project be located near a national register site? If yes, identify site.

There are no historic or archeological sites on the 14 acres proposed for the asphalt plant according to information submitted with the review.

In what ways could the proposed project create impacts that would damage the resource?

N/A

In what ways could the proposed project have a positive influence on efforts to preserve or promote the historic resource?

N/A

INFRASTRUCTURE
Transportation

How much traffic (both average daily and peak a.m./p.m.) will be generated by the proposed project?

According to Vulcan Materials' representative, the plant would produce 2,000-2,500 tons of asphalt on a typical operating day and a maximum of 4,000-5,000 tons if there were an unusual situation where they operated 24 hours a day. However, there are days when the plant could not operate at all due to temperature, etc., or when there were no jobs.

Operations between 2,000 and 5,000 tons would result in an estimated 118-294 truckloads. Operation of the asphalt plant and the quarry on the same property would cut the number of off-site trips almost in half since most of the raw materials for the operation would not have to be brought in by truck.

How much traffic (both average daily and peak am/pm) will be generated by the proposed project?

Land Use	Weekday	AM Peak Hour Enter	AM Peak Hour Exit	PM Peak Hour Enter	PM Peak Hour Exit
292 Acre Quarry	**380**	**32**	**5**	**5**	**32**
Asphalt Plant	118	8	1	1	8
Diverted Truck Trips	-68	-3	-1	-1	-3
Net Trips for Asphalt Plant	**50**	**5**	**0**	**0**	**5**
Total Trips for Quarry and Asphalt Plant	**430**	**37**	**5**	**5**	**37**

The employee trip generation figures for the quarry and asphalt plant were provided by the Traffic Impact Analysis performed by the applicant based on anticipated operations of the quarry and asphalt plant. According to the applicant, the asphalt plant would use raw materials from the adjacent quarry, which would reduce the number of truck trips entering and exiting the site. The reduced number of necessary truck trips is reflected in the trip generation figures above. The 50 net trips for the asphalt plant would have very little impact on air quality.

What are the existing traffic patterns and volumes on the local, county, state and interstate roads that serve the site?

The following volumes are based on 1995 GDOT coverage counts from area facilities that will likely provide the primary routes for traveling to the proposed asphalt plant. 2010 volumes for these facilities were obtained from GDOT estimates.

Facility	1995 Number of Lanes	1995 Volume	1995 V/C Ratio	2010 Number of Lanes	Forecast 2010 Volume	2010 V/C Ratio
Matt Hwy. from Cherokee County to Nicholson Rd.	2	5,570	.19	2	9,790	.33
SR 20 from Cherokee County to SR 371/Post Rd.	2	10,000	.34	2	24,350	.83
Hightower/Matt Hwy. from Yellow Creek Rd. to Forsyth County	2	3,860	.13	2	9,190	.31
Hightower/Matt Hwy. from SR 372/ Ball Ground Rd. to Yellow Creek Rd.	2	5,350	.18	2	11,670	.40
SR 372/Ball Ground Rd. from Hightower Hwy. to SR 20	2	3,820	.15	2	8,450	.33
SR 20 from SR 372/Ball Ground Rd. to Holbrook Campground Rd.	2	10,140	.34	2	24,090	.82
SR 20 from Holbrook Campground Rd. to Forsyth County	2	8,880	.30	2	20,620	.70

What transportation improvements are under construction or planned for the Region that would affect or be affected by the proposed project? What is the status of those improvements (long or short range or other)?

ARC's adopted Atlanta Regional Transportation Improvement Program FY 1996 - FY 2001 (TIP) does not include any proposed transportation projects in the vicinity of this development. The Georgia Department of Transportation's current Statewide Transportation Improvement Program contains no transportation improvements for facilities in the vicinity to the Vulcan Materials Asphalt Plant development.

Will the proposed project be located in a rapid transit station area? If yes, how will the proposed project enhance or be enhanced by the rapid transit system?

No.

Is the site served by transit? If so, describe type and level of service.

No.

Are there plans to provide or expand transit service in the vicinity of the proposed project?

No.

What transportation demand management strategies does the developer propose (carpool, flex-time, transit subsidy, etc.)?

None.

What is the cumulative generation of this and other DRIs or major developments? Is the transportation system (existing and planned) capable of accommodating these trips?

There have not been any other DRIs reviewed in the vicinity of the Vulcan Materials Asphalt Plant development.

In order to ensure the integrity of the transportation system, Cherokee County officials should work with ARC and the Georgia Department of Transportation to identify roadways that will ultimately become congested so that appropriate transportation projects can be formulated and programmed. County officials should also carefully consider the coordination of new growth with their ability to provide adequate transportation infrastructure to prevent congestion and poor operating conditions not only in the immediate project area but also on a county-wide basis.

INFRASTRUCTURE
Wastewater and Sewage

How much wastewater and sewage will be generated by the proposed project?

Based on 20 employees, ARC estimates a minimum of 500 gallons per day.

Which facility will treat wastewater from the project?

Sewer is not available at the site.

What is the current permitted capacity and average annual flow to this facility?

N/A

What other major developments will be served by the plant serving this project?

N/A

INFRASTRUCTURE
Water Supply and Treatment

How much water will the proposed project demand?

Approximately 575 gallons per day.

How will the proposed project's demand for water impact the water supply or treatment facilities of the jurisdiction providing the service?

Minimal impact.

INFRASTRUCTURE
Solid Waste

How much solid waste will be generated by the project? Where will this waste be disposed?

Approximately 11 tons.

Other than adding to a serious regional solid waste disposal problem, will the project create any unusual waste handling or disposal problems?

No.

Are there any provisions for recycling this project's solid waste.

None stated. However, dirt removed from the quarry site is proposed to be used to create berms around the property as a buffer from Lower Creighton Road.

INFRASTRUCTURE
Other facilities

According to information gained in the review process, will there be any unusual intergovernmental impacts on:

- Levels of governmental service?
- Administrative facilities?
- Schools?
- Libraries or cultural facilities?
- Fire, police, or EMS?
- Other government facilities?
- Other community services/resources (day care, health care, low income, non-English speaking, elderly, etc.)?

Addition of an asphalt plant in this area of the county would require training for nearby fire, police and emergency medical personnel to deal with any emergencies from this heavy industrial manufacturing operation.

HOUSING

Will the proposed projeet create a demand for additional housing?

No.

Will the proposed project provide housing opportunities close to existing employment centers?

No.

Is there housing accessible to the project in all price ranges demanded?

Yes.

Is it likely or unlikely that potential employees of the proposed project be able to find affordable* housing?

Likely.

* Defined as 30 percent of the income of a family making 80 percent of the median income of the Region. 1996 median family income of $52,100 for Atlanta MSA.

DEVELOPMENTS OF REGIONAL IMPACT
Comments from Affected Parties Form

Project I.D: _____
(From Request for Comments Form)

Name of Commenting Organization: GA EPD / Land Protection Branch

Address: 4244 International Pkwy. Ste 104
Atlanta, GA 30354

Contact Person: Jeff Cown Telephone Number: (404) 362-2696

Do you believe your jurisdiction will be affected by the proposed development? _____Yes _____No

Please describe the effects (positive and/or negative) the proposed project could have on your jurisdiction:

The facility has an amendment request in to allow for a location for ancillary activities, which could include an asphalt plant. The facility would also need an Air Quality Permit amendment and a general storm permit for the proposed asphalt facility.

(Attach Additional Pages if Necessary)

Form Completed By: Jeff Cown Title: Unit Coordinator

Signature: Jeffrey W. Cown Date: 12/20/96

RETURN TO: ATLANTA REGIONAL COMMISSION
3715 Northside Parkway
200 Northcreek, Suite 300
Atlanta, Ga. 30327
ATTENTION: REVIEW OFFICE

FAX NO. 404-364-2599

DCA/OCP 10/7/91

DEVELOPMENTS OF REGIONAL IMPACT
Comments from Affected Parties Form

Project I.D.:_____
(From Request for Comments Form)

Name of Commenting Organization: Georgia Department of Transportation
Address: Georgia Department of Transportation
No. 2 Capitol Square
Atlanta, Georgia 30334
Contact Person: George Boulineau Telephone Number: 404-656-0610

Do you believe your jurisdiction will be affected by the proposed development X Yes_____No
Please describe the effects (positive and/or negative) the proposed project could have on your jurisdiction:

" VULCAN MATERIALS COMPANY ASPHALT PLANT - CHEROKEE COUNTY "

This development will have a major impact to State Route 369 and other access roads. We are concerned about the safety, existing pavement structure and shorten life of the roadways. The review made no mention of any improvement to the system, and approval should be deferred until such time a plan for improvements is defined to mitigate the problem.

(Attach Additional Pages if Necessary)

Form Completed By: Donald W. Mills Title: USPE 3

Signature: Donald W. Mills Date: 12-30-96

DCA/OCP 10/7/91

RETURN TO: ATLANTA REGIONAL COMMISSION
3715 Northside Parkway
200 Northcreek, Suit 300
Atlanta, Ga. 30327
ATTENTION: REVIEW OFFICE

FAX NO. 404-364-2599

May 22, 1995

ARC Storm Water Management Task Force
INTERIM STORM WATER QUALITY MANAGEMENT GUIDELINES

Introduction

The following are suggested interim guidelines for local governments that want to protect and improve water quality by minimizing the potential harmful impacts generated by pollution in storm water runoff from urban land uses. These guidelines are focused on practices to minimize long-term impacts of developed areas on water quality. In general, the objectives of these interim guidelines include minimizing imperviousness, providing areas to capture overland flow of storm water and allow it to infiltrate into the soil, treating other runoff that leaves a developed site and designing sites to protect water quality.

Although many pollutants in storm water runoff must be considered in storm water design, one of the primary pollutants used as a design parameter is total suspended solids, or TSS. The following table is provided as information on post-development characteristics of average annual TSS loads (pounds per acre per year) associated with various land uses and development types. The source of this information is based on storm water samples collected for the Atlanta Region Storm Water Characterization Study and is supplemented with national data for the non-urban land uses.

Land Use	TSS (lbs/ac/yr.)
Forest/Open	235
Agriculture/Pasture/Cropland	327
Large Lot Single Family (>2ac)	355
Low Density S.F. (1-2ac)	447
Low-Medium Density S.F. (0.5-1.0ac)	639
Medium Density S.F. (0.25-0.5ac)	801
Townhouse/Apartment	605
Commercial	983
Office/Light Industrial	708
Heavy Industrial	795

The Atlanta Region Storm Water Management Task Force is working to develop a detailed manual of Best Management Practices (BMPs) for reducing TSS and other pollutants in storm water runoff from urban areas. The Task Force generated the following protection measures as interim recommendations to be used until the BMP manual is completed. This guidance document includes a variety of recommended practices which are presented below as options for developers and engineers to consider in designing controls for storm water runoff quality from developed areas. These practices are options and may be used alone or in combination - selection of appropriate controls will be site-specific.

Practice 1: Minimize Impervious Surface

This option may be most appropriately applied to larger sites. Minimizing the amount of impervious surface on a site allows for more infiltration of storm water into the ground, thereby reducing both pollutants and the runoff from the site. This approach to managing storm water runoff does not require extensive maintenance. Therefore, when possible, limiting impervious surface on a site should be encouraged. This basically involves leaving part of a site undeveloped to achieve lower percentages of impervious surface. It is recommended that impervious surface on a site be limited to the impervious surface equivalent to medium density, single family residential (approximately 1/4 - 1/2 acre average lot sizes) development. This type of development typically has 25% or less impervious surface. If a developer restricts impervious surface to these levels, construction of structural controls for water quality would probably not be necessary. Any development more dense than medium density single family residential should employ structural controls (see Practice 2 below).

The development site should be planned so that open space areas act as a pollutant filter and buffer for storm water flow from the site. Environmentally sensitive portions of a development site such as river and stream corridors and wetlands should be targeted for the undeveloped, "open space" or "greenbelt" areas. Local governments can encourage the concept of "cluster development," which allows higher levels of impervious (over 25%, for example) on portions of a site if sensitive areas are left undeveloped and maintained as undisturbed open space and they function to reduce the pollutant load in storm water runoff. Provisions should be made so that any open space areas are maintained in their natural state. If any development in these areas occurs in the future, the site would have to be re-reviewed, for storm water quality purposes, by the local government.

As a general guideline to local governments, several studies indicate that watershed-wide impervious surface amounts should not exceed 10-25% of the total land area in a water supply watershed.

Practice 2: Structural Controls

If the developer selects storm water management options which involve structural controls, it is important for local governments to require that the developer submit a Storm Water Management Plan as a key component of the Plan of Development. The storm water plan should include the location, construction and design details and all engineering calculations for all storm water quality control measures.

Wet Ponds

This practice recommends that structural controls be designed to control water quality in addition to the quantity controls typically required by local governments. At this time, the preferred approach to achieve water quality goals is construction of wet ponds. However, wet ponds may be more appropriately suited for larger developments or a group of developments. To develop an appropriate wet pond, additional storage provided above the permanent pool, combined with an appropriately designed outlet control structure, could give the necessary control for both storm water quality and quantity. Other structural control methods such as constructed wetlands could be explored as long as they were shown to achieve the desired pollutant removal.

As an example, the following design guidelines typically achieve a TSS reduction of 65%.

- Keep pond shape simple for good circulation.
- Inlets should be widely spaced from the outlets to avoid short-circuiting.
- Length should be three to five times the width.
- At least three, and preferably six to seven feet of permanent pool depth is needed for the majority of the pond.
- An underwater shelf (approximately 6"-12" deep and at least 3' wide) around the perimeter of the pond should be planted with rooted aquatic plant species.
- The pond should be designed with a sediment forebay which is easily accessible for maintenance and periodic cleaning. The forebay should be designed so as to minimize the resuspension of previously deposited sediments. The forebay storage capacity should be about 10% of the permanent pool storage to accommodate sediment accumulations over a 10- to 20-year period.
- The pond surface area should correspond to approximately 1% of the total drainage area. The minimum drainage area is 20-25 acres; the maximum is 100-300 acres depending on the level of imperviousness in the drainage basin.
- For water quality benefits, the pond should provide storage for runoff depths as listed below. The pond volume above the normal pool required for water quality may be calculated by multiplying the runoff depth by the contributing drainage area.

Land Use	Inches of Runoff	
	Sandy Soil	Clayey Soil
Freeways	0.35	0.40
Totally Paved Area	1.10	1.10
Industrial	0.85	0.90
Commercial	0.75	0.85
Schools	0.20	0.40
Low Density Res.	0.10	0.30
Medium Density Res.	0.15	0.35
High Density Res.	0.20	0.40
Developed Parks	0.50	0.60

- Storage for flood control should be provided above the level of storage provided for water quality benefits.
- The ratio of outlet flow rate to pond surface area for each stage value needs to be at the most 0.002 cfs/ft^2 for the water quality portion.

Extended Detention with Wetland Plantings

For smaller sites, with a drainage area less than 20-25 acres, it may be appropriate for the developer to use the option of a detention facility system established to provide water quality improvement through much longer detention times in contact with wetland plantings. Research has shown that storm water impounding areas which capture the first flush of runoff in a wetland setting for several days, in concert with an outlet control system for extending the detention times of larger storms, demonstrate measurable improvements in water quality. As an example, the following general design guidelines typically achieve a TSS reduction of between 45 and 80%.

If this type of system is desired, the pond area should follow the 1% of drainage basin rule presented above. The first flush capture should be at least 1/2 inch runoff from all impervious surfaces. The bottom of the pond should be cultivated with plantings indigenous to local wetlands. The first flush should be held so as to prevent its complete release in less than a 48 hour period. Each pond should provide the forebay sediment storage area already presented, as well as layout to prevent short circuit. Water velocity through the pond should be kept as low as possible with a maximum goal of 1/2 fps. Where possible, the outlet control system should be located adjacent to a public street to allow maximum access.

Maintenance of Structural Controls

If structural storm water controls are not maintained properly, they will provide no benefit. The developer's Storm Water Management Plan should require the developer to submit a detailed, long-term schedule for inspection and maintenance of any structural storm water facilities included. This schedule should be consistent with the maintenance policy of the local government and should describe all maintenance and inspection requirements and persons responsible for performing maintenance and inspection activities. Provisions should be made for the local government to inspect the facilities during and after construction.

Practice 3: Other Controls

Many of the following suggested controls are applicable to all developments. In general, the objectives of the following storm water runoff controls include minimizing imperviousness, providing areas to capture overland flow of storm water and allow it to infiltrate into the soil, reducing sediment flows, and avoiding directly connected impervious surface areas.

Building/Site Design

- Direct roof downspouts away from direct connection with impervious surfaces.
- Use grassed swales/vegetative filter strips whenever feasible for the drainage collection system (eliminate curb and gutter). Because of decreased storm water runoff, a reduction in pollutant loads will also be realized.
- Landscape with terraces rather than aggressive slopes.
- Encourage the use of bioengineering practices to rehabilitate unstable stream channels resulting from impacts of urbanization.
- Protect and maintain natural, undisturbed buffers adjacent to streams.
- Keep development out of wetland and floodplain areas. Encourage incorporating wetlands into landscaping, upgrading wetlands where possible.
- Design and locate buildings, roads, parking and landscaping to conform with the natural terrain and to retain natural features.
- Minimize impervious surface in river and stream corridors.

Erosion and Sediment Controls

- Leave generous buffers or natural areas between bare land areas.
- Regrass/landscape bare soil.
- Check for volume transfer and velocities of water downstream of project to protect downstream areas from increased erosion and to prevent streambank and natural area destruction.
- For controls during construction, refer to the State Erosion and Sediment Control Act and pending State construction permit.

Recommended References

- United States Environmental Protection Agency, January 1993. Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters.

- Schueler, Thomas R., Department of Environmental Programs, Metropolitan Washington Council of Governments, July 1987. Controlling Urban Runoff: A Practical Manual for Planning and Designing Urban BMPs.

- Georgia Soil & Water Conservation Commission, Metro Atlanta Association of Conservation Districts, USDA Soil Conservation Service and Georgia Environmental Protection Division, 1994. Guidelines for Streambank Restoration.

- Pitt, Dr. Robert E. Excerpts from Detention Pond Design to Control Quality and Quantity, University of Alabama, Birmingham Continuing Education Workshop. For more information, contact David Eckhoff, Director of Engineering Professional Development, (205)934-8268.

- Camp Dresser & McKee, prepared for the Atlanta Region Storm Water Task Force, Atlanta Region Storm Water Characterization Study, 1993.