



**Effingham County
Ash Roads Update
2018 Winter Storm Grayson
Jan 16, 2018**

Brief History

- Ash from Georgia Pacific was applied to dirt roads starting in 2001
- Georgia Environmental Protection Division approves the use of the ash in 2002
- Surface Treatment added as early as 2004
- 2018 Winter Storm Grayson destroys 50 miles of the existing 165 miles of Ash Roads

Georgia Department of Natural Resources

Environmental Protection Division

Solid Waste Management Program

4244 International Parkway, Suite 104, Atlanta, Georgia 30354

Lonnie C. Barrett, Commissioner

Harold C. Gillespie, Director

(404) 362-2692

February 22, 2002

Mr. David A. Rutherford
Effingham County Administrator
601 Laurel Street
P.O. Box 307
Springfield, Georgia 31329

SUBJECT: Approval to Reuse Hydrated Fluidized Bed Combustor Ash as Roadbed Material
Effingham County, Georgia

Dear Mr. Rutherford:

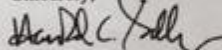
The Solid Waste Management Program has received your letter and supporting documentation dated February 19, 2002. In our opinion, the letter and supporting documentation sufficiently address the concerns outlined in our letter to you dated February 4, 2002. Therefore, the Solid Waste Management Program approves the reuse of the hydrated fluidized combustor ash from Georgia Pacific's (Fort James') Landfill at their Rincon mill as roadbed material.

Because the unhydrated ash is a caustic, hazardous material, we must reiterate that adequate quality control procedures must be used and properly documented to ensure that the ash is properly hydrated prior to loading for transport. Unhydrated ash shall not be removed from the landfill.

We understand that the Material Safety Data (MSDS) Sheets requested in our letter of February 4, 2002 are near completion and will be provided to us the week of March 1, 2002. The Solid Waste Program reserves the right to rescind this approval if the MSDS sheets have not been provided to us by March 1, 2002. We also reserve the right to rescind this approval based on our review of the MSDS sheets.

If you have any questions regarding this letter or if we may be of further service, please contact Mike Kemp at 404-362-4918.

Sincerely,



Harold C. Gillespie, P.E.

Program Manager

Solid Waste Management Program

CC: Tim Earl
Coastal District EPD
Mary Chambers, Georgia Pacific

Problems

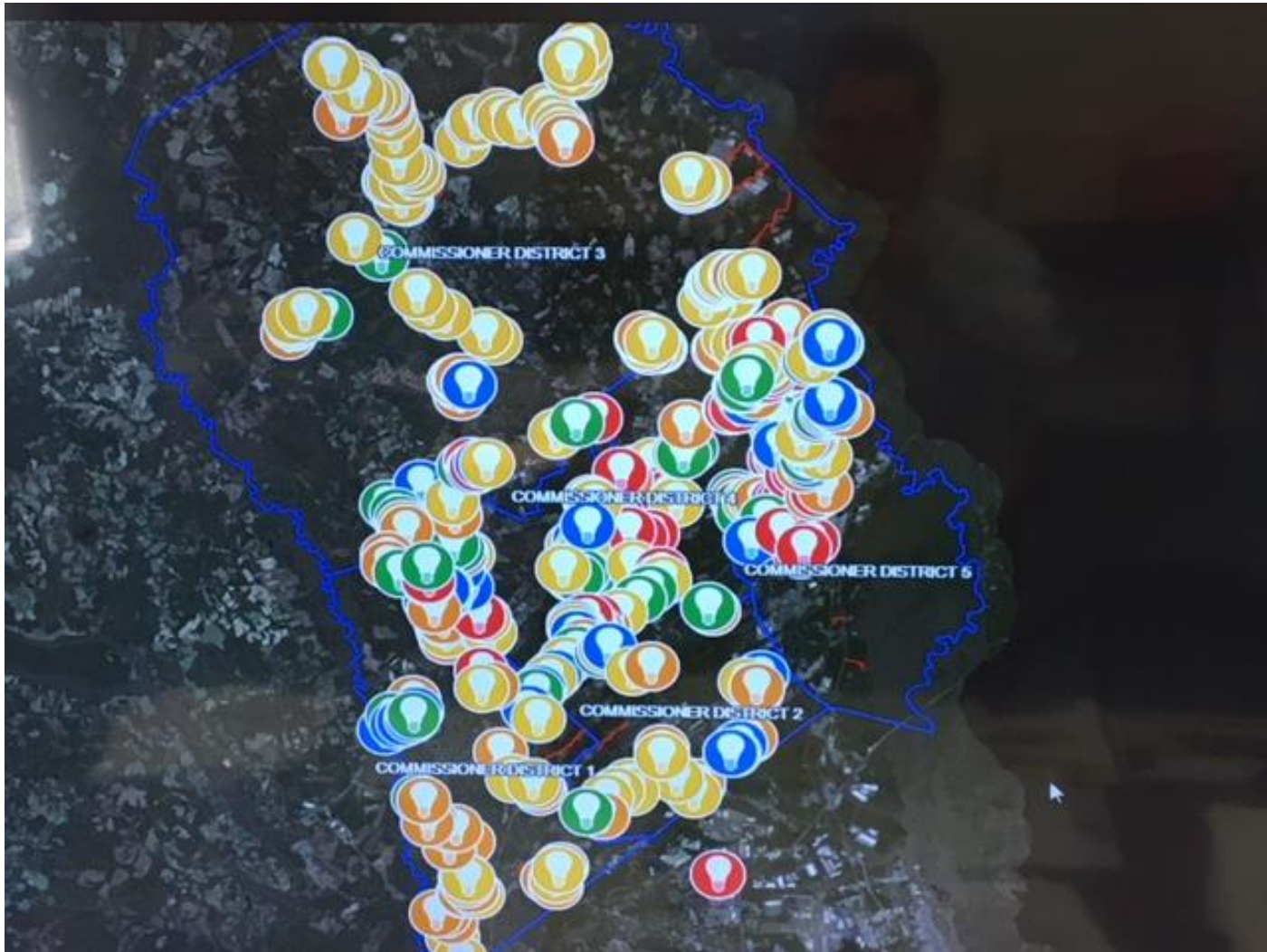
- Roadways froze and refroze during the storm and separated the base from the surface treatment causing surface to break up
- A large portion of the ash roads do not have proper ROW
- A large portion of the ash roads are missing roadway essentials such as: safety clear zones, proper drainage structures, lane widths, and design making full paving much more costly
- The ash was applied inconsistently from crew to crew in varying depths

Damage Assessment

- • District 1 - 13.12 miles
- • District 2 - 5.28 miles
- • District 3 – 10.82 miles
- • District 4 - 14.30 miles
- • District 5 – 4 miles

Total of 47.52 miles of damaged roads

GIS App Map



Action Taken to Date

- 5 crews drove every road evaluating
- GIS Collector App used to track damage
- Met with Portland Cement Association
- Met with Georgia Emergency Management Agency
- Met GDOT
- Spoke with State Delegation

Action Taken to Date

- 11 dump trucks used
- 4 graders
- 213 loads across all areas of the county
- 53 roads received sand and dirt
- 10 hours a day since last Tuesday (except Sunday)

- ALLISON ST 0.28
- APPALOOSA WAY 0.63
- BELMONT DR 0.36
- BETHANY RD 1.6
- BIRD RD 1.19
- BRIARWOOD RD 0.88
- COMBAHEE ST 0.09
- CORINTH CHURCH RD 4.11
- COUNTRY ESTATES DR 0.76
- COURTHOUSE EXT 1.17
- CREEKWOOD DR 0.96
- ELKINS CEMETERY RD 0.93
- EXLEY RD S 0.83
- FLOYD AVE 1.49
- HELMEY DR 1.34
- HOLLY RD 0.34
- HORSESHOE RD 0.53
- INDIGO RD 2.51
- LONG POND RD 1.01
- LOW GROUND RD 6.3
- LOWER FERRY RD 1.41
- MILL POND RD 2.16
- MOSS LP 0.96
- NIXON CHAPEL RD 3.3
- OLD AUGUSTA RD 1.22

- OLD DIXIE HWY S 2.28
- OLD LAKE RD 0.45
- OLD OAK RD 0.38
- PARADISE TR 0.42
- PINE ST 1.2
- PITTS RD 1.91
- POUND RD 1.88
- RED BUD RD 0.23
- RED MAPLE DR 0.19
- REDMOND RD 0.4
- REED ST 0.12
- REISER RD 0.91
- SAM SMART RD 1.31
- S LAUREL CIR 0.46
- SPRINGFIELD EGYPT RD 8.8
- TARA RD 0.32
- TIMBERGATE LN 0.53
- WALDHOUR RD 1.06
- WEBB RD 0.67
- WHITAKER RD 1.05
- WILDWOOD LN 0.52
- ZETTLER LP 0.68
- PATTERSON DR 1.89
- SHIRLEY DR 1.97
- WYLLY RD PAVED
- LONG ACRE RD PAVED

Possible Solutions

- #1 Remove and Replace the ash material and replace with a more conventional road bed material such as G.A.B. and asphalt
 - This solution would cost approx \$500k per mile to remove and another \$180k to mile replace
- #2 Full Depth Reclamation with Cement to turn the road bed material while adding conventional materials to strengthen the base and surface treat.
 - This solution would cost approx \$375k per mile to do FDR/cement and \$60k for surface treatment

Possible Solutions

- #3 Pave asphalt over the ash
 - Contracting out services: Per previous contracts we have spent approx \$180k per mile which includes leveling, shoulder work, 6" Graded Aggregated base, 1.5" Hot Mix Asphalt, and stripping.
 - Total cost for current damaged roads based on 47.52 miles is **\$8.55 Million**

Possible Solutions

- #4 Replace Chip and Seal surface treatment
 - Contracting out services: Per previous contracts we have spent approx \$49k per mile which includes leveling, shoulder work and double service treatment
 - Total cost for current damaged roads based on 47.52 miles is **\$2.32 Million**

Possible Solutions

- #5 Replace Chip and Seal surface treatment
 - Purchase Equipment
 - Do the work In-House
 - Equipment cost \$125k fixed
 - New dedicated crew \$185k fixed annual
 - Material costs \$23k per mile
 - Total cost for current damaged roads based on 47.52 miles repaired in one calendar year is **\$1.42 Million**

Comparisons

- #1 Repair and Replace \$32.3 Million
- #2 Full Depth Reclamation \$20.7 Million
- #3 Pave Asphalt over ash \$8.55 Million
- #4 Chip and Seal Contractor \$2.32 Million
- #5 Chip and Seal In-House \$1.42 Million

Recommendation

- Immediate Action – Board approve purchasing equipment to do chip and seal surface treatment, hire new dedicated staff to ash road repairs and prioritize heavily traveled roads that are in severe condition to start repairs.
 - Staff believes we can have equipment and staff in place within 2 weeks to start repairs.
 - Staff believes we can have all storm related damage repaired within 12 months. This allows for half in FY18 budget and half in FY19 budget.
 - New equipment can be used long term for better maintenance of all ash roads.

Recommended Equipment



Equipment Costs

- Used Steel Roller - \$60,000
- New Asphalt Trailer \$25,195
- Used Sweeper \$35,000 (Not confirmed)
- Dump Spreader attachment \$5,345

- **Total Approx Cost \$125,000**

Miscellaneous Recommendation

- Hire an independent lab to test material to ensure public that the material is consistent with initial data and that it is safe and free of health concerns. Three bids received to do 20 samples.
 - Whitaker Labs - \$7,175
 - GEC - \$22,000
 - BLE - \$12,900



Steve Davis, MPA
County Administrator
Effingham County Board of Commissioners
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