

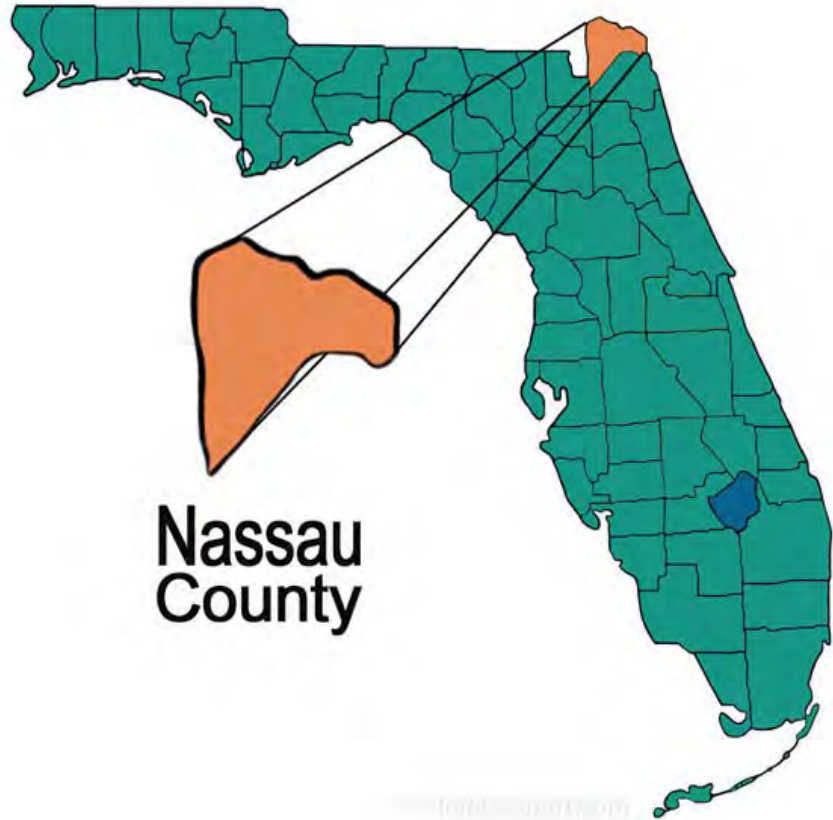


DIRT TO PAVE

NASSAU COUNTY'S CHIP SEAL PROGRAM



Nassau County Background



Population:

- Population- 108,851
- 20% Growth since 2020

Miles of Roadway:

- 687 miles of maintained roadway
- 502 paved roads (73%)
- 185 unpaved roads (27%)

Nassau County Dirt Road Program

1.

2000-2015- dirt road maintenance included grading and fill/spreading of additional aggregate. These practices were able to keep up with Demand until 2015.

2.

2015- as populations grew, County staff was task with finding alternative solutions to maintain dirt roads. Chip Seal was selected as top solution.

3.

2016- BOCC approved Chip Seal trial on 1.5-mile-long roadway, to see if Chip Seal was a viable option.

4.

2018- Chip Seal trial deemed successful- BOCC approves County Chip Seal Program. With funding for 3 miles of Chip Seal per year. Roads selected by proximity to grader route. End goal to eliminate all dirt road grading.

5.

2020- budget increased to accomplish 4 miles per year.

6.

2018-2025- County has successfully Chip Sealed 84 roads- 32.4 miles.

Chip Seal Program Construction

Permitting

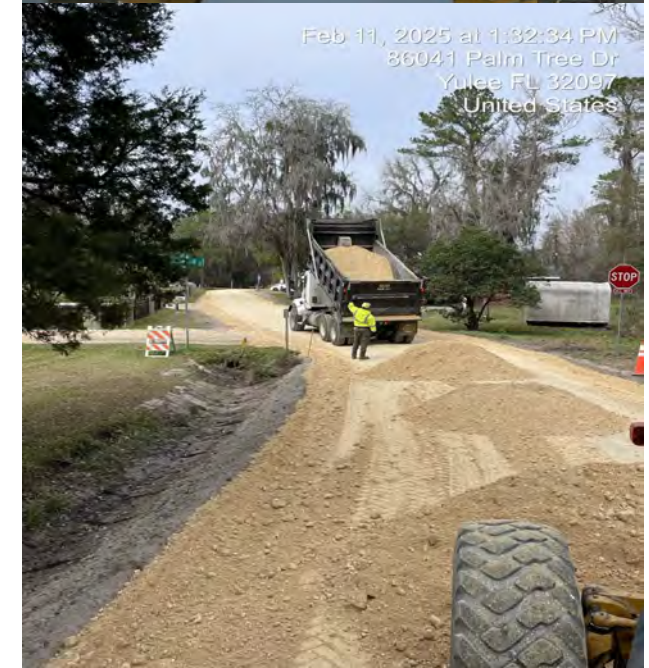
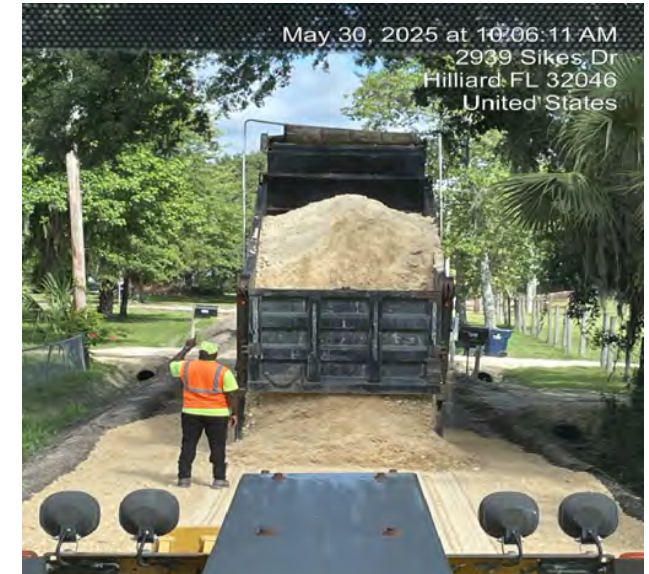
- County applies for exemption with St Johns Water Management district

Drainage

- County Staff replaces driveway culverts and clean swales ahead of base prep

Base Prep

- County Staff boxes out roadways 4-6" and installs lime rock



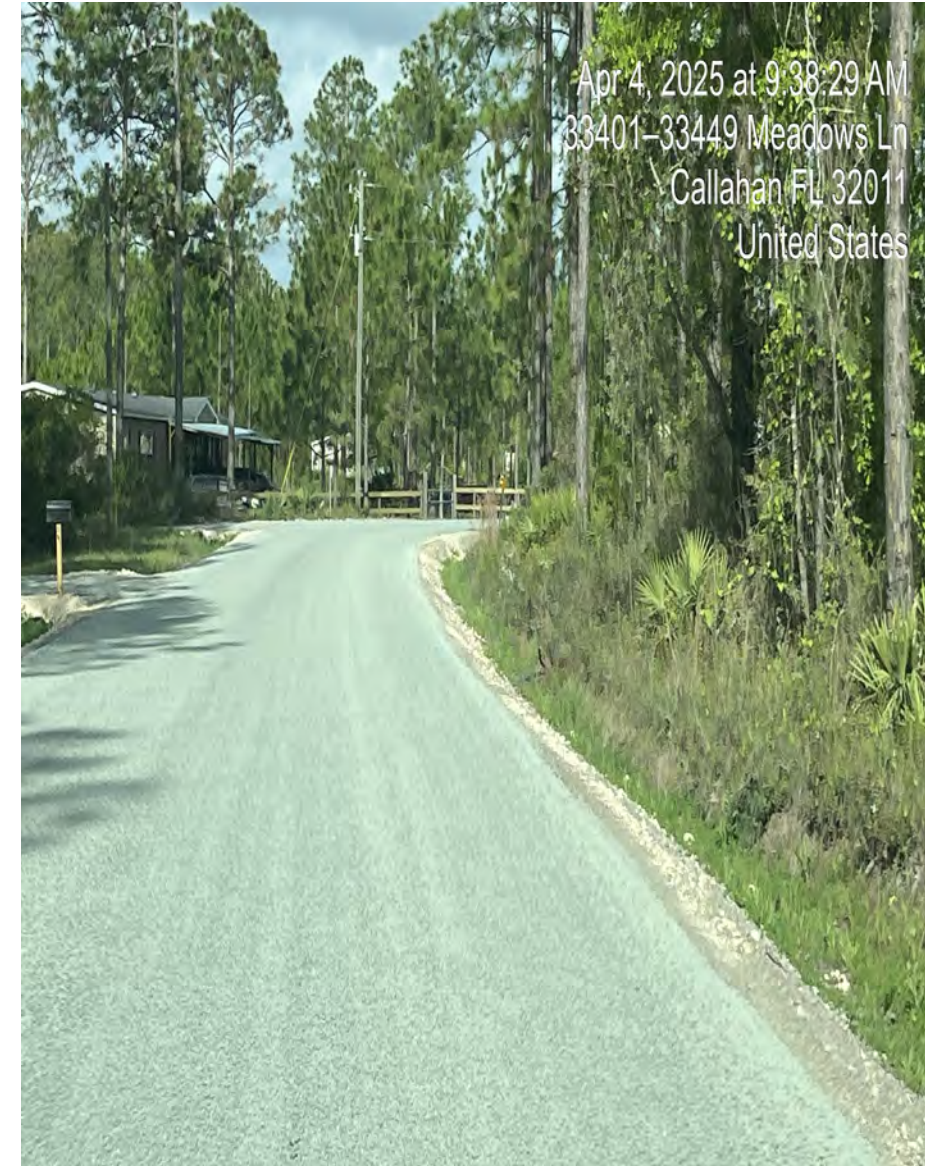
Chip Seal Program Construction

Prime/Sand

- After base is installed- County contractor to prime and sand base ahead of Chip Seal

Chip Seal

- Contractor completes Double Chip Seal and Fog Seal



Nassau County Construction Cost

- **Drainage / Base Prep-**

\$230k-\$330k per year

- **Double Chip Seal w/ Fog Seal**

\$71,577.40 per mile (\$6.10/SY)

- **2025 budget for Chip Seal Program**

\$1.45 Million

1890 CHIP SEAL !



WHAT IS CHIP SEAL??

- Chip Seal is a surface treatment consisting of a thick layer of polymer modified asphalt emulsion followed immediately by a layer of high-quality crushed granite aggregate (chips) to the sprayed emulsion. A rubber tire roller is used to firmly embed the chips into the layer of emulsion. This creates a tightly knit riding surface that will last for many years. Avg life expectancy is 10-12 years.





CHIP SEAL PROCESS DESCRIPTION

- Apply a thick layer of emulsion (CRS-2P)
- Apply a layer of high- quality granite aggregate.





CHIP SEAL PROCESS DESCRIPTION

- Rubber tire rollers embed stone into emulsion. Apply a layer of high- quality granite aggregate.
- Fog Seal applied to Chip Seal a week after installation



CHIP SEAL TYPES

- Single Chip Seal-

- Used on paved surfaces



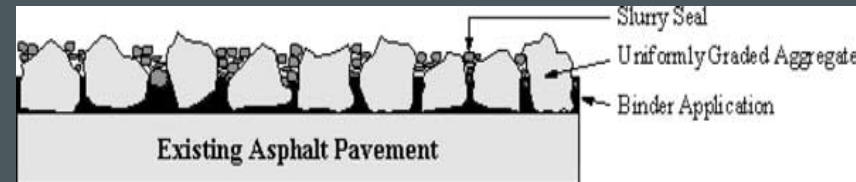
- Double Chip Seal-

- Used on unpaved roadways- most commonly used in the State of Florida for unpaved roadways.



- Cape Seal-

- Used on paved roadways requiring a smooth finished surface



- Triple Chip Seal-

- Used on unpaved roadways with heavier traffic loads

CHIP SEAL VIDEO



CHIP SEAL NEEDS A SOLID BASE



- Old Pavement, HMA
- Millings, RAP or RAM
- Lime Rock and Shell
- Mixing the Old Road & Base together
- Level with 2% to 3% slope and grade
- Chip Seal over soil cement base

Chip Seal Surface



BENEFITS OF CHIP SEAL

Cost-

A Double Chip Seal is typically 50-60% less than traditional paving techniques. At \$75-85k per mile it is one of the most cost-effective surface treatments available.



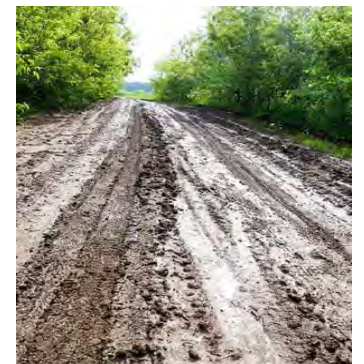
Virtually maintenance free-

Unpaved roads require weekly or monthly grading to keep a smooth riding surface. With Chip Seal there is no grading required.



No more dust or mud-

Chip Seal protects and seals the base eliminating dust and mud.



BENEFITS OF CHIP SEAL

Future Paving Options-

Chip Seal can be paved with tradition HMA overlays, Micro surfacing, or Chip Sealed again



Time-

Quick construction- very little disruption to the public



Crack Resistant-

Chip is extremely flexible; this helps with cracking compared to thin lift asphalt overlays.



Cost Comparison

- **1.5" Asphalt Overlay-**

\$183,978.67 per mile (\$190/Ton or \$15.68/SY)

- **Double Chip Seal**

\$71,577.40 per mile (\$6.10/SY)

- **6" Soil Cement Base**

\$227,052.90 per mile (\$19.35/SY)

- **Total for Soil Cement Base/ Double Chip-**

\$298,630.30 per mile (\$25.45/SY)

****Based off 1 mile of a 20' wide roadway- material only, does not include MOT, MOB, or striping.**

**BEFORE
CHIP SEAL**



**AFTER
CHIP SEAL
W/ FOG SEAL**



**BEFORE
DURING
AFTER**



After
Chip Seal
W/ Fog Seal





BREVARD COUNTY



BREVARD COUNTY



Manatee County

County Chip Seal Programs

- Bradford County
- St Lucie County
- Nassau County
- Marion County
- Osceola County
- Okaloosa County
- Suwannee County
- Clay County
- Polk County
- Washington County
- St Johns County- completed
- Glades County

Other Applications for Chip Seal

- **Crack Relief layer for Hot Mix Asphalt-** A single Chip Seal can be applied prior to an asphalt overlay to help slow and prevent reflective cracking. Because of the polymer in the CRS-2P Chip Seal oil, Chip Seal is very flexible and does a great job with cracking.
- **Cape Seal-** A single Chip Seal can be applied and then covered with a Double Micro Surfacing to give the road the appearance of asphalt. Cape Seal does a great job at slowing reflective cracking.



THANK YOU

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