



Collin County Asphalt Project





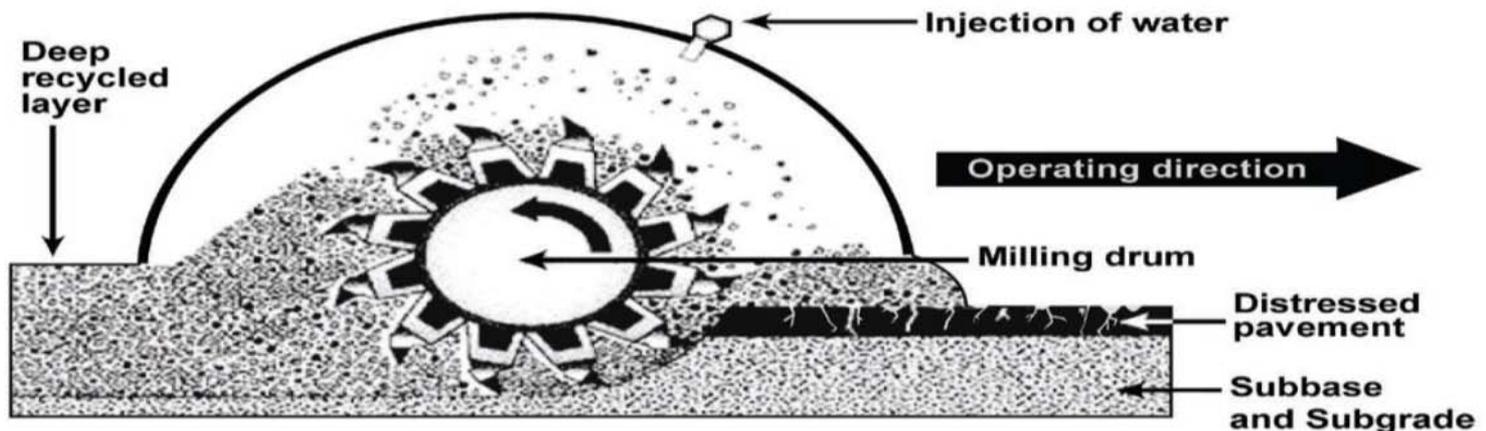
Collin County Roads

Collin County is growing at an amazing rate, this translates into more wear and tear on our county roadways. The county currently maintains 762 miles of roadway. It is imperative to transition into the maintenance and rebuild phase increasing the longevity and safety of our roadways. The Department of Public Works recommends the purchase of an asphalt equipment package consisting of a reclaimer, paver and roller. This group of equipment will ensure that our roads are well maintained as we phase into road maintenance.



Asphalt Equipment

- **Reclaimer-** A full depth reclaimer rebuilds failed asphalt pavements by recycling the existing roads. Existing asphalt and base materials are pulverized, rejuvenated and compacted to produce a strong, durable base material for the new roadway. There is no need to haul in aggregate or haul out old material for disposal.





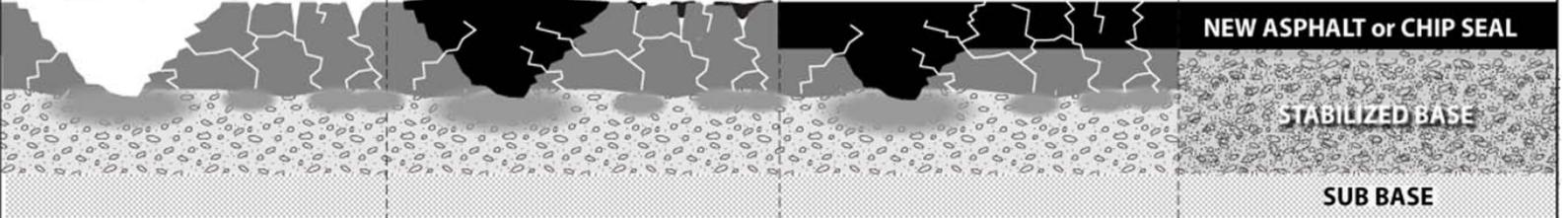
Benefits of Reclamation

- Reclaimed roads have more stable bases, can support heavier loads and last longer with lower maintenance costs.
- Eliminates the need to haul in or out aggregate material saving a large amounts of diesel fuel and man hours.
- Allows for the complete reconstruction of the pavement with little or no excavation and removal costs.
- Allows for the reuse of all existing aggregate, saving stone costs.
- Reclamation is efficient, construction of roadway is completed much faster.
- Environmentally friendly. Materials are recycled. Little or no dumping of waste materials required.
- Production- up to 1 mile of road per day.



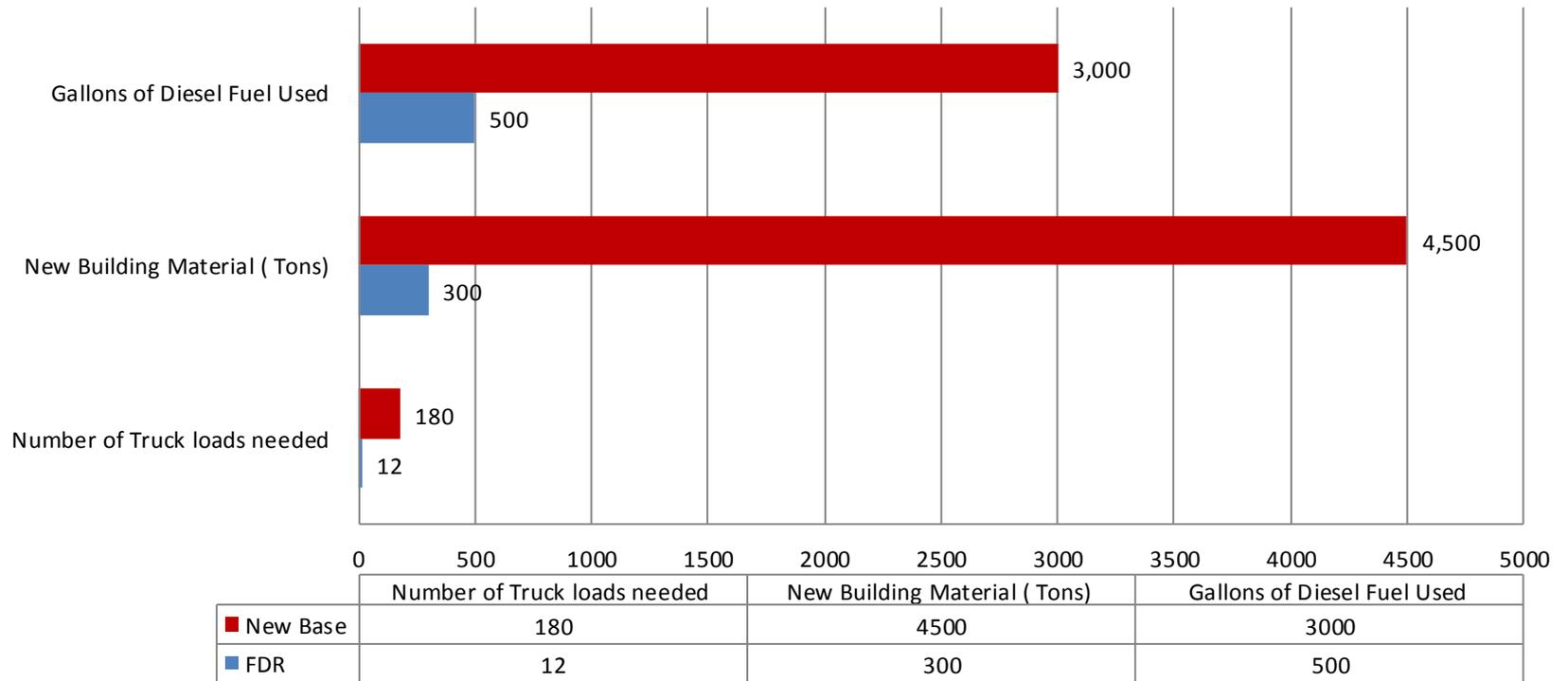
FDR vs. Collin County's Current Road Building Methods

FULL-DEPTH RECLAMATION (FDR) COMPARISON TO TRADITIONAL METHODS

Deteriorated Asphalt	Traditional Pothole and Crack Seal Repairs	Traditional Mill and Fill Repair Method	Full-Depth Reclamation Repair Method
			
<ul style="list-style-type: none">• Alligator Cracking• Potholes• Rutting• Shoving• Insufficient Base	<ul style="list-style-type: none">• Potholes Fill Unevenly• Crack Seal Has Short Life• Insufficient Base Problem Still Not Addressed• Less Stable Road Structure	<ul style="list-style-type: none">• Cracks Reflect Through Surface• Same Potholes Soon Reappear• Expensive• Temporary• Base Still insufficient	<ul style="list-style-type: none">• At Least 50% Less Expensive• A Minimum of 200% Faster• Increased Load Bearing Capacity• More Permanent Repair• Smoother Roads



Reclamation vs. New Roadway



Based on 1 mile of 24 foot road, 2 lanes



FDR Service Contract vs. In House

- Collin County currently contracts full service, turn key reclamation. Although the cost may vary dramatically with road conditions and sub base depths ,11 total miles have been reclaimed at an average cost of \$165,000 per mile. Total expense covers fuel, manpower, mechanical breakdowns etc...
- The estimated county cost per mile is \$42,964. A savings of \$122,036 per mile. Potential annual savings \$1,464,432. With this new group of equipment the county will be able to reclaim as much as 35 miles of road per year.



Reclaimer Rental vs. Purchase

Rental Rate

The current rental rate for a reclaimer is approximately \$20,000 per month.
(rental only, does not include operating costs)

Purchase Price

The purchase price of the reclaimer is approximately \$502,000. At this rate the equipment will pay for itself in 2.1 years. (equipment purchase only, does not include operating cost)



Supplemental Equipment

Paver- A paver is needed to lay down hot mix asphalt. Hot mix pavers are essential in road building today.

Heavy Duty Vibratory Roller- A high compaction roller creates a surface free from irregularities with the newly laid asphalt using weight and vibration. This roller can be used in multiple county applications.



Hot Mix Asphalt Paver

Benefits of Hot Mix Asphalt

- Smoother, safer riding surface
- Longer lasting than current chip seal by 5-7 years.
- Requires less road building material.
- 100% recyclable
- Low levels of traffic and tire noise
- Can be laid over existing county roads
- Reduced debris on roadway and damage to vehicles
- Properly designed and constructed HMA pavements 20 years or more with occasional resurfacing, relieving road agencies of the need for costly, time-consuming and disruptive reconstruction.

Projected County Use

- 25-35 miles per year on top of our current road building methods.
- Anticipated use 1,200-1,500 hrs. per year



Paver Rent vs. Purchase

Rental Rate

The paver rental rate is \$15,000 per month. (rental only, does not include operating cost)

Purchase Price

The purchase price of the paver is approximately \$270,000. At this rate the equipment will pay for itself in 1.5 years. (equipment purchase only, does not include operating cost)



Heavy Duty Vibratory Roller

Full depth reclamation coupled with hot mix applications require a heavy duty tandem roller.

Benefits:

- Compaction equipment measures and records the quality of compaction during the compaction process.
- Provides heavy compaction with fewer passes.
- Water system prevents asphalt pull and tear.
- Can be used for multiple functions not just reclamation.

Use

- Anticipated use is 1,900-2,000 hours per year.
- 50 miles per year



Roller Rent vs. Purchase

Rental Rate

The current rental rate for a roller is approximately \$5,000 per month.

(rental only, does not include operating costs)

Purchase Price

The roller purchase price is approximately \$126,415. At this rate the equipment will pay for itself in 2.1 years.

(equipment purchase only, does not include operating cost)

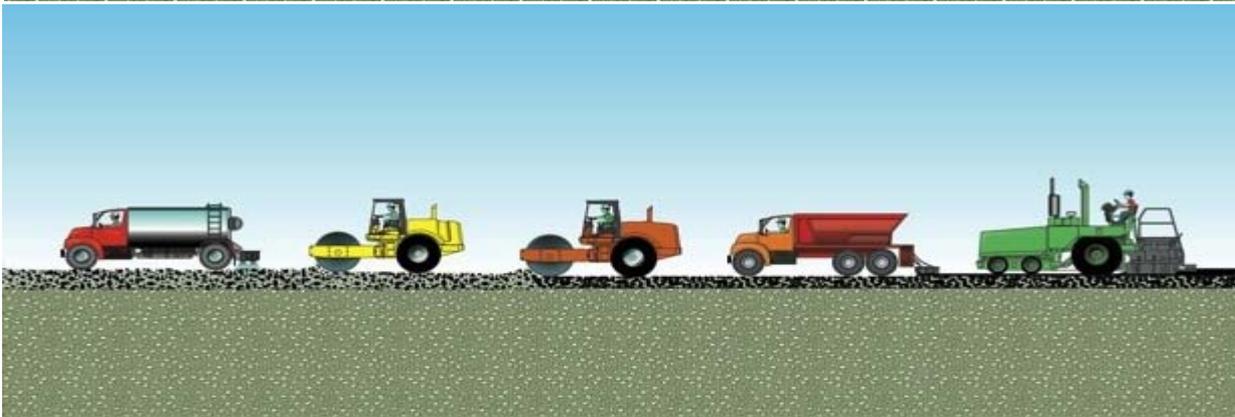
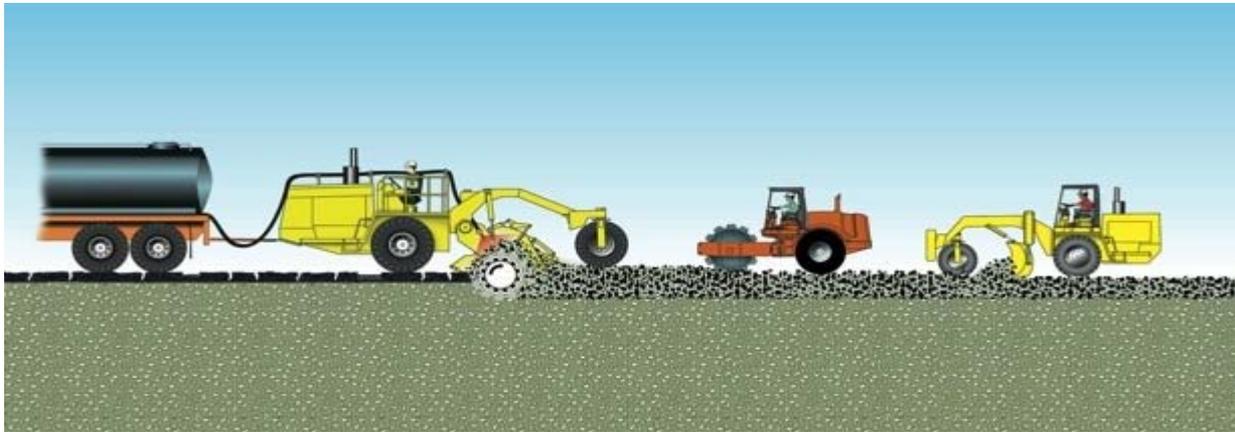


Funding

- The Public Works Department has earmarked the necessary funding to facilitate this request.
- Total project purchase price is approximately \$1,000,000 for all three machines.



FDR Illustration





Reclamation Process





Reclamation Process





Reclaimer





Paver





Roller

