

NCDOT Division 5 Bike Lane Presentation

November 2007

R-R-R Guide

April 2004

- **Resurfacing** - This work consists of the application of a new or recycled layer or layers of pavement material to existing pavement to provide additional structural integrity or improved rideability.
- **Restoration** - This work consists of restoring or generally bringing back the originally designed capability of the facility. This may include, in addition to the resurfacing described above, such activities as minor pavement widening or addition of paved shoulders, culvert extensions, other drainage improvements, correction of superelevation, upgrading safety appurtenances to current standards, and other safety improvements. Generally, restoration activities are confined within the existing right of way.
- **Rehabilitation** - In addition to the work described under restoration and resurfacing, this activity may include reconstruction of limited portions of the project's length in order for the facility to better serve existing and short-term traffic requirements. Additional right of way may be required.

Highway Classification

- **Statewide Tier** - These highways, including expressways, accommodate moderate to high volumes of traffic for travel between major points. These highways are primarily for through traffic, usually on a continuous route, and are generally the top 10% of the total highway system based on relative importance for statewide travel.
- **Regional Tier** - Provide primarily intracounty service with shorter travel distances and generally more moderate speeds. These routes provide service to county seats and towns not on the arterial system. Routes, which carry traffic from local roads to arterials, are collectors.
- **Sub-Regional Tier** - Provides access to farms, residences, businesses, or other abutting properties. The traffic volumes generated by the abutting land uses are largely short trips or a relatively small part of longer trips where the local road connects with major streets or highways of higher classifications.

R-R-R Shoulder Widths

Table 2

Minimum Width Revisions Based on

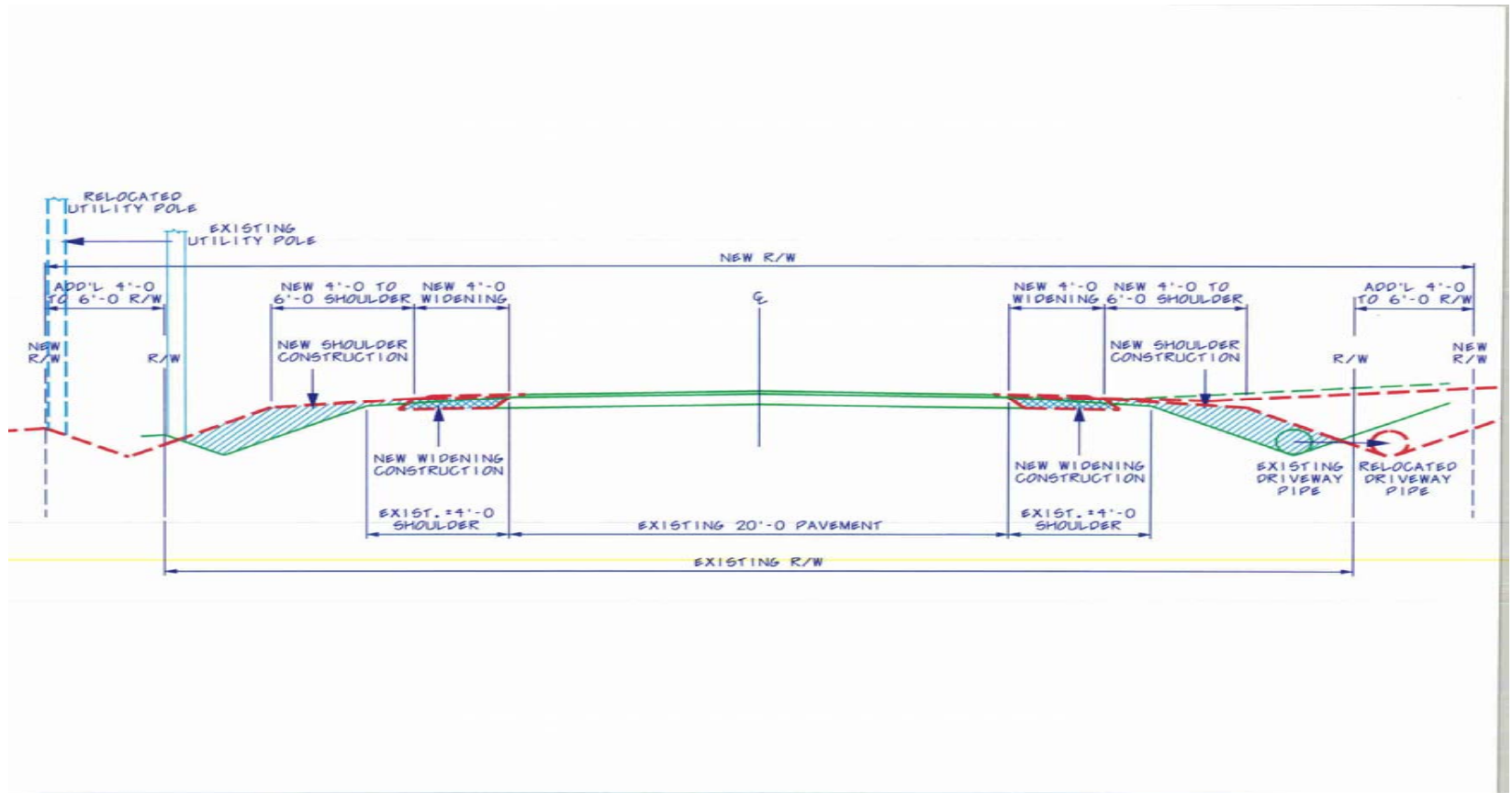
(NCHRP Report 486, Table 4)

Minimum Lane and Shoulder Widths for R-R-R Projects

Design Speed	Current ADT	Arterial		Collector		Local	
		Lane Width	Shoulder	Lane Width	Shoulder	Lane Width	Shoulder
Under 50 mph (Level and Rolling Terrain)	0 - 1000	11	4	10	3	10	3
	1000-2000	11	4	10	3	10	3
	over 2000	12	6	11	6	11	6
50 mph and over (Level and Rolling Terrain)	0 - 1000	11	4	11	3	10	3
	1000-2000	12	6	11	4	11	3
	over 2000	12	6	11	6	11	6
Under 50 mph (Mountainous Terrain)	0 - 1000	10	3	10	3	10	3
	1000-2000	11	3	10	3	10	3
	over 2000	12	6	11	6	11	4
50 mph and over (Mountainous Terrain)	0 - 1000	11	3	11	3	10	3
	1000-2000	11	3	11	3	10	3
	over 2000	12	6	11	6	11	4

- NOTES:
- Shoulder dimensions indicate graded widths and include paved shoulder widths.
 - Where guardrail is to be installed, graded shoulder width must be increased by 3 feet.
 - Where truck traffic (TTST and Duals) volume exceeds 10% of current ADT, lane widths should be increased by 1' to a maximum of 12'. 12' lane width should be used on routes designated as part of the National Truck Network.
 - For current ADT less than 1000, paved shoulder should be considered.
For current ADT between 1000 - 3000, 2' paved shoulders are recommended.
For current ADT over 3000, 4' paved shoulders should be used.

Typical Pvmt. Widening Section



Best Existing Case



Ideally



Not So Easy



Cost Comparison

- Adding 4' Paved Shoulders
 - \$517,500* per mile plus utility costs
 - Resurfacing Only
 - \$174,100 per mile
- *Assumes 10 new driveway pipes, 4 cross line extensions, and 5' R/W needed each side

So, for every 1 mile of 4' paved shoulder, it
“costs” 3 miles of resurfacing.

What about C&G?

- So, you want to stay inside the R/W?
- That may require C&G. If it does, it will require a closed drainage system (pipes and boxes).
- The cost: \$1.3 million, not including any water or sewer line adjustments.
- In other words, it costs over 7.5 miles of resurfacing!

How many paved miles?

(not including Interstates)

- Durham has 687.72 of centerline miles
- Durham has 1524.32 lane miles
- Durham has 247.15 miles of pavement rated < 80 (36% of centerline miles)
- In 2007, we resurfaced 25.51 miles (10% of needs < 80)