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NCDOT Load Posting Process for Bridges & Drainage Policy

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Load Posting Process for Bridges



Legal Vehicles

North Carolina

- *State Legislature establishes legal loads*
- *Maximum Vehicle Weight is **45 tons***

National

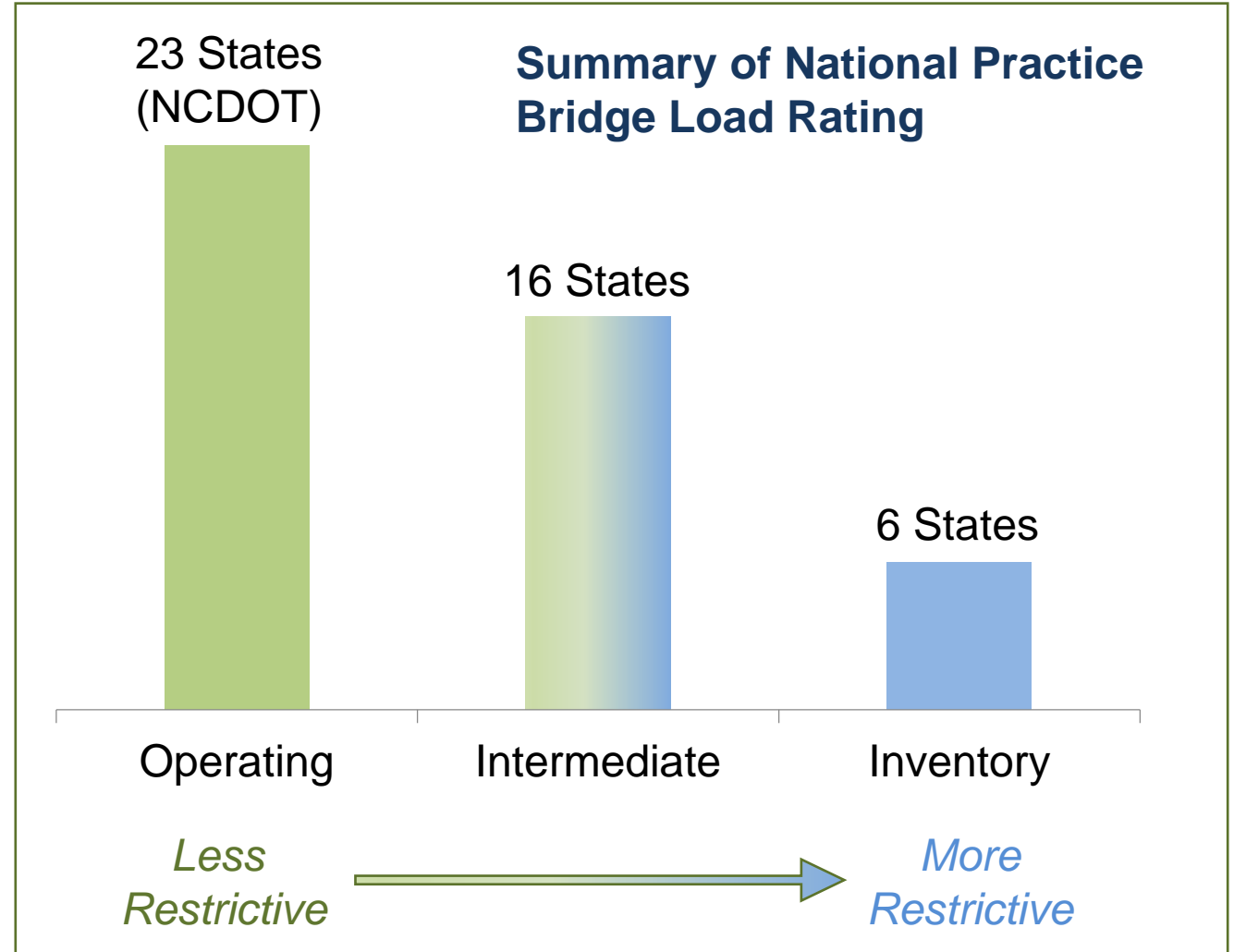
- *US Congress establishes legal loads for interstates*
- *Maximum Vehicle Weight is **42 tons***

No Weight Restrictions if a bridge can handle these legal loads

Engineering Standard for Analyzing & Load Posting:

Operating Rating (Less Restrictive)	Maximum permissible load that can be placed on the bridge. Allowing unlimited usage at this level will reduce the life of the bridge.
Inventory Rating (More Restrictive)	Load that can safely utilize the bridge for an indefinite period of time.

Standard: AASHTO Manual for Bridge Evaluation



Example: Beaufort County Bridge #48



Single Vehicle (SV) Analysis

Each of the 8 Legal SVs are analyzed individually.... Which controls?

DELIVERY SNSH 13.5 TON		Posting Required: NONE	DUMP SNAGGRS4 35 TON		Posting Required: NONE
GARBAGE SNGARBS2 20 TON		Posting Required: NONE	5-Axle Hauler SNS5A 35.5 TON		Posting Required: 35 Tons
AG COMPLIMENT SNAGRIS2 22 TON		Posting Required: NONE	6-Axle Hauler SNS6A 40 TON		Posting Required: 37 Tons
COTTON SNCOTTS3 27.25 TON		Posting Required: NONE	7-Axle Hauler SNS7B 42 TON		Posting Req'd: 37 Tons

Controlling SV
 Weight Limit:

**35
 TONS**

K = 1000 Pounds

Truck Tractor Semi Trailer (TTST) Analysis

Each of the 8 Legal TTSTs are analyzed individually.... Which controls?

Controlling
TTST Weight
Limit:

**43
TONS**

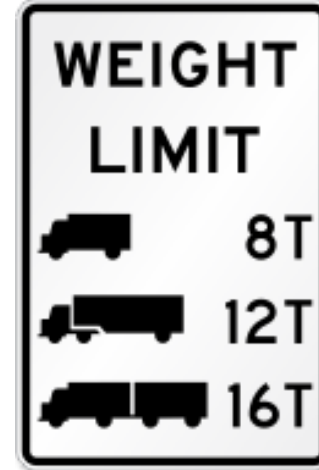
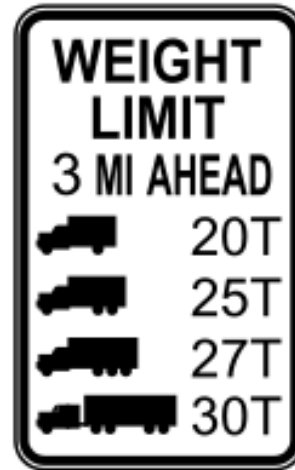
TNAGRIT3 33 TON		Posting Required: NONE	TNAGT5B 45 TON		Posting Required: 43 Tons
TNT4A 33 TON		Posting Required: NONE	TNT6A 42 TON		Posting Required: NONE
TNAGRIT4 43 TON		Posting Required: NONE	TNT7A 42 TON		Posting Required: NONE
TNAGT5A 45 TON		Posting Required: NONE	TNT7B 42 TON		Posting Required: NONE

Weight Limit Signing



NCDOT Signage

- SV Limit
- TTST Limit



Other DOTs Increased Delineation

- Multiple SV Limits, or
- Multiple TTST Limits



Other DOTs Decreased Delineation

- One limit for all axle configurations

Weight Restricted Bridges - Summary

- What does a farmer, logger, etc., do?
 - Route detours around load posted bridges.
 - Currently permitting for trucks exceeding legal loads.
- Possible Near Term Solution:
 - Applicant identifies preferred route.
 - Submit axle configuration and weights to permit group.
 - Bridges on route are analyzed for the **specific** truck.
 - Permit granted if bridge(s) on route pass analysis.

Drainage Policy



Rule of Reasonable Use

- Formally adopted by the N.C. Supreme Court in 1977 with respect to water drainage
 - Rule allows landowner to make reasonable use of their land.
 - Changes in use may alter surface water flow and can affect downstream property owners.



The Key Word is Reasonable

- The Department strives to develop and make reasonable use of its lands and rights of way through accepted engineering practices
- Bound by the same standards that apply for private property owners and developers



Maintenance of Drainage Outside the Right of Way

- The Department is responsible for providing adequate drainage for constructing and maintaining the state highway system
- Is not the responsibility of the Department to provide improved drainage for properties beyond the right of way.



What we Do

- Reduce the occurrence or extent of flooding of roadways – (Sufficient Benefit must be gained to justify the cost)
- Correct problems or conditions created by the Division of Highways (Recent Actions – cannot be something that occurred many years ago)
- Blocked Outlets – Remove natural blockages when deemed detrimental to the highway



What we Don't Do

- Elimination of Flooding on Private Property
- Maintenance of Ditches on Private Property
- Complete Elimination of Standing Water in Roadway Ditches
- Alteration of Ground Water Levels



Drainage in Subdivisions

- Department accepts existing drainage systems when we accept subdivision roads onto the state highway system
- Only accept maintenance responsibility for what is within the Right-of-Way
- The Responsibility for the maintenance of Drainage Easements or Storm Water Facilities remain with the property owner



Questions?

