

# Inventory Based Rating (IBR) A New Method for Rating Gravel Roads



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# Rating Systems

## CONDITION

- Surface distress

## PHYSICAL

- Inventory-based

# Transportation Asset Management Council

- Create a Rating Method
- Visual
- Rapid Collection of Data
- Rating does not change rapidly



# Good Surface





# To Bad Surface







**And Back Again**



# Inventory-based Rating System

A man wearing a yellow safety vest, sunglasses, and a light blue shirt is standing in a field. He is holding a long, thin pole or stick. In the background, there is a white fence and some green trees. The overall scene is outdoors and appears to be a rural or agricultural setting.

- Physical characteristics: width, drainage, structure
- Weighted by cost
- Ratings – 1 through 10
- Categories: good, fair, poor

# Rating Criteria

## Width

Good = 22' or greater

Fair = 16' to 21"

Poor = 15' or less

## Drainage

Good = 2' or Deeper

Fair = 2' to 6"

Poor = less than 6"

## Structure

Good = Greater than 7"

Fair = 4" to 7"

Poor = less than 4"



Rating Lookup Chart			
Width	Drainage	Structure	Rating
Good	Good	Good	10*
Good	Good	Good	9
Good	Good	Fair	8
Good	Good	Poor	7
Good	Fair	Good	9
Good	Fair	Fair	8
Good	Fair	Poor	6
Good	Poor	Good	7
Good	Poor	Fair	6
Good	Poor	Poor	5

Rating Lookup Chart			
Width	Drainage	Structure	Rating
Fair	Good	Good	8
Fair	Good	Fair	7
Fair	Good	Poor	6
Fair	Fair	Good	7
Fair	Fair	Fair	6
Fair	Fair	Poor	5
Fair	Poor	Good	6
Fair	Poor	Fair	5
Fair	Poor	Poor	4



Rating Lookup Chart			
Width	Drainage	Structure	Rating
Poor	Good	Good	5
Poor	Good	Fair	4
Poor	Good	Poor	3
Poor	Fair	Good	4
Poor	Fair	Fair	3
Poor	Fair	Poor	2
Poor	Poor	Good	3
Poor	Poor	Fair	2
Poor	Poor	Poor	1

# Rating Example

**Fair Structure**

**Good Drainage**

**Poor Width**

**Overall Rating of 4 (Poor)**

6' Wheel Path





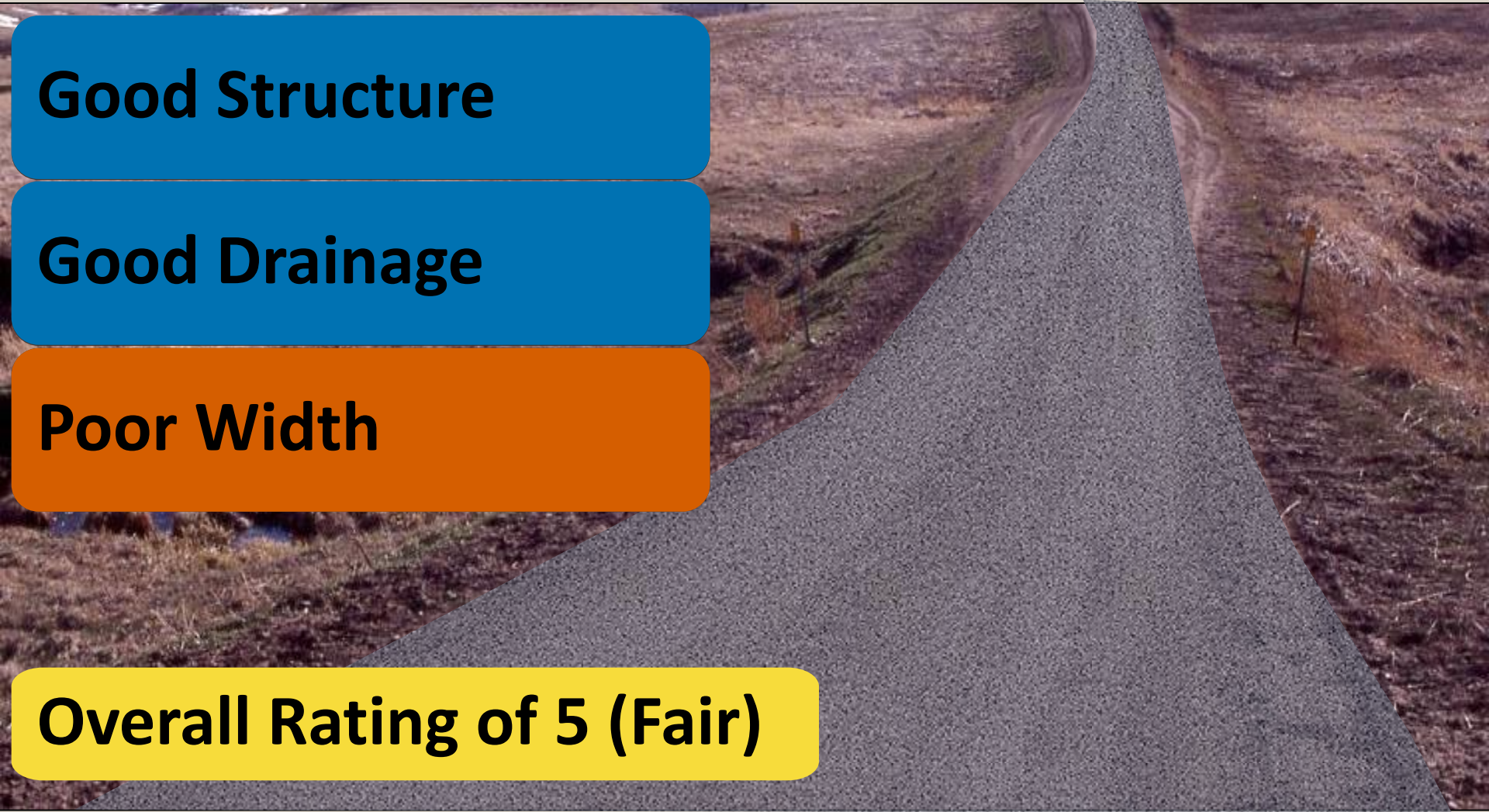
# Add 4 inches of gravel?

**Good Structure**

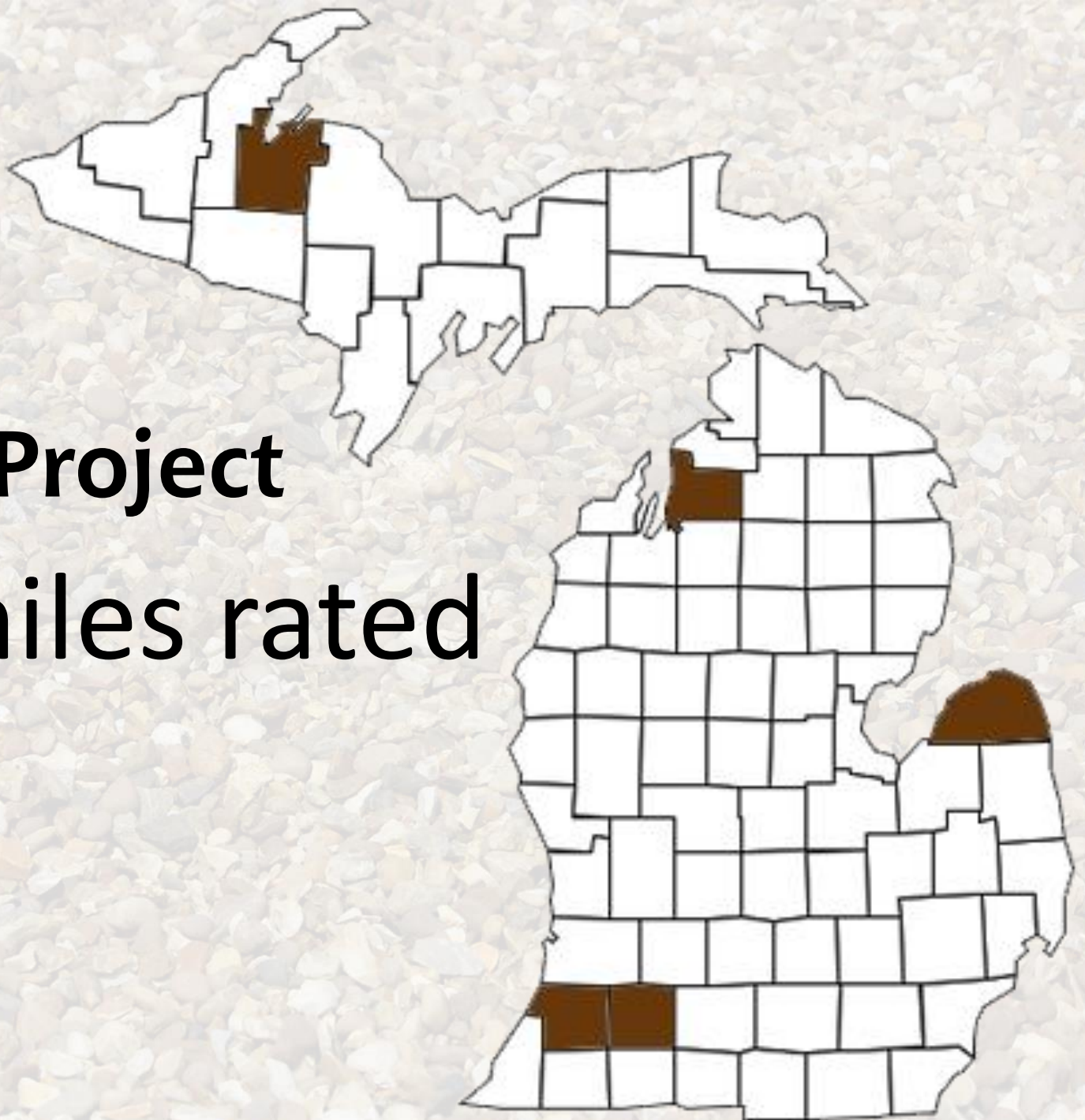
**Good Drainage**

**Poor Width**

**Overall Rating of 5 (Fair)**



**Pilot Project**  
661 miles rated





72.2% Correct

92.9% Within One

# VBCRC Data Collection

- All roads every year
  - City and Village roads as requested
- Three year rotation for payment
  - Townships (\$200-\$500 each)
  - Road Commission
  - TAMC reimbursement for asphalt
- Buy in from Townships
  - Township contributions to local road projects
    - 2015 - \$3,331,327.43
    - 2014 - \$2,838,766.31
    - 2013 - \$3,262,274.29





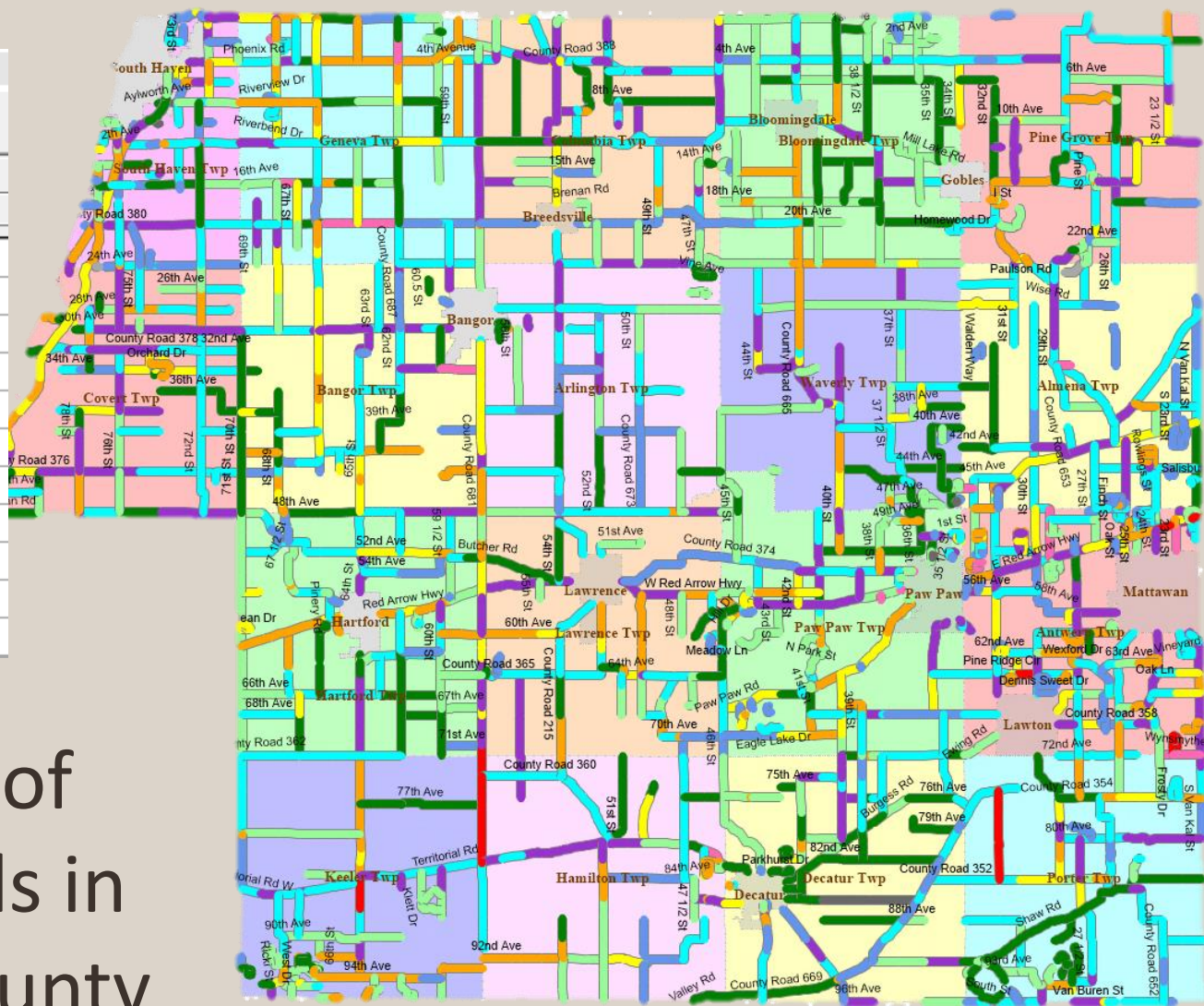
## Road Legend







Current Legend:

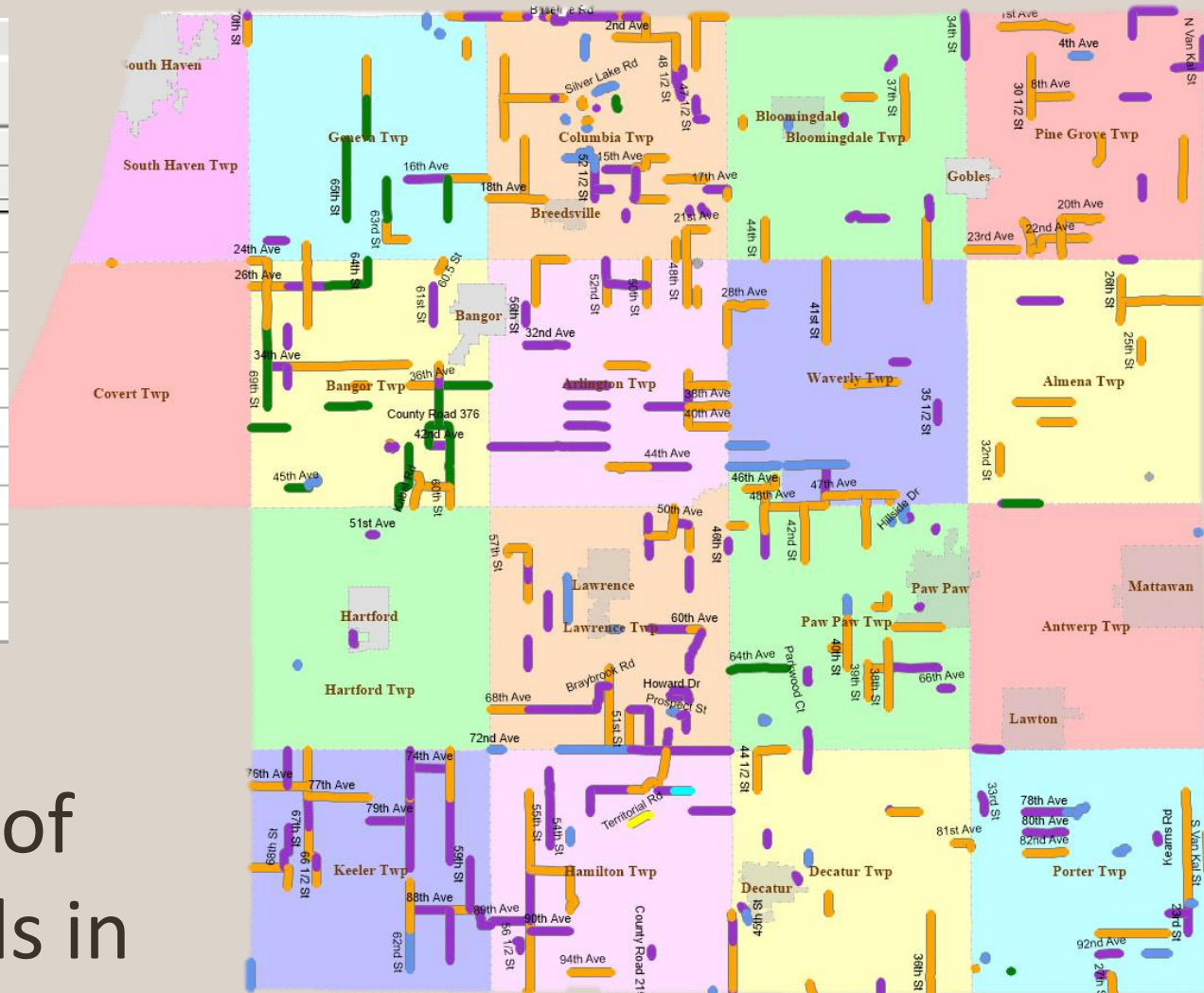
Latest Road Rating

Rating (surface) - Latest = 0	Solid (7)
Rating (surface) - Latest = 1	Solid (7)
Rating (surface) - Latest = 2	Solid (7)
Rating (surface) - Latest = 3	Solid (7)
Rating (surface) - Latest = 4	Solid (7)
Rating (surface) - Latest = 5	Solid (7)
Rating (surface) - Latest = 6	Solid (7)
Rating (surface) - Latest = 7	Solid (7)
Rating (surface) - Latest = 8	Solid (7)
Rating (surface) - Latest = 9	Solid (7)
Rating (surface) - Latest = 10	Solid (7)



1070 miles of  
Asphalt Roads in  
Van Buren County

Road Legend		
   		
Current Legend:		
Latest Road Rating		
	Rating (surface) - Latest = 0	Solid (7)
	Rating (surface) - Latest = 1	Solid (7)
	Rating (surface) - Latest = 2	Solid (7)
	Rating (surface) - Latest = 3	Solid (7)
	Rating (surface) - Latest = 4	Solid (7)
	Rating (surface) - Latest = 5	Solid (7)
	Rating (surface) - Latest = 6	Solid (7)
	Rating (surface) - Latest = 7	Solid (7)
	Rating (surface) - Latest = 8	Solid (7)
	Rating (surface) - Latest = 9	Solid (7)
	Rating (surface) - Latest = 10	Solid (7)



260 miles of  
Gravel Roads in  
Van Buren County



# Gravel Roads

- Important pieces of infrastructure
- Integral to commerce
- Lower maintenance costs
- Low traffic volume
- A well maintained gravel road is much better than...



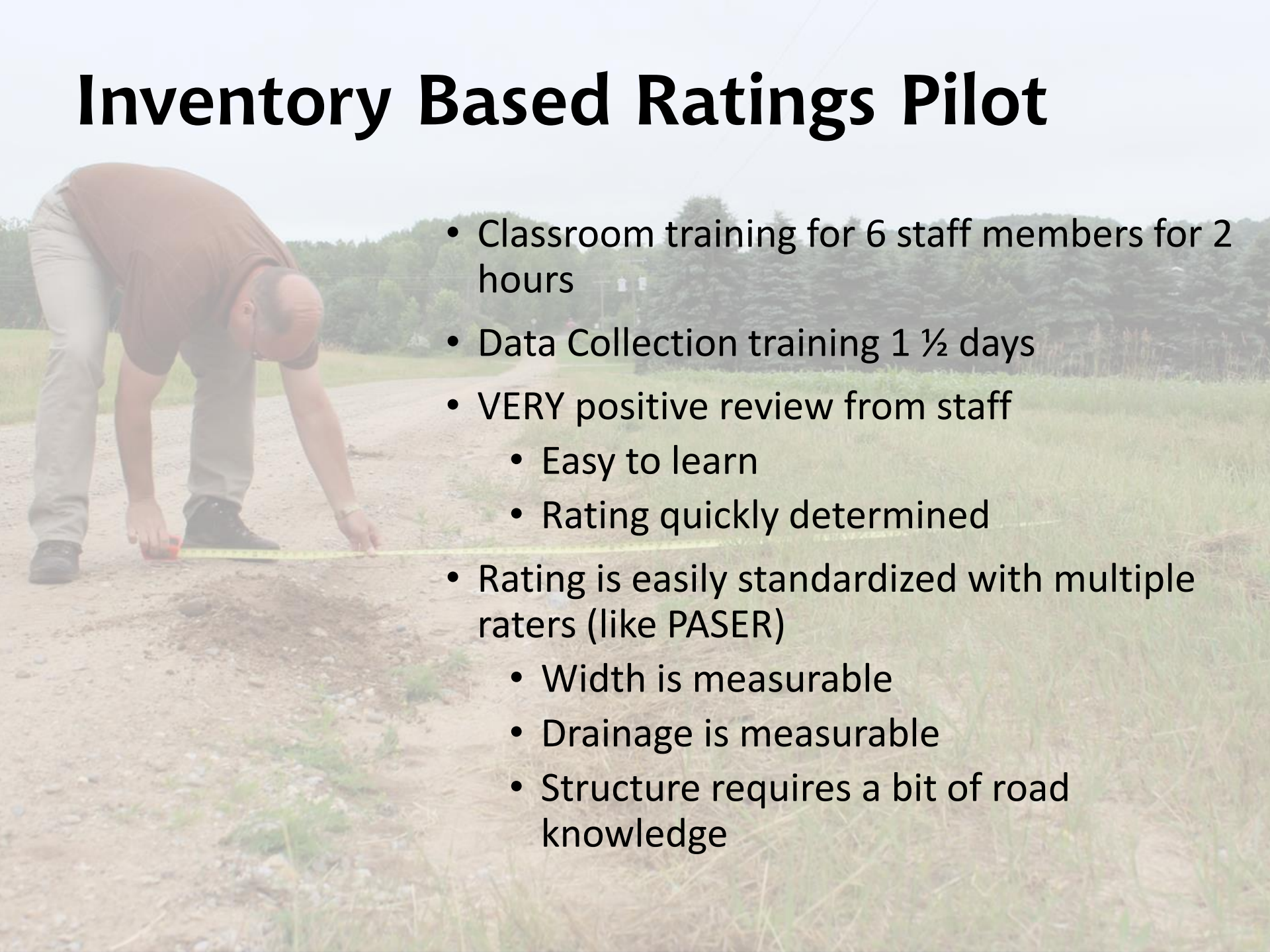
# IBR and PASER

- Good, Fair, Poor are similar concepts and ratings
- Remedy/Treatment costs per mile
  - Crackseal
  - Chip Seal
  - Overlay
  - Reconstruction
  - Widening
  - Drainage Correction
  - Gravel Resurfacing
- Develop Road Plans





# Inventory Based Ratings Pilot

- 
- Classroom training for 6 staff members for 2 hours
  - Data Collection training 1 ½ days
  - VERY positive review from staff
    - Easy to learn
    - Rating quickly determined
  - Rating is easily standardized with multiple raters (like PASER)
    - Width is measurable
    - Drainage is measurable
    - Structure requires a bit of road knowledge