# Wyoming DOT Story

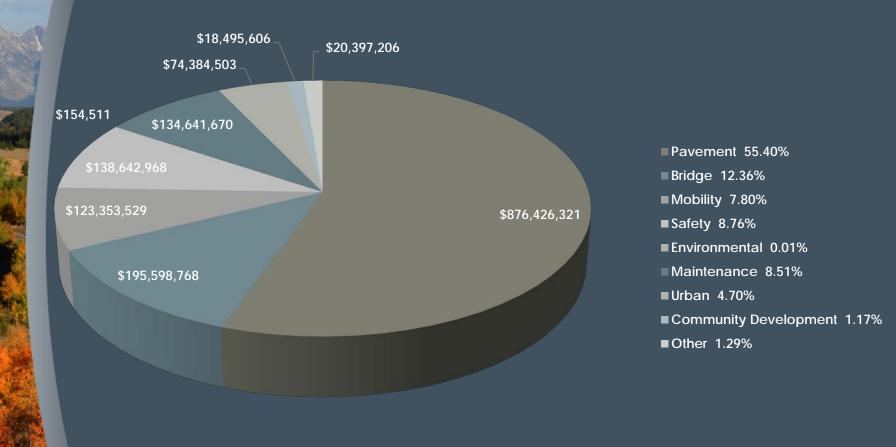
Martin Kidner State Planning Engineer martin.kidner@wyo.gov



## MAP-21 and FAST Act Push

- Draft TAMP due April 2018
- Most federal targets must be set October 1, 2018
- Desire to set targets earlier
  - March for targets for TAMP
  - January investment plan done
  - December how to plan done
- STIP shows how projects affect the performance
- Long Range Transportation Plan documents measurements

#### Wyoming's Proposed STIP Expenditures Cost Breakdown by Asset Category Statewide Years 2018 - 2023



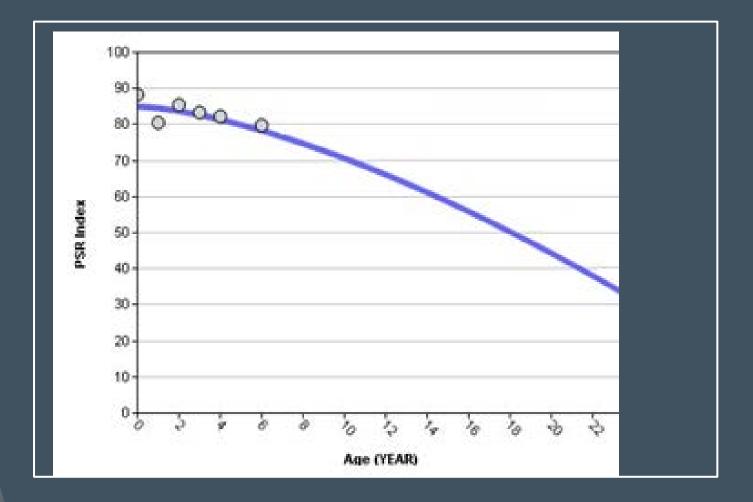


## Target setting is cyclic

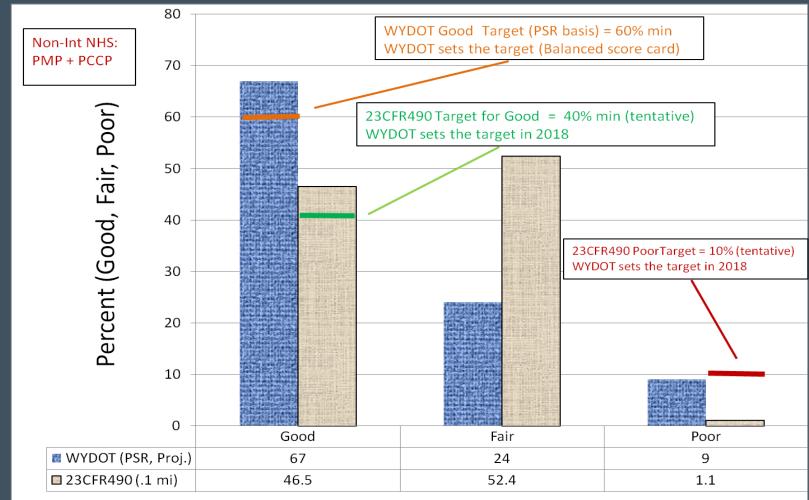
- Technical Methods
  - provide series of projections based on investment scenarios
- Business Process
  - Other transportation needs competing for funds



## Our pavement models are still good, but....



#### Non Interstate Condition WYDOT and 23CFR490 Definitions for Good, Fair, Poor



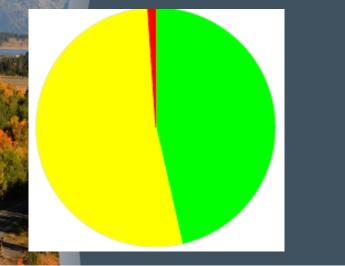
C23 CFR 490 - NATIONAL PERFORMANCE MANAGEMENT MEASURES



## HPMS Report Card and Fact Book

### Non –Interstate NHS

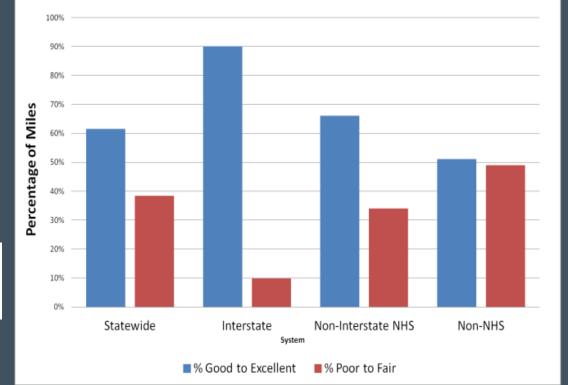
#### 2016 data Submitted June 2017

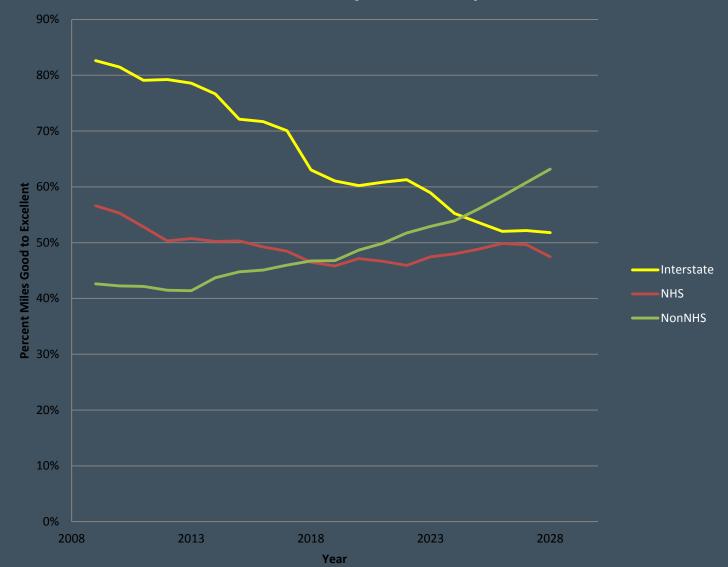


LANE MILES FULL EXTENT GOOD (46.48%) LANE MILES FULL EXTENT FAIR (52.45%) LANE MILES FULL EXTENT POOR (1.08%)

### 2016 Fact Book

Statewide Highway System Pavement Condition [Includes all surfacing improvements through 2015]

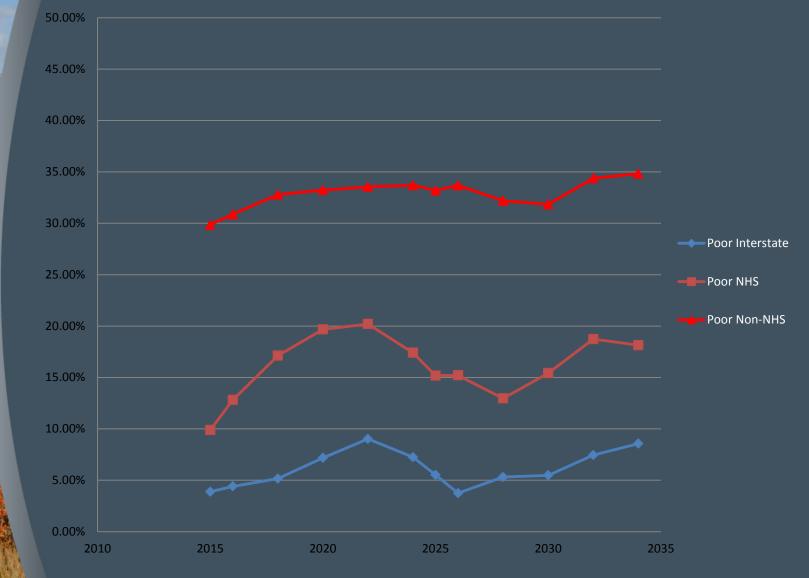




#### Interstate - 20% Systems Comparison

DEPARTMENT

#### Condition Projections 4% Inflation Rate



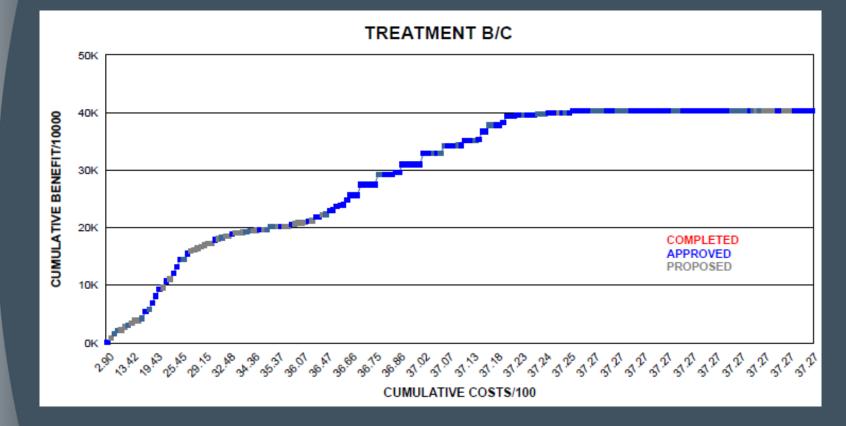


#### **ANNUAL FATALITIES & 5 YEAR AVERAGE FATALITIES**





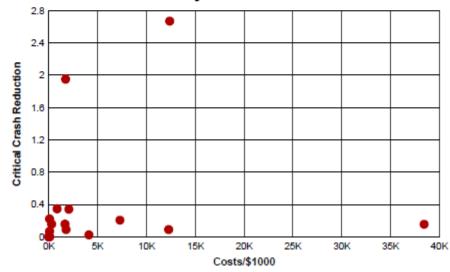
## Understand the candidate treatments





| DISTRICT 3   | Critical<br>Crash<br>Reduction | Costs/\$1000 |
|--|--------------------------------|--------------|
| Treatment Type                                     |                                |              |
| ADD DILEMMA ZONE PROTECTION                        | 0.00                           | 0            |
| ADD RIGHT TURN LANE ACCEL - RURAL LONG             | 0.00                           | 0            |
| CENTER LINE RUMBLE STRIPES RURAL                   | 1.95                           | 1715         |
| CHIP SEAL  | 0.34                           | 2049         |
| CORRECT SUPER - REBUILD CURVE - FOUR PCT           | 0.09                           | 12273        |
| DELINEATION  | 0.00                           | 1            |
| NO PASSING   | 0.22                           | 73           |
| RUNAWAY TRUCK RAMP                                 | 0.00                           | 88           |
| SAFETY GRADING                                     | 0.09                           | 1762         |
| SET OF SIGNS FOR CURVE                             | 0.07                           | 71           |
| SNOW FENCE   | 0.21                           | 7281         |
| STRIPING - EPOXY PAINT                             | 2.67                           | 12380        |
| ULTRAGUARD   | 0.01                           | 14           |
| UPGRADE GUARDRAIL                                  | 0.16                           | 1660         |
| UPGRADE WILD ANIMAL FENCE                          | 0.35                           | 846          |
| VARIABLE SPEED LIMITS-INTERSTATE ONE DIRECTION     | 0.16                           | 290          |
| WIDEN SHOULDER - FOUR FEET - MED VOL - MED GRADING | 0.16                           | 38442        |
| WILDLIFE CROSSING STRUCTURES                       | 0.03                           | 4100         |

## It is about crash reduction!

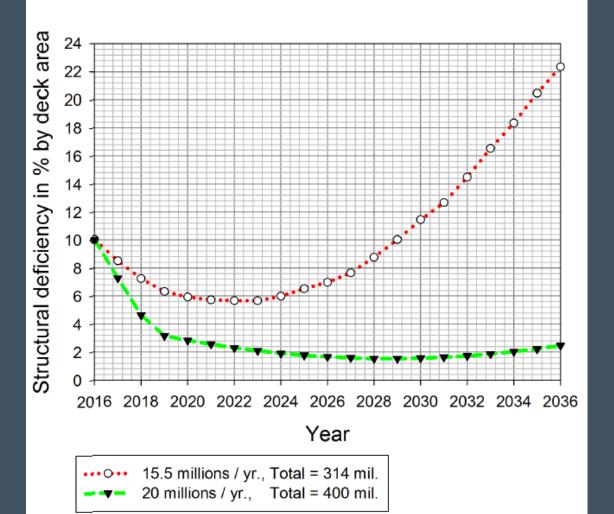


#### Safety Treatments



## Bridge Funding Comparison

Structural Deficiency vs. Year (Using total unit cost)



## District BMS Targets & Candidate List

|           |      | Distric                              | t 2 B                |     |               |          |        |           | Distri    | ct 2 Fiscal | Priscal Year 2021 BMS Candidates |        |           |        |              |              |                             |    |  |                  |          |      |  |
|-----------|------|--------------------------------------|----------------------|-----|---------------|----------|--------|-----------|-----------|-------------|----------------------------------|--------|-----------|--------|--------------|--------------|-----------------------------|----|--|------------------|----------|------|--|
|           |      | Deck Treatment                       | N                    |     |               |          |        |           |           |             |                                  |        |           |        | Ŀ            |              |                             | Т  |  |                  |          |      |  |
| -         | -+   | (NBI Item 58 - Deck)                 | Fund                 |     |               |          |        |           |           |             | E E                              | RATING | RATING    | 9      | COND. RAIING |              |                             |    |  |                  |          |      |  |
|           | — H  | Total                                | \$7.72               |     |               |          |        |           |           |             | DATE                             | RAT    | 8         | RATING | \$ R         |              |                             |    |  |                  |          |      |  |
|           | ≿ F  | Protect (NBI 8 & 7)                  | \$                   |     |               |          |        |           |           |             | S                                |        | ġ         | 2      |              |              | °                           |    | ē  | 5                |          |      |  |
|           | ≞ Ľ  | Repair (NBI 6)                       | \$\$                 |     |               |          |        |           |           | ш           | Ē                                | COND.  | COND.     | COND.  |              | ਹ ਦੇ ਕੋ      |                             | i  | , je                                       | EA               |          |      |  |
|           |      | Minor Rehab (NBI 5)<br>Rehab (NBI 4) |                      |     |               | L _      |        | E E       | щ         | 9           | PE                               |        | <u>a</u>  |        |              | Predicted    | Deck                        |    | t Se                                       | AF               |          |      |  |
|           |      | Major Rehab (NBI 3)                  | \$ 5.6<br>\$ 2.12    |     | E I           | 5        |        | ្រត្ត     | ž         | E           | Ň.                               | NBI    | R.        | NBI    |              |              | n Sa                        |    | L De<br>ab \$<br>ires                      | 5                | <u>B</u> |      |  |
|           |      | Replace (NBI 2 & 1)                  | \$2.12<br>\$         |     | SYSTEM<br>LRS | FACILITY | đ      | STRUCTURE | ΓΑΠΤΟΡΕ   | LONGITUDE   | LASTINSPECTION                   | DECK   | SUPER NBI | SUB    |              | 2021<br>Deck | 2021 Deck<br>Rehab Strategy |    | 2021 Deck<br>Rehab \$<br>(Nearest \$5,000) | MAP-21 AREA (SF) | PROJECT  | 2    |  |
|           | H    | Total                                | \$6.4 <sup>2</sup> 2 | NHS |               | US 18    | 0.96   |           | 42.656575 | -105.18528  | 3/9/2016                         |        |           | 7 N    |              | 4            | Rehab                       | Ś  |  |                  | N401017  |      |  |
|           | ⊊⊢   | Protect (NBI 8 & 7)                  | \$ -                 |     |               |          |        |           |           |             |                                  |        |           |        |              |              |                             |    |  |                  |          |      |  |
|           | ≞ Ľ  | Repair (NBI 6)                       | <u>\$</u> 2          | NHS |               | I-25 SBL | 39.24  |           | 41.544633 | -104.89163  | 4/25/2016                        |        |           | 5 N    |              |              | Rehab                       | \$ |  |                  | B202010  |      |  |
|           |      | Minor Rehab (NBI 5)                  | \$ 2                 | NHS |               | I-25 SBL | 117.47 |           | 42.573764 | -105.07145  | 5/14/2015                        |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | B202010  |      |  |
|           |      | Rehab (NBI 4)<br>Major Rehab (NBI 3) | \$4.6(2              | NHS | ML25I         | I-25 NBL | 35.80  |           | 41.496011 | -104.89765  | 4/21/2016                        |        |           | 5 N    |              | 4            | Rehab                       | \$ |  |                  | B202010  |      |  |
| · · · · · |      | Replace (NBI 2 & 1)                  | \$1.8<br>\$2         | NHS |               | I-25 NBL | 43.66  |           | 41.604956 | -104.86285  | 5/25/2016                        |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | B202010  |      |  |
| -         | -    | Total                                | \$ 2<br>\$5.34<br>2  | NHS | ML20106B      |          |        | BMA       | 42.855547 | -106.29178  | 1/13/2017                        |        |           | 6 N    |              | 4            | Rehab                       | \$ |  |                  | B212002  |      |  |
| 1         | 2    | Protect (NBI 8 & 7)                  | ć 👘                  | NHS |               | I-25 SBL | 137.41 |           | 42.737683 | -105.3772   | 1/9/2017                         |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | B212002  |      |  |
|           | ۶Ŀ   | Repair (NBI 6)                       | è Z                  | NHS |               | I-25 SBL | 160.87 | _         | 42.823964 |             | 12/30/2015                       |        |           | 7 N    |              | 4            | Rehab                       | \$ | 300,000                                    |                  | B212002  |      |  |
|           |      | Minor Rehab (NBI 5)                  | \$ 2                 | NHS |               | I-25 SBL | 172.12 |           | 42.837467 | -106.01437  | 2/6/2015                         |        |           | 6 N    |              | 4            | Rehab                       | \$ |  |                  | B212002  |      |  |
|           |      | Rehab (NBI 4)                        | \$ 3.7               | NHS | ML25D         | I-25 SBL | 204.62 |           | 43.085311 | -106.3371   | 2/12/2016                        |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | 1254159  | 2021 |  |
|           | 2022 | Major Rehab (NBI 3)                  | \$1.6                | NHS |               | I-25 NBL | 110.55 |           | 42.486883 | -105.03302  | 4/1/2015                         |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | B212002  |      |  |
|           | ł    | Replace (NBI 2 & 1)                  | \$ 2                 | NHS | ML25I         | I-25 NBL | 137.41 |           | 42.737861 | -105.37722  | 1/9/2017                         |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | B212002  |      |  |
|           | _ 1  | Total                                | \$8.07 <sup>2</sup>  | NHS |               | I-25 NBL | 139.76 |           | 42.755725 | -105.40793  | 9/21/2015                        |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | B212002  |      |  |
|           |      | Protect (NBI 8 & 7)                  | \$ 2                 | NHS |               | I-25 NBL | 204.62 |           | 43.085325 | -106.33652  | 2/12/2016                        |        |           | 7 N    |              | 4            | Rehab                       | \$ |  |                  | 1254159  | 2021 |  |
|           |      | Repair (NBI 6)                       | \$ 2                 | NHS | ML251         | I-25 NBL | 247.53 |           | 43.636631 | -106.59398  | 4/15/2015                        |        |           | 7 N    |              | 4            | Rehab                       | \$ | 360,000                                    |                  | 0255095  |      |  |
|           |      | Minor Rehab (NBI 5)                  | \$ 2                 | NHS |               | I-25 SBL | 126.13 |           | 42.652933 | -105.19904  | 4/28/2015                        |        |           | 7 N    | N            | 4            | Rehab                       | \$ |  |                  | B222001  |      |  |
|           |      | Rehab (NBI 4)                        | \$5.9 <sup>,</sup> 2 | NHS | ML25D         | I-25 SBL | 188.34 | DKW       | 42.856983 | -106.32737  | 4/27/2015                        | 5 (    | 6         | 7 N    | N            | 4            | Rehab                       | Ş  | 1,395,000                                  | 22,706           | 1254161  | 2022 |  |
| 11        | ין א | Major Rehab (NBI 3)                  | \$2.1.2              | NHS | ML25I         | I-25 NBL | 126.13 | CZW       | 42.652972 | -105.1988   | 4/27/2015                        | 5 7    | 7         | 7 N    | N            | 4            | Rehab                       | \$ | 495,000                                    | 8,046            | B222001  | 2022 |  |
| 11-       | I    | Replace (NBI 2 & 1)                  | \$ 2                 | NHS |               | I-25 NBL | 165.91 | _         | 42.837153 | -105.89332  | 3/28/2016                        |        | 5         | 7 N    | N            | 4            | Rehab                       | \$ |  |                  | 1253116  |      |  |
|           |      | ding includes additiona              | 1 25% o 2            | NHS | ML25I         | I-25 NBL | 188.34 | AIJ       | 42.857075 | -106.32726  | 4/29/2015                        | 5 7    | 7         | 7 N    | N            | 4            | Rehab                       | \$ | 1,010,000                                  | 16,443           | 1254161  | 2022 |  |
|           |      | lization costs.                      | 2                    | NHS | ML21B         | WYO 220  | 57.62  | BUC       | 42.437297 | -107.20731  | 1/5/2016                         | 5      | 7         | 6 N    | N            | 4            | Rehab                       | \$ | 450,000                                    | 7,353            | B232001  | 2023 |  |
|           | Fund | ding and candidate list (            | costs ir 2           | NHS | ML21B         | WYO 220  | 62.73  | BUD       | 42.489853 | -107.13973  | 1/5/2016                         | 5 (    | 6         | 5 N    | N            | 4            | Rehab                       | \$ | 340,000                                    | 5,534            | B232001  | 2023 |  |
|           |      |                                      | 2                    | NHS |               | I-25 SBL | 45.21  | DCT       | 41.626556 | -104.85473  | 5/25/2016                        |        |           | 7 N    | N            | 4            | Rehab                       | \$ | 355,000                                    | 5,807            | B232001  | 2023 |  |
|           |      |                                      | 2                    | NHS | ML25D         | I-25 SBL | 50.66  | DCY       | 41.702225 | -104.83092  | 5/16/2016                        | 5 3    | 5         | 7 N    | N            | 4            | Rehab                       | \$ | 355,000                                    | 5,807            | B232001  | 2023 |  |
| 9         |      |                                      | 2                    | NHS | ML25D         | I-25 SBL | 59.01  | ADG       | 41.803517 | -104.79664  | 5/18/2016                        | 5 3    | 5         | 7 N    | N            | 4            | Rehab                       | \$ | 155,000                                    | 2,509            | B232001  | 2023 |  |
| 197       |      |                                      | 2                    | NHS | ML25D         | I-25 SBL | 64.04  | ADI       | 41.856883 | -104.86232  | 3/17/2016                        | 5 3    | 5         | 6 N    | N            | 4            | Rehab                       | \$ | 275,000                                    | 4,483            | B232001  | 2023 |  |
|           |      |                                      | 2                    | NHS | ML25D         | I-25 SBL | 68.45  | ADL       | 41.904122 | -104.91647  | 12/28/2016                       | 5 3    | 5         | 5 N    | N            | 4            | Rehab                       | \$ | 210,000                                    | 3,450            | B232001  | 2023 |  |
| 1 A 1     |      |                                      | 2                    | NHS | ML25D         | I-25 SBL | 246.30 | MLA       | 43.627939 | -106.57218  | 4/15/2015                        | 5      | 7         | 7 N    | N            | 4            | Rehab                       | \$ | 700,000                                    | 11,352           | 1255118  | 2023 |  |
| 礼物        |      |                                      | 2                    | NHS | ML25I         | I-25 NBL | 45.21  | DCS       | 41.626286 | -104.85427  | 5/25/2016                        | 5      | 7         | 7 N    | N            | 4            | Rehab                       | \$ | 355,000                                    | 5,807            | B232001  | 2023 |  |

## BMS Report

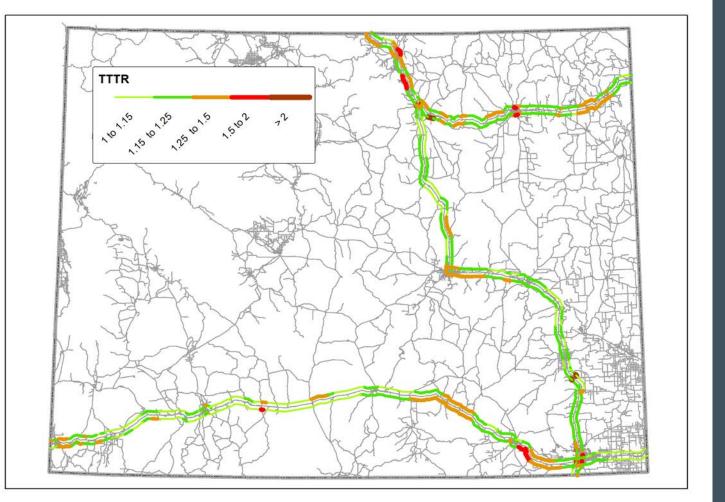
#### DISTRICT 2 BMS DECK REHAB TARGETS AS OF 04/24/2017

FY 2021

| F1 2021                |          |           |           |           |            |           |          |                   |           |            |          |                     |                 |           |  |  |  |
|------------------------|----------|-----------|-----------|-----------|------------|-----------|----------|-------------------|-----------|------------|----------|---------------------|-----------------|-----------|--|--|--|
| Deck Treatment         |          |           | NH        | IS        |            |           | NON-NHS  |                   |           |            |          |                     |                 |           |  |  |  |
| (NBI Item 58 - Deck)   |          | rget      |           | mmed      | Programm   | Ta        | Target   |                   |           |            | nmed     | Programmed - Target |                 |           |  |  |  |
| (NBI Itelli 56 - Deck) | Funding  | Area (SF) | Funding   | Area (SF) | Funding    | Area (SF) | Funding  | Funding Area (SF) |           | I          | Funding  | Area (SF)           | Funding         | Area (SF) |  |  |  |
| Total                  | \$6.42 M | 94,000    | \$7.37 M  | 100,763   | \$ 0.95 M  | 6,763     | \$0.69 M |                   | 10,000    | \$         | 0.80 M   | 10,906              | 10,906 \$0.11 M |           |  |  |  |
| Protect (NBI 8 & 7)    | \$-      | -         | \$-       | -         | \$-        | -         | \$ -     |                   | -         | \$         | -        | -                   | \$ -            | -         |  |  |  |
| Repair (NBI 6)         | \$-      | -         | \$-       | -         | \$-        | -         | \$ -     |                   | -         | \$         | -        | -                   | \$ -            | -         |  |  |  |
| Minor Rehab (NBI 5)    | \$-      | -         | \$0.44 M  | 11,352    | \$ 0.44 M  | \$-       |          | -                 | \$        | -          | -        | \$ -                | -               |           |  |  |  |
| Rehab (NBI 4)          | \$4.60 M | 75,000    | \$ 2.99 M | 48,600    | \$(1.61 M) | (26,400)  | \$0.40 M |                   | 7,000     | \$         | 0.45 M   | 7,290               | \$0.05 M        | 290       |  |  |  |
| Major Rehab (NBI 3)    | \$1.83 M | 19,000    | \$3.95 M  | 40,811    | \$ 2.12 M  | 21,811    | \$0.29 M |                   | 3,000     | \$         | 0.35 M   | 3,615               | \$0.06 M        | 615       |  |  |  |
| Replace (NBI 2 & 1)    | \$-      | -         | \$-       | -         | \$ -       | -         | \$ -     |                   | -         | \$         | -        | -                   | -               |           |  |  |  |
| PROJECT ID             | STR      | LRS       | MP        | SYSTEM    | DECK       | REHAB     | AREA     |                   | BMS       | ENGINEER'S |          | COMMENTS            |                 |           |  |  |  |
| PROJECT ID             | NO       | ROUTE     | IVIP      |           | STRA       | TEGY      | (SF)     | C                 | OST EST.  | C          | OST EST. |                     |                 | 3         |  |  |  |
| 0255095                | AKA      | ML25I     | 247.53    | NHS       | Rehab      |           | 5,822    | \$                | 360,000   |            |          |                     |                 |           |  |  |  |
| 0255095                | AJV      | ML25I     | 246.30    | NHS       | Minor Re   | hab       | 11,352   | \$                | 440,000   |            |          |                     |                 |           |  |  |  |
| 1254159                | AJA      | ML25D     | 204.62    | NHS       | Rehab      |           | 5,811    | \$                | 355,000   |            |          |                     |                 |           |  |  |  |
| 1254159                | AIZ      | ML25I     | 204.62    | NHS       | Rehab      |           | 5,811    | \$                | 355,000   |            |          |                     |                 |           |  |  |  |
| 1254159                | DOI      | ML25I     | 210.41    | NHS       | Major Re   | hab       | 6,169    | \$                | 595,000   |            |          |                     |                 |           |  |  |  |
| B212002                | AFJ      | ML25I     | 110.55    | NHS       | Rehab      |           | 6,432    | \$                | 395,000   |            |          |                     |                 |           |  |  |  |
| B212002                | AFU      | ML25D     | 137.41    | NHS       | Rehab      |           | 3,741    | \$                | 230,000   |            |          |                     |                 |           |  |  |  |
| B212002                | AFT      | ML25I     | 137.41    | NHS       | Rehab      |           | 3,741    | \$                | 230,000   |            |          |                     |                 |           |  |  |  |
| B212002                | AGB      | ML25I     | 139.76    | NHS       | Rehab      |           | 5,693    | \$                | 350,000   |            |          |                     |                 |           |  |  |  |
| B212002                | AGY      | ML25D     | 160.87    | NHS       | Rehab      |           | 4,884    | \$                | 300,000   |            |          |                     |                 |           |  |  |  |
| B212002                | BMA      | ML20106B  | 0.01      | NHS       | Rehab      |           | 4,140    | \$                | 255,000   |            |          |                     |                 |           |  |  |  |
| B212002                | AHM      | ML25D     | 172.12    | NHS       | Rehab      |           | 2,523    | \$                | 155,000   |            |          |                     |                 |           |  |  |  |
| B212002                | CWZ      | ML34B     | 187.83    | NHS       | Major Re   | hab       | 34,643   | \$                | 3,350,000 |            |          |                     |                 |           |  |  |  |
| B212002                | ACQ      | ML1118B   | 14.31     | NON-NHS   | Rehab      |           | 2,845    | \$                | 175,000   |            |          |                     |                 |           |  |  |  |
| B212002                | CUE      | ML1610B   | 2.52      | NON-NHS   | Rehab      |           | 4,445    | \$                | 275,000   |            |          |                     |                 |           |  |  |  |
| B212002                | ADQ      | ML1619B   | 2.45      | NON-NHS   | Major Re   | hab       | 3,615    | \$                | 350,000   |            |          |                     |                 |           |  |  |  |
|                        |          |           |           |           |            |           |          |                   |           |            |          |                     |                 |           |  |  |  |
|                        |          |           |           |           |            |           |          |                   |           |            |          |                     |                 |           |  |  |  |

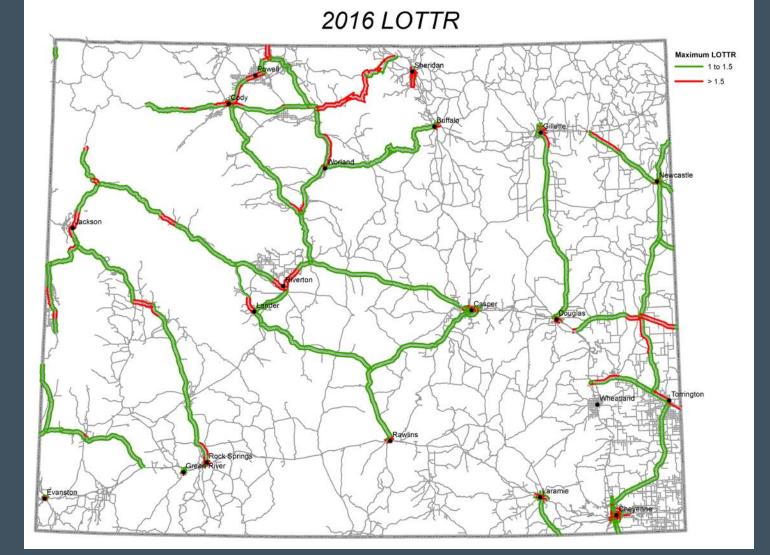








## Congestion







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