


## CORRIDOR PLAN PURPOSE

This Corridor Plan is part of a set of documents created through a comprehensive planning process entitled Wyoming Connects. This set of documents captures consistent, transparent, and repeatable planning steps, analysis, and resulis designed to provide intormation to guide project selection and programming decision makers. Each document is designed to build upon prior documents and cascade the Strategic Goals of WYDOT forward from the overarching Strategic Plan to the system wide Long Range Transportation Plan, applied in the development of Corridor Visions, and the definition of Needs and potential Solutions to achieve the vision in Corridor Plans.

## PERFORMANCE BASED NEEDS

The Corridor Plan utilizes a performance based approach to needs definition. A system of performance measures is used to evaluate the corridor. The architecture of this tiered system is focused on the three Investment Categories identified in the Long Range Transportation Plan: System Preservation, Safety, and Mobility. Performance measures include both absolute and comparative targets. Absolute measures gauge progress towards long term goals, while comparative measures between corridor and system performance provide information to assist in prioritization.

A need is defined as a deviation between these targets and measured performance. The first tier of the system allows for rapid identification of need in each of the Investment Categories through a Performance Indicator. The second tier provides additional information to qualify potential causes through a set of Performance Qualifiers. GIS based Mapping Analysis tools provide for a spatial analysis of these measurements to further investigate causes and identify overlapping needs.

## TIERED APPROACH

A method to evaluate performance goals at a general level and then advance through the system/hierarchy to filter data and define needs.


## INVESTMENT <br> CATEGORY

## PERFORMANCE INDICATOR:

 These are quantifiable and repeatable measurements that reflect the overall performance of the transportation corridor being analyzed. Targets for these indicators may be absolute and indicate a desired condition or comparative to current performance of the overall system to indicate relative priority.
## PERFORMANCE QUALIFIER:

These measures include items that may contribute to the results of the indicator. These variables are measurable and actionable. They are used to qualify the need so that solution sets may be applied.

## MAPPING ANALYSIS:

Mapping the deviated performance qualifiers against several
factors to effectively prioritize, locate, and identify needs.

NEEDS DRIVEN SOLUTIONS:
Performance based needs are captured and documented. These needs remain until the separates the discussion of need from the discussion of projects, which enhances the transparency of prioritization.
From WYDOT's list of preferred remedies to specific problems, preliminary solutions sets are developed for the identified needs. Thes sets may be tailored by the specific context
of the corridor. For each of the three funding of the corridor. For each of the three funding
scenarios of the long range plan, the solution to be considered may vary and the size of the program change. A recommended program can be selected based on anticipated funding levels.



Program Alternatives ogram Alternatives
based on Funding Scenarios

## SSC 15 - CHEYENNE TO NEWCASTLE - US 85 CORRIDOR PLAN

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## I. STATE SIGNIFICANT CORRIDOR 15 - DESCRIPTION

## CORRIDOR DESCRIPTION

State Significant Corridor (SSC) 15 is 273 miles long. It follows US 85 from its intersection with I-25 north of Cheyenne to Newcastle. At Newcastle, the corridor splits to include US 16 southeast for approximately 13 miles to the Wyoming/South Dakota border as well as US 85 north to Moorcroft and its termination at I-90. SSC 15 passes through five counties along the eastern plains and crosses WYDOT Districts 1, 2, and 4. The sparse roadway network in eastern Wyoming is supported by SSC 15 , connecting smaller communities along the border, as well as the urban centers of Torrington and Cheyenne

Near Newcastle, the corridor follows the southwestern edge of the Black Hills, an important tourism and recreation destination. The economy along SSC 15 is supported primarily by agriculture and ranching. The Wyoming Women's Center, a State correctional facility, is located in Lusk; a new (2010) medium security correctional facility is located in Torrington.

Torrington, the only urban area directly on the corridor, is an agricultural center for the region's farms and ranches. Sugar beets, corn, and wheat are major products. Regular livestock auctions are held in Torrington, bringing buyers and sellers long distances.

Additional information including environmental context, key issues, and emerging trends is provided in the Corridor Visions and LRTP phases of Wyoming Connects. This Corridor Plan focuses on the identification of the corridor needs through the analysis of corridor performance.

## CORRIDOR SEGMENTS

SSC 15 has been divided into 12 planning segments. Planning segments identify generally consistent sections of the corridor for planning level analysis. The planning segments vary in length depending on the context of the corridor The corridor was segmented at all urban areas and at the intersection of other SSCs. Other context changes may include: roadway typical section (through lanes, shoulders, etc.), average daily traffic, intersecting routes, and terrain. Each segment break or endpoint was assigned as closely as possible to the nearest maintenance section endpoint; segments generally encompass multiple maintenance sections. The planning segments allow for an appropriate analysis and evaluation of corridor needs at a planning level while still providing geographic reference.

Table 1 and the accompanying map on the next page describe genera characteristics of each corridor segment



Table 1 - Segments for State Significant Corridor 15

| $\begin{aligned} & \text { n } \\ & \vdots \\ & 0.0 \\ & 0 \\ & 0.0 \\ & 0 \end{aligned}$ | Segment | $\begin{gathered} \text { ML } \\ \text { Route } \end{gathered}$ | Begin | End | Length | Description |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 15.01 | 85 | 16.94 | 43.02 | 26.08 | I- 25 to WYO 216. Features: 2-lane cross section; intersects Local Route WYO 219 and terminates at Local Route 216; road close gate; Lodgepole Creek; ranch lands; flat terrain. |
|  | 15.02 | 85 | 43.02 | 66.30 | 23.28 | WYO 216 to south of WYO 313. Features: 2-lane cross section with multiple 3-lane passing areas; intersects Local Route WYO 213, WYO 151 and terminates at Local Route WYO 313; road close gates; Little Horse Creek, Horse Creek, Bear Creek; Meriden Rest Area; ranch lands; flat terrain. |
|  | 15.03 | 85 | 63.30 | 92.02 | 25.72 | WYO 313 to Torrington. Features: 2-lane cross section; segment begins at Local Route WYO 313 and intersects Local Routes WYO 152, WYO 161, WYO 92, WYO 154, and terminates at Local Route 156; road close gates; RR at-grade crossing (2); Lone Tree Creek, irrigation canal, Springer Canal, Cherry Creek; ranch and farm lands; flat terrain. |
|  | 15.04 | 85 | 92.02 | 95.01 | 3.00 | Torrington area of urban influence (pop. 5,514). Features: multilane urban cross section with curb, gutter, sidewalks, traffic signals, pedestrian crossings; segment begins at Local Route WT 156 and intersects SSC 16 (US 26) in Torrington and Local Route WYO 159; N. Platte River; agricultural center; urban terrain. |
|  | 15.05 | 85 | 95.01 | 103.26 | 8.24 | Torrington to Lingle. Features: 5-lane cross section on US 26; intersects Local Route WYO 156; Torrington Port of Entry; Rawhide Creek; ranch lands; flat terrain. |
|  | 15.06 | 85 | 103.26 | 150.22 | 46.97 | Lingle to Lusk. Features: 2-lane cross section with occasional center passing lane; segment terminates at Regional Route US 18/20; road close gates; C\&NW grade separation; interstate canal; unnamed draw; Dry Rawhide Creek, Rawhide Creek (3), Six Mile Creek, Niobrara River; ranch lands; flat terrain. |
|  | 15.07 | 85 | 150.22 | 196.00 | 45.78 | Lusk to Mule Creek Jct. Features: 2-lane cross section; changeable message sign; road close gates; intersects Regional Route WYO 270; ranch lands and terminates at Local Route US 18; Old Woman Creek (2), Mule Creek; flat terrain. |
|  | 15.08 | 85 | 196.00 | 230.02 | 34.02 | Mule Creek Jct. to Newcastle. Features: 2-lane cross section; segment begins at Local Route US 18 and terminates at US 16 in Newcastle; road close gates; Mule Creek Rest Area; Cheyenne River, Bobcat Creek, Robbers Roost Creek; Sheep Creek, Beaver Creek; W Branch Blacktail Creek; BNSF Railway grade separation; ranch lands; flat terrain. |
|  | 15.09 | 44 | 200.00 | 226.29 | 26.29 | Moorcroft through Upton. Features: 2-lane cross section; segment begins at intersection with Regional Route US 14 in Moorcroft, intersects Local Route I-90 B, WYO 116; road close gates; E. Branch Wind Creek; Upton Rest Area; BNSF Railway parallel to route; ranch lands; rolling terrain. |
|  | 15.10 | 44 | 226.29 | 246.59 | 20.31 | Northwest of Newcastle. Features: 2-lane cross section; intersects Local Route WYO 451 and terminates at Regional Route 450; BNSF Railway parallel to route with grade separation; Pine Creek, Turner Creek, Skull Creek, Oil Creek, Alum Creek; ranch lands; rolling terrain. |
|  | 15.11 | 44 | 246.59 | 250.05 | 3.46 | Newcastle area (pop. 3,390). Features: multilane urban cross section with curb, gutter, sidewalks, traffic signals, pedestrian crossings; intersects US 16 Bypass; Newcastle Port of Entry; BNSF Railway grade separation Cambria Creek; agricultural center; urban terrain. |
|  | 15.12 | 44 | 250.05 | 259.08 | 9.03 |  |

Source: URS Windsbield Survey June 2012; Maintenance Section Reference Book 2012; Wyoming Connects: LRTP and Corridor Visions. Note: Descriptions of beginning and endpoints are approximate.

## II. EVALUATION OF CORRIDOR PERFORMANCE

This section describes the evaluation of specific corridor needs based on the performance based process defined in the IPF. The Performance Based Needs Process, shown below, illustrates the steps followed for this corridor plan. Indicative Performance measures based on existing or simply defined index measurements for each investment category of System Preservation, Safety, and Mobility were evaluated to preliminarily identify need relative to long term goals. Qualifying performance measures were evaluated to better assess contributing factors to the primary need indicators. The indicators and qualifiers were evaluated and analyzed relative to system averages and, when available, previously specified performance targets. This gap analysis identifies locations where needs specified performance targets. This gap analysis identifies locations where needs relative to the system of SSCs and available funding.

Many of the measures were established as comparisons to the system average, therefore good performance indicates performance better than the system average. The reverse is also true, poor performance indicates that performance is below the average or rated as poor for a particular indicator or qualifier. As additional corridors are evaluated, specific performance targets may be set to measure absolute performance. The IPF process recommends a mix of absolute measures to evaluate true need relative to long term goals and comparative measures to assist in determining priority.


This corridor plan evaluates System Preservation, Safety, and Mobility performance using the process described in the Integrated Planning Framework, published separately. The plan analyzes the performance of planning segments described in Table 1 as compared to system averages. It identifies good, fair, poor or less, average, more performance for each segment in an overall index and for each contributing qualifier measurement

Throughout this report, the color green is used to represent System Preservation, blue represents Safety, and yellow represents Mobility. Lighter shades represent better performance and darker shades represent worse performance compared to the system average

Table 2 summarizes the results for each performance index and qualifier for each planning segment on the corridor

Table 2 - Indicator and Qualifier Performance of SSC 15

|  | SYSTEM PRESERVATION |  |  |  |  | SAFETY |  |  |  |  |  |  |  | MOBILITY |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Segment | $\begin{gathered} \text { System } \\ \text { Preservation } \\ \text { Index } \end{gathered}$ | Ruting | Pavement Requiriement | $\begin{array}{\|l\|} \hline \begin{array}{c} \text { Pavente } \\ \text { Varinane } \\ \text { Rating } \\ \hline \end{array} \\ \hline \end{array}$ | $\begin{array}{\|l\|l} \hline \text { Bridge } \\ \text { Variance } \\ \text { Vating } \\ \hline \end{array}$ | Safety Index | $\begin{aligned} & \text { Weather } \\ & \text { Related } \\ & \text { Cashes } \end{aligned}$ | $\begin{aligned} & \text { Willilife } \\ & \text { Related } \\ & \text { Crashes } \end{aligned}$ | $\begin{aligned} & \text { Alconol } \\ & \text { Related } \\ & \text { Crashes } \end{aligned}$ | $\begin{aligned} & \text { Non-use of } \\ & \text { Sefere } \\ & \text { Restrants } \end{aligned}$ | $\begin{array}{\|l\|l\|} \hline \begin{array}{l} \text { Horizontal } \\ \text { Geometric } \\ \text { Insufficiency } \end{array} \end{array}$ | $\begin{gathered} \text { Veritial } \\ \text { Geounctic } \\ \text { Insufficiency } \end{gathered}$ | $\begin{gathered} \text { Crash } \\ \text { Concen. } \\ \text { Crations } \end{gathered}$ | Mobility <br> Index | $\begin{array}{\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|c\|} \hline \text { Ratig } \end{array}$ | Pavement <br> Variance <br> Rating (LR) | Traffic Growth | Truck Traffic Growth | $\begin{gathered} \text { Bridge } \\ \text { Variance } \\ (L / R) \\ \hline \end{gathered}$ |
| 15.01 | Average | Good | Less | Good | Less | Fair | Average | Average | Average | Average | Less | More | Fair | Average | Good | Fair | Average | Average | Less |
| 15.02 | Average | Good | Average | Good | Less | Fair | Average | Average | Average | Average | Less | Less | Fair | Better | Good | Fair | Less | Average | Less |
| 15.03 | Better | Good | Less | Good | Less | Good | Average | Average | Less | Less | Less | Less | Good | Average | Good | Poor | Less | Average | Less |
| 15.04 | Worse | Fair | Average | Poor | Less | Fair | Less | Less | More | More | Less | Less | Goo | Average | Good | Poor | Less | Average | Less |
| 15.05 | Average | Fair | More | Good | Less | Good | Average | Average | Average | Average | Average | Less | Good | Average | Good | Poor | Less | Les | Less |
| 15.06 | Average | Good | Average | Fair | Less | Fair | Average | Average | Average | Less | Less | Average | Fair | Better | Good | Good | Less | Les | Less |
| 15.07 | Better | Good | Average | Good | Less | Poor | Average | More | Less | Less | Less | Less | Good | Average | Good | Fair | Average | Average | Less |
| 15.08 | Better | Good | Less | Good | Less | Good | Average | Average | Average | Less | Less | Less | Good | Average | Good | Good | Less | Less | Less |
| 15.09 | Average | Good | Less | Good | Average | Fair | Less | Average | Average | Average | Less | Less | Good | Average | Good | Good | Less | Less | Average |
| 15.10 | Worse | Good | Less | Good | More | Poor | Less | More | More | Less | Less | Less | Poor | Better | Good | Good | Less | Less | Less |
| 15.11 | Worse | Fair | More | Poor | Average | Good | Less | Average | Less | Average | Less | Less | Good | Average | Good | Good | Average | Average | Less |
| 15.12 | Worse | Fair | Less | Fair | re | Poor | Average | More | Less | ess | Less | Less | Good | Better | Good | Fair | Average | Average | Less |



## Performance Index

The System Preservation Index is average or better across all segments, with the exception of segments
STEP 2 15.04, 15.10, 15.11, and 15.12
Performance qualifiers with a negative effect on the System Preservation Index: - The Pavement Maintenance Requirement on segment 15.05 and 15.11 is more than average.

- The Pavement Variance Rating on segment 15.04 and 15.11 is poor.
- The Bridge Variance Rating on segment 15.10 and 15.12 is poor.

Refer to the sections below for more information.

|  | SYSTEM PRESERVATION |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Segment | $\begin{array}{\|c\|} \hline \text { System } \\ \text { Preservation } \\ \text { Index } \end{array}$ | Rutting | Pavement Maint. Requirement | Pavement <br> Variance <br> Rating | $\begin{gathered} \text { Bridge } \\ \begin{array}{c} \text { Varigne } \\ \text { Rating } \end{array} \end{gathered}$ |
| 15.01 | Average | Good | Less | Good | Less |
| 15.02 | Average | Good | Average | Good | Less |
| 15.03 | Better | Good | Less | Good | Less |
| 15.04 | Worse | Fair | Average | Poor | Less |
| 15.05 | Average | Fair | More | Good | Less |
| 15.06 | Average | Good | Average | Fair | Less |
| 15.07 | Better | Good | Average | Good | Less |
| 15.08 | Better | Good | Less | Good | Less |
| 15.09 | Average | Good | Less | Good | Average |
| 15 | Worse | Good | Les | Good | Mor |
| 15.11 | Worse | Fair | More | Poor | Average |
| 15.12 | Worse | Fair | Less | Fair | More |

## Performance Qualifiers

## Rutting

There are two locations where rutting falls within the poor category: 5 miles on ML 85 between RM 52 and 57 in segment 15.02 and less than 1 mile on ML 44 between RM 246.5 and 247.25 in segment 15.11.

## Pavement Maintenance Requirements

Pavement maintenance sections recommended by the Pavement Management System (Agile Assets) and not yet selected to receive funding in the STIP will continue to decline. If not treated on the recommended schedule, treatments will become more costly as conditions deteriorate.

Approximately $4 \%$ of Corridor 15 has been identified as having a 1 S need. This represents 12 miles of pavement. Segments 15.01, 15.04, and 15.12 have 1S treatments recommended by the Pavement Management System. Based upon current available funding, one project has been selected to be completed within the next several years. It is located within Segment 15.02.

Approximately $78 \%$ of Corridor 15 has been identified as having a 2 S need. This represents 213 miles of pavement. Segments $15.01,15.02,15.03,15.06$, 15.07, 15.08, 15.09, 15.10, and 15.11 had $2 S$ treatment recommended by the Pavement Management System. Based upon current available funding seven projects, representing 46 miles of pavement, have been selected to be completed within the next several years.

Approximately $17 \%$ has been identified as having a 3 S need. This represents 46 miles of pavement. Segments $15.01,15.04,15.05,15.06$, and 15.08 had $3 S$ treatment recommended by the Pavement Management System. Based upon current available funding, only two projects, representing 24 miles of pavement, have been selected to be completed within the next several years.

## Pavement Variance Rating

The Pavement Variance Rating is fair or better for the entire corridor with the exception of poor rating on Segments 15.04 (Torrington) and 15.11 (Newcastle). Pavement hotspots, identified by length and severity, occur in Torrington, Newcastle, segment 15.01 (most or moderately severe), and in Lusk and segment 15.02 (least severe).

## Bridge Variance Rating

The Bridge Variance Rating for most of the corridor is average or better than the system average. All segments have at least one bridge. There are eight structurally deficient bridges along SSC 15, all with bridge decks under 15,000 $\mathrm{ft}^{2}$ and the lowest WYDOT severity rating. The structurally deficient bridges are in Segments 15.09 (1), 15.10 (4), 15.11 (1), and 15.12 (2), resulting in Bridge Variance Ratings of average or more when compared to the system average.

NOTE: See Appendix for maps documenting each performance qualifier.


[^0]

STEP 2

## Performance Index

The Safety Performance Index ranges from fair to poor across the corridor. Segments rated poor include 15.07, 15.10, and 15.12.

Performance qualifiers with poor performance include

- Weather Related Crashes are more than the average on segments $15.07,15.10$, and 15.12.
- Alcohol Related Crashes are more than the average on segments 15.04 and 15.10
- Non-Use of Safety Restraints is more than the average on segment 15.04 .
- Crashes on Vertical Geometric Insufficient Curves are more than the average on segment 15.01.
- Crash Concentrations are rated poor on segments 15.10

Refer to the sections below for more information.

|  | SAFETY |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Segment | Saferty Index | $\begin{aligned} & \text { Weather } \\ & \text { Related } \\ & \text { Crashes } \end{aligned}$ | $\begin{aligned} & \text { Willdifif } \\ & \text { Related } \\ & \text { Crashes } \end{aligned}$ | $\begin{aligned} & \text { Alcohol } \\ & \text { Related } \\ & \text { Crashes } \end{aligned}$ | $\begin{array}{\|l\|l\|} \hline \begin{array}{c} \text { Non-use of } \\ \text { Safety } \\ \text { Restraints } \end{array} \\ \hline \end{array}$ | Horizontal <br> Geometric <br> Insufficiency | Vertical <br> Geometric <br> Insufficiency | $\begin{aligned} & \text { Crash } \\ & \text { Concen. } \\ & \text { Crations } \end{aligned}$ |
| 15.01 | Fair | Average | Average | Average | Average | Less | More | Fair |
| 15.02 | Fair | Average | Average | Average | Average | Less | Less | Fair |
| 15.03 | Good | Average | Average | Less | Less | Less | Less | Good |
| 15.04 | Fair | Less | Less | More | More | Less | Less | Good |
| 15.05 | Good | Average | Average | Average | Average | Average | Less | Good |
| 15.06 | Fair | Average | Average | Average | Less | Less | Average | Fair |
| 15.07 | Poor | Average | More | Less | Less | Less | Less | Good |
| 15.08 | Good | Average | Average | Average | Less | Less | Less | Good |
| 15.09 | Fair | Less | Average | Average | Average | Less | Less | Good |
| 15.10 | Poor | Less | More | More | Less | Less | Less | Poor |
| 15.11 | Good | Less | Average | Less | Average | Less | Less | Good |
| 15.12 | Poor | Average | More | Less | Less | Less | Less | Good |

## Performance Qualifiers

## Weather Related Crashes

With the exception of segment 15.01, the ratio of weather related crashes to total crashes in this corridor was below the system average. Segment 15.01 had the highest rate ( $34 \%$ ) of crashes occurring during hazardous weather conditions, which were primarily snow, blowing snow, or blizzard conditions.

## Wildlife Related Crashes

Corridor 15 has a consistently high rate of accidents that involve wildlife. Segment 15.04, in Torrington, is the one exception with only $1 \%$ of accidents involving wildlife. The remaining segments are quite high, all over $35 \%$.

Segment 15.12 has the highest rate of accidents involving wildlife. The rating for this segment was $71 \%$. Wildlife crashes occur along the entire 9 -mile segment and primarily involve deer. Crashes occurred in all lighting conditions: dawn, daylight,
dusk, and darkness. Noticeably higher concentrations occurred near RM 253 and 254. There is no direct correlation with migration routes documented by the Wyoming Game and Fish Department.

## Alcohol Related Crashes

The percentage of alcohol related crashes varies throughout the corridor, with most of the corridor segments being at or below the system average. Segments 15.11 and 15.12 did not have any alcohol related crashes. However, segment 15.04, in Torrington, had a higher rate of alcohol related crashes, and segment 15.10, between Upton and Newcastle, had the highest rate of alcohol related crashes, more than three times the system average. The locations were concentrated near RM 238 and 239.

## Non-use of Safety Restraint

The ratio of crashes in which a restraint device was not worn to total crashes varie within SSC 15 from below the system average to higher than the system average. The highest percentage of crashes in which seat belts were not worn occurred in segment 15.04. In this segment, $80 \%$ of crashes had at least one occupant who was not wearing a safety restraint.

## Horizontal Geometry Insufficiency

Corridor 15 has three horizontal alignments that were found to be insufficient based on the associated posted speed and an assumed emax of $8 \%$. The horizontal alignment insufficiency was calculated along ML 85 at route markers 102.9, 132.1 and 143.6. Two crashes were recorded at the horizontal insufficiency at route marke 102.9, there were no crashes at the other two locations.

Further study will need to take place at route marker 102.9 to determine specific needs of each alignment and the constraints to which it was designed and built. Th data is not clear if the crashes were directly related to geometry. However, locations with several accidents should be further studied.
Table 4 - Horizontal Geometry Insufficiency

| Segment | ML Route | Route Marker | \# of Crashes |
| :---: | :---: | :---: | :---: |
| 15.05 | ML85 | 102.86 | 2 |

## Vertical Geometry Insufficiency

Several vertical alignments were found to be insufficient based on the associated posted speed and the length of the curve for stopping sight distance. Segment 15.01 has the most insufficient vertical alignments within the corridor. Most locations had 0 to 1 crashes near an area of vertical concern. Further study is required to determine specific needs of each alignment and the constraints to which it was designed and built

Within segment 15.01 there was one location that had 2 crashes near a reported vertical deficiency at RM 31.5 on ML85. The data is not clear if the crash was directly related to the geometry. However, this location should be further studied. Because of the low number of crashes and funding constraints, careful consideration should be taken to find locations where there are many crashes that can be attributed to poor roadway geometry.

Table 5 - Vertical Geometry Insufficiency

| Segment | ML Route | Route Marker | Curve Type | \# of Crashes |
| :---: | :---: | :---: | :---: | :---: |
| 15.01 | ML85 | 31.48 | SAG | 2 |

## Crash Concentrations

Crash concentrations are identified by locating spatially significant clusters of individual crash events that are of a similar severity level. The concentrations fall into one of two severity types: Critical, which consists of only "Critical" level crashes, and Other, which consists of "Severe" and "Damage" level crashes.

There are five Critical concentrations on Corridor 15, which are listed in Table 6. Additionally, there is one Other type concentration. Segment 15.10 through Torrington exhibits the most crash concentrations with 2 Critical concentrations, which occur between RM 241 and 242 and RM 237.5 and 238.3.

Table 6-Critical Crash Concentrations

| Segment | ML Route | Route Marker |  |
| :---: | :---: | :---: | :---: |
|  |  | From | To |
| 15.01 | ML85 | 36.8 | 37.7 |
| 15.02 | ML85 | 61.25 | 61.7 |
| 15.06 | ML85 | 112 | 113.3 |
| 15.10 | ML85 | 241 | 242 |
| 15.10 | ML85 | 237.5 | 238.3 |

NOTE: See Appendix for maps documenting each performance qualifier.



[^1]|  |  |
| :--- | :--- |

STEP 2 The Mobility Performance Index for SSC 15 ranges from

|  | MOBILITY |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Segment | Mobility Index | Volume to Capacity Rating | Pavement <br> Variance <br> Rating (L/R) | Traffic Growth | Truck Traffic Growth | $\begin{gathered} \text { Bridge } \\ \text { Variance } \end{gathered}$ (LLR) |
| 15.01 | Average | Good | Fair | Average | Average | Less |
| 15.02 | Better | Good | Fair | Less | Average | Less |
| 15.03 | Average | Good | Poor | Less | Average | Less |
| 15.04 | Average | Good | Poor | Less | Average | Less |
| 15.05 | Average | Good | Poor | Less | Less | Less |
| 15.06 | Better | Good | Good | Less | Less | Less |
| 15.07 | Average | Good | Fair | Average | Average | Less |
| 15.08 | Average | Good | Good | Les | Less | Less |
| 15.09 | Average | Good | Good | Less | Less | Average |
| 15.10 | Better | Good | Good | Less | Less | Less |
| 15.11 | Average | Good | Good | Average | Average | Less |
| 15.12 | Better | Good | Fair | Average | Average | Less |

Five regional routes connect to SSC 15 . The condition of each local and regional route is associated with a planning segment and directly influences the mobility of that segment. The condition of several local and regional routes is poor. There are currently two structurally deficient bridges on the local and regional routes.

SSC 15 is subject to heavy loads associated with of all the energy development in the area, as well as agricultural products equipment, and stock movement. This route fulfills an important function of connecting the smaller communities along the border with each other as well as the urban centers of Torrington and Cheyenne.

Numerous field observations of 2 ' shoulder widths with rumble strips were noted as well as occasional narrower shoulders. This is only adequate for low volume highways. While most of this corridor has low traffic volumes, the minimal shoulder width does not provide adequate width for safe refuge for disabled vehicles.

Table 7 - Major Traffic Generators

## Employment centers - Torrington, Newcastle

Energy industry truck traffic - gas/oil/wind
Agriculture/ranching - farm to market transport
Dispersed localregional recreation on public lands - Thunder Basin National Grassland and Black Hills National Forest
Correctional Facility - Lusk and Torrington

## Performance Qualifiers

## Volume to Capacity Rating

The Volume to Capacity Rating reflects mobility and the quality of travel on a corridor or segment. It compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). The volume to capacity rating for the entire SSC 15 is good.

## Traffic Growth

The average traffic growth within the SSC System is $1.42 \%$. The majority of segments in this corridor are below this average. Segment 15.12 has the highest average annual traffic growth rate. This segment connects the eastern limits of Newcastle to the South Dakota state line on ML44.
Table 8 - Traffic Growth

| Segment | AADT 2010 | Average 20 Year Growth |
| :---: | :---: | :---: |
| 15.01 | 1,781 | $1.05 \%$ |
| 15.02 | 1,718 | $0.90 \%$ |
| 15.03 | 1,982 | $0.86 \%$ |
| 15.04 | 8,504 | $0.80 \%$ |
| 15.05 | 4,462 | $0.81 \%$ |
| 15.06 | 957 | $0.69 \%$ |
| 15.07 | 1,955 | $1.13 \%$ |
| 15.08 | 848 | $0.36 \%$ |
| 15.09 | 1,477 | $0.68 \%$ |
| 15.10 | 1,616 | $0.65 \%$ |
| 15.11 | 3,021 | $1.25 \%$ |
| 15.12 | 1,753 | $1.77 \%$ |

## Truck Traffic Growth

The average truck traffic growth within the system is $1.34 \%$. All segments of SSC 15 are below this average. The majority of the corridor is a 2 -lane rural roadway classification. Segment 15.07 has the highest average annual truck growth rate. Thi segment is from Lusk north to Mule Creek Junction via ML85.
Table 9 - Truck Traffic Growth
Table 9 - Truck Traffic Growth

| Segment | AADTT 2010 | $\%$ Trucks 2010 | Truck Traffic Growth |
| :---: | :---: | :---: | :---: |
| 15.01 | 267 | $16.14 \%$ | $1.03 \%$ |
| 15.02 | 234 | $14.71 \%$ | $0.71 \%$ |
| 15.03 | 332 | $15.99 \%$ | $1.01 \%$ |
| 15.04 | 622 | $7.16 \%$ | $0.67 \%$ |
| 15.05 | 510 | $11.92 \%$ | $0.23 \%$ |
| 15.06 | 168 | $14.86 \%$ | $-0.70 \%$ |
| 15.07 | 345 | $18.46 \%$ | $1.22 \%$ |
| 15.08 | 140 | $15.95 \%$ | $-0.28 \%$ |
| 15.09 | 178 | $10.97 \%$ | $0.11 \%$ |


| 15.10 | 219 | $14.58 \%$ | $0.06 \%$ |
| :---: | :---: | :---: | :---: |
| 15.11 | 403 | $17.49 \%$ | $1.02 \%$ |
| 15.12 | 187 | $10.69 \%$ | $0.95 \%$ |

## Local and Regional Roads

Local and Regional Routes that connect to the SSC affect the Mobility Performance Indicator. These routes serve the important function of connecting rural areas to the primary routes. While traffic volumes are typically low on these secondary routes, maintaining them in acceptable condition is important to general mobility for the state. This analysis includes pavement and bridge condition as qualifiers.

## Local and Regional Roads Impacting Pavement Variance Rating (L/R)

The Mobility Index may be affected by local and regional routes that have poor pavement condition as reflected by the Pavement Variance Rating (PVR). The PVR is the product of Pavement Sufficiency Rating (PSR) calculated as the deviation from the system average. Poor PSR is reported on local/regional routes associated with segments $15.03,15.04,15.05$, and 15.07 . Table 10 lists the local/regional routes with poor PSR.

Table 10 - Local/Regional Routes with Poor PSR

| Segment | Average PVR | ML Route | Route Marker |  | Average PSR |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | End |  |  |
| 15.03 | 1.12 | ML153 | 0.00 | 1.02 | 2.13 |
| 15.03 | 1.32 | ML1602 | 108.84 | 130.20 | 1.93 |
| 15.03 | 2.05 | ML802 | 0.00 | 8.02 | 1.20 |
| 15.03 | 1.44 | ML807 | 0.00 | 14.07 | 1.81 |
| 15.03 | 1.01 | ML811 | 0.00 | 7.03 | 2.24 |
| 15.04 | 1.54 | ML805 | 0.00 | 14.28 | 1.71 |
| 15.04 | 0.79 | ML808 | 0.45 | 12.78 | 2.46 |
| 15.05 | 1.54 | ML805 | 0.00 | 14.28 | 1.71 |
| 15.07 | 1.34 | ML39 | 41.73 | 63.24 | 1.91 |

## Bridge Variance Rating (L/R)

The bridge variance rating for local and regional routes on SSC 15 shows 2 structurally deficient bridges. The locations of the bridges are shown in the table below.
Table 11-SSC 15 Structurally Deficient Bridges on Local/Regional Routes

| Segment | ML Route | Route Marker |
| :---: | :---: | :---: |
| 15.09 | ML600 | 12.79 |
| 15.09 | ML2302 | 25.76 |

NOTE: See Appendix for maps documenting each performance qualifier.


System Preservation Index - Average, with Averas or better performance across all performance of medium severity; pavement proiects hore scheduled on the segment in 2015 and 2017. Safety Index - Fair, with Average or better
performance across all performance performance across all performance qualifiers
There are 80 total crashes reported during There are 80 total crashes reported during
the 5 -year planning period, with 55 injuries and 1 fatality. A curve with insufficient vertical sag occurs at RM 31.48. The number of crashes ( $8.75 \%$ ) on a a segment with a vertical
geometric insufficiency is significhantly higher geometric insufficiency is significantiy highe
than the corridor average ( $0.89 \%$ ) and the statewide average $(3.53 \%)$. There is one area of concentrated crashes (RM 37).
Mobility Index - Average, with Average or better performance across all performance with $16 \%$ Trucks.

15.02 WYO 216 to South of WYO 313 -System Preservation Index - Average, with performance qualifiers. There is one short pavement hotspot of less severity; a pavement project is scheduled on the segment in 2014. - Safety Index - Fair, with Average or better performance acoss ache nance qualifiers.
There are 105 total crashes reported during the 5 -year planning period, with 52 injuries and 1 fatality. An area of crash concentrations is reported in 1 location (RM 61 )
Mobility Index - Average, with Average or better performance across all performance qualifiers.
The segment reports AADT 1,718 with $15 \%$ The segn
Trucks.

STEP 3: ANALYSIS OF PLANNING SEGMENT NEEDS

### 15.03 WYO 313 to Torrington

 - System Preservation Index - Average, with Average or better perfoperformance qualifiers.
performance qualifiers. Safety Index - Good, with Average or better performance across all performance qualifiers.
There are 88 total crashes reported during the 5 -year planning period, with 25 injuries and 0 fatalities.
Mobility Index - Average, with Average or better performance across all performance qualifiers. The segment reports AADT 1,982 with $16 \%$
Trucks. Poor pavement PVR (1.05) on local/ regional routes is reported compared to system Fair PVR (0.26-0.76).

### 15.06 Lingle to Lusk

System Preservation Index - Average, with Average or better performance across all scheduled for 2017.
Safety Index - Fair, with Average or better performance across all performance qualifiers. There are 80 total crashes reported during the
5 -year planning period, with 107 injuries and 0 fatalities. One area of crash concentrations is reported (RM 113).

- Mobiility Index - Average, with Average or better performance across all performance qualifiers.
The segment reports AADT 957 with $15 \%$ Truck.
15.08 Mule Creek Jct. to Newcastle - System Preservation Index - Better than average, with Average or better performance across all performance qualifiers.
- Safety Index - Good, with
- Safety Index - Good, with Average or better performance across all performance qualifiers. There are 52 total crashes reported during the fatality.
- Mobility Index - Average, with Average or better performance across all performance qualifiers The segment reports AADT 848 with $16 \%$ Trucks.



### 15.10 Northwest of Newcastle

- System Preservation Index - Average, with 4 structurally deficient bridges Safety Index - Poor, with Poor performance life- and alcohol-related crashes. There are 104 total crashes reported during the 5 -year planning period, with 44 injuries and 3 fatalities. Approximately $51 \%$ involved a crash with an animal (system average 31\%) and $15 \%$
involved alcohol (system average 5\%). Two crash concentrations are reported (RM 238 and RM 241).
- Mobility Index - Average, with Average or better performance across all performance qualifier The seg
Trucks.


### 15.09 Moorcroft through Upton

- System Preservation Index - Worse than Average, with one structurally deficient brid Safety Index - Fair, with Average or better performance across all performance qualifiers,
There are 29 total crashes reported during the 5 -year planning period, with 19 injuries and 0 fatalities.
Mobility Index - Average, with Average or better performance across all performance qualifie Trucks.



### 15.05 Torrington to Lingle

- System Preservation Index - Average, with mor
pavement maintenance requirement (40.00) pavement maintenance requirement (40.00)
significantly higher than system average (13.14)
Safty Safety Index - Good, with Average or better performance across all performance qualifiers.
There are 66 total crashes reported during the 5 -year planning period, with 16 injuries and 0 fatalities. The number of crashes ( $3 \%$ ) on a segment with a horizontal geometric insufficien (ML85B at RM 102.857) is below the system
average ( $6 \%$ ). One area of crash concentration is reported (RM 101).
- Mobility Index - Average, with Average or better performance across all performance qualifiers. The segment reports AADT 4,462 with $12 \%$ Trucks. Poor PVR (1.54) on local/regional routes
is reported compared to the system Fair PVR (0.26-0.76).
- System Preservation Index - Worse than Aver (1.11) compared to the system average ( 0.09 0.75 ), with 3 pavement hotspots, 2 moderate/ 1 segment in 2016.
- Safety Index - Fair, with Poor performance in 2 qualifiers, alcohol related crashes and non-use of safety restraints. There are 82 total crashes injuries and 0 fatalities. Approximately $9 \%$ involved alcohol (system average $4.6 \%$ ) and $80 \%$ non-use or safety restraints (system average $63 \%$ ). - Mobility Index - Average, with Average or better performance across all performance qualifiers. The
segment reports AADT 8,504 with $7 \%$ Trucks. Poor $\operatorname{PVR}$ (1.20) is reported on local/regional routes compared to the system Fair PVR ( $0.26-0.76$ ).


### 15.07 Lusk to Mule Creek Jct.

System Preservation Index - Better than Average, with Average or better performance across all performance qualifiers. A pavement project was completed in 2010 involving will life related crashes. There are 130 total crashes reported during the 5 -year planning period, with 31 injuries and 9 fatalities. Approximately 53 finvived a crash with animal (system average 31\%.
Mobifty Index - Average, with Average or better performance across all performance qualifiers.
The segment reports AADT 1,955 with $18 \%$ Trucks.

### 15.12 Newcastle to State Line

 - System Preservation Index - Worse than Average, with below average pavement and 2 structurally deficient bridges.- Safety Index - Poor, with Poor performance crashes reported during the 5 -yeare pandal Crashes reported during the 5 -year planning
period, with 22 injuries and 0 fatalities. Approximately $71 \%$ involved a crash with nimal (system average 31\%. - Mobility Index - Average, with Average or better performance across all performance qualifiers.
The seg Trucks.


### 15.11 Newcastle Area

- System Preservation Index - Worse than Average, significantly exceeding the system average (13.14). The segment reports 3 pavement hotspots, and 1 structurally deficient bridge. Safety Index - Good, with Average or better performance across all performance qualifiers.
There are 16 total crashes reported during the 5 -year planning period, with 4 injuries and 0 fatalities.
Mobility Index - Average, with Average or better performance across all performance qualifiers The segment reports AADT 3,021 with $16 \%$ is reported compared to the system Fair PVR (0.26-0.76).

CORRIDOR 15

## Environmental Overview

The Wyoming Interagency Spatial Database and Online Management System (WISDOM) was queried to identify natural resources that could be impacted by transportation projects. The following summary lists the general type of potentially impacted resources. The project development phase should investigate these resources in more detail to determine if mitigation activities are required. Please see Appendix and http://wisdom.wygisc.org/ for detailed information.

There are six different terrestrial habitat types located throughout the seven special management areas within SSC 15. Six federally listed species within the corridor fall into one of three categories, candidate, endangered, and threatened. Three big game species and fifteen rapto species are found in SSC 15. There are three different categories that fall under the aquatic habitat There are twenty-one watersheds, three aquatic crucial priority areas, and one combined crucial priority area. See Table 12 for general locations.

Table 12 - Environmental Considerations

| Category | $\begin{gathered} \text { SOUTH } \\ (1-25-\text { Lingle }) \end{gathered}$ | $\begin{gathered} \text { CENTRAL } \\ \text { (Lingle }- \text { Newcastle) } \end{gathered}$ | NORTH <br> (Newcastle - Moorcroft) |
| :---: | :---: | :---: | :---: |
| Big Game Crucial Range | na | Mule Deer | Mule Deer White-tailed Deer |
| Big Game Migration Route | Pronghorn Antelope | na | na |
| WGFD Aquatic Crucial Priority Areas SHP | Lower Lodgepole \& Muddy Creeks | Niobrara Prairie Stream \& Riparian Corridors | na |
| WGFD Terrestrial Crucial Priority Areas SHP | Shortgrass Prairie | South Black Hills | Newcastle <br> Sagebrush-Mixed Grass Habitats within Major SageGrouse Complexes South Black Hills |
| WGFD Combined Crucial Priority Areas SHP | Goshen Hole \& Lower Horse Creek | na | na |
| Occurrence \& Distribution (Federally Listed Species) | Colorado Butterfly Plant Greater Sage Grouse Ute ladies' tresses Whooping Crane Yellow-billed Cuckoo | Black-footed Ferret Greater Sage Grouse | Greater Sage Grouse |



## Summary of Needs

This section summarizes needs by planning segment for each of the three performance indicators and the supporting performance qualifiers. The summary identifies overlapping needs, which provides guidance in the efficient prioritizatio of projects to best address deficiencies. The practice of completing projects that simultaneously address multiple needs may present cost savings as well as being most effective in improving performance indexes across the system. The summary also lists other needs in each of the three performance measurement areas. For more information about needs at the corridor level, see the maps in the appendix which compare both system level and corridor level needs.

SSC 15 needs occur in several categories: pavement condition of Local/Regional routes, mostly in the Newcastle area, plus pavement condition on the main route in Newcastle and Moorcroft; structurally deficient bridges on US 16; wildlife/vehicle crashes on US 85 north of Lusk and on US 16 in the Newcastle area; alcohol related crashes in Torrington and northwest of Newcastle along US 16; critical crashes associated with the non-use of safety restraints in Torrington; and an insufficient vertical curve associated with an area of crash concentrations north of Cheyenne.

Several environmental factors should also be considered when conducting project level planning, including a Pronghorn migration route on the southern part of the corridor and crucial Deer range in the central and northern parts of the corridor. Greater Sage Grouse are noted throughout the corridor

Based on the needs identified in this analysis and the recommended strategies and solution sets, there is no corridor wide need to preserve or acquire additional rights of way to accommodate needed improvements. Local and specific ROW requirements based needs within the urban areas of Torrington and Newcastle should be evaluated in the Urban Areas Corridor Plan and in cooperation with local governments and planning organizations.

## Overlapping Needs

Overlapping needs are identified on five segments:
(1) 15.01 - SAFETY: Insufficient Vertical Curve, Crash Concentrations
(2) 15.04-SYSTEM PRESERVATION/SAFETY/MOBILITY: System Preservation Index, Pavement Hotspots, Pavement Variance Rating, Alcohol Related Crashes, Non-use of Safety Restraints, Pavement Variance Rating on Local/Regional Routes
15.10 - SYSTEM PRESERVATION/SAFETY: Structurally Deficient Bridges (4), Wildlife Related Crashes, Alcohol Related Crashes, Critical Crash Concentrations (2)
5.11 - SYSTEM PRESERVATION: System Preservation Index, Pavement Maintenance Requirement and Pavement Variance Rating, Structurally Deficient Bridge (1)
5.12 - SYSTEM PRESERVATION/SAFETY: Structurally Deficient Bridges, Wildlife Related Crashes

## Other Performance Index Needs

## System Preservation

(6) 15.09-Structurally Deficient Bridge

## Safety

(7) 15.02-Crash Concentration

8 15.06-Crash Concentration

## Mobility

(9) 15.03-Pavement Variance Rating on Local/Regional Routes
(10) 15.05 - Pavement Variance Rating on Local/Regional Routes
(11) ML600B - Structurally Deficient Bridges on Local/Regional Routes
(12) ML2302B - Structurally Deficient Bridges on Local/Regional Routes

## ill. SOLUTION SETS

A solutions menu was created to address the needs identified in the previous sections. This menu identifies potential solution strategies grouped by performance measure categories. The strategies are a preliminary list based on industry accepted approaches and the efforts to date of WYDOT programs to document preferred approaches. This list is not intended to be all-inclusive, but represents types of improvements that may be employed to address documented needs.

Section IV recommends how the solution sets may be efficiently grouped depending on funding availability.

## Table 13 - Recommended Solution Sets to Improve Performance in Each Index



## IV. RECOMMENDATIONS

This section describes recommendations for strategies and priorities to address corridor needs. The selected strategies address the needs described in previous sections and are organized by the three strategic performance areas: System Preservation, Safety, and Mobility. These recommendations provide information and guidance consistent with the Strategic and Long Range Plans to help WYDOT select projects in coordination with the STIP process.

The recommended strategies have been packaged into solution sets that recognize the inherent overlap that investments may have across performance areas. For example, an intersection improvement may simultaneously improve traffic flow (Mobility) and reduce crashes (Safety).

The solution sets are tiered to the three Funding Scenarios identified in the Long Range Transportation Plan. The funding scenarios describe a progressively increasing budget, with generally defined allocations to System Preservation, Safety, and Mobility. With each succeeding level of investment, additional funding is allocated to address shortfalls in performance-based goals.

- Funding Scenario 1 - The continuation of program funding at current levels. Most funding is directed to System Preservation needs. System characteristics are expected to decline with inflation and increasing construction costs over time. Few major projects to address Safety, other than with specially restricted and allocated funds, or Mobility would be implemented.
Funding Scenario 2 - Funding over and above the base level would allow additional investments in pavement and bridge projects to meet WYDOT goals.
- Funding Scenario 3 - Additional funding over and above Scenario 2 would allow

WYDOT to maintain and improve existing conditions, achieve pavement and bridge condition goals, plus invest in major projects to improve Mobility.

## Funding Scenario 1

Funding Scenario 1, defined as the continuation of current program funding, is focused primarily on addressing System Preservation needs through preventive maintenance efforts. For this corridor, the plan recommends that these funds remain allocated to preventive maintenance, along with reserving a portion to address identified safety needs. Safety needs include specific wildlife-related crash prone areas and some geometric insufficiencies. These needs may be only partially met under current funding and should be focused on areas with documented overlapping needs. Additional needs that cannot be met under Scenario 1 may be delayed pending additional funds under Scenarios 2 or 3

- Minor surface treatments on the SSC mainline, including mill and overlay.
- Minor surface treatments on local and regional routes to extend service life.
- Bridge rehabilitation and replacement of structurally deficient bridges on the SSC mainline
- Bridge rehabilitation on structurally deficient bridges on local and regional routes. - Minor projects to improve safety not involving major construction, such as signage, right-of-way work, and law enforcement.


## Funding Scenario 2

If sufficient funds to preserve the system in at least its current operational form are made available, WYDOT will direct funding to strengthen pavement and bridge conditions

Table 14-SSC 15 Recommended Strategies for Long Range Plan Funding Scenarios

LEGEND
Funding Scenario 3

Funding Scenario 2

| Preventive |  | Local/Regional Roads |
| :---: | :---: | :---: |
| Maintenance (1S) |  |  |
| (2) 4) |  |  |
| Pavement |  | Roads <br> Pavement Rehab |
| Rehabilitation (2S) |  | (2S) <br> Mill \& Overlay (9) (10) (11) |
| (2) 4) |  |  |
| Vertical CurveDeficiency |  | Bridge Rehab/ |
|  | Traffic <br> Improvements |  |
| Rumble Strips | Tmprovements ${ }_{\text {Torrington/ }}$ | Reconstruction |
| Lighting | Newcastle | ${ }_{\text {Channel }}$ |
| (1) | (3) 4 | (9) (10) (11) |

Pavement Maintenance (L/R)
2)
Minor Bridge Maintenance (L/R)
(9) (10) (11) (12)

Wildlife Related Fencing
Signage
Media Campaigns Safety Restrain
Alcohol (3) Alcohol (3)


Wildlife Related
Bridge/underpass
${ }_{\text {ITS }}^{\text {Animal }}$
Rumble Strip
(3)
across the system, including on local and regional routes. SSC 15 has significant needs on local and regional routes in pavement and bridge conditions. This scenario would allow investments to fully chieve WYDOT goals in the System Preservation investment category.
tegory
Preventive maintenance could be deferred and/or advanced, depending on life cycle, as recommended by the Pavement Management System.

- Reconstruction (2S) to address geometric insufficiencies.
- Improvement of pavement condition of Local and Regional

Routes, to include preventive maintenance or mill and overla

- Bridge rehabilitation on structurally deficient bridges on loca
and regional routes
- Minor projects to improve safety not involving major construction, such as rumble strips, lighted signage, fencing, and media campaigns.


## Funding Scenario 3

If additional funds are made available to WYDOT under Funding Scenario 3, opportunities would be created to address all three investment categories, thus preserving the investment and improving the overall "health" of the system. Additional funds allow project
would expand to include other items to improve performance in the Mobility Inde

- Roadway reconstruction (3S) to meet long term goals, including correction of geometric deficiencies.
- Roadway widening (3S), including shoulders, to better address truck traffic.
- Turn lanes, passing lanes, and other auxiliary lanes to address spot congestion and safety issues. - Roadway reconstruction to address deficiencies in Torrington and Newcastle.
- Intersection and signalization improvements in Torrington and Newcastle.
- Intelligent Transportation Systems (ITS) to address safety problems in areas with identified poor performance including advanced animal detection systems, alcohol use, and safety restraints.
Wildlife underpasses or overpasses in high crash locations to enhance safety of motorists and limit impacts on migration routes or critical habitat areas.


## Performance Measurement over Time

As these performance measures are continually monitored over time it will become evident how the recommended solution strategies and the selected projects address the needs of the corridor and the verall system. Addressing deficiencies documented in the corridor plan will effectively improve the System Preservation, Safety, and Mobility indexes at both the corridor and system level.

Ongoing performance measure documentation is critical to identify trends, capture the existing health of the system, and allowing an accurate forecast of the future health of Wyoming's Transportation system. The need for additional funding and/or more aggressive solutions will become evident if performance measures fail to meet WYDOT goals.

## REALIZING THE CORRIDOR VISION

As part of the statewide Wyoming Connects and Long Range Transportation Plan, the Corridor Vision for SSC 15 - and all SSCs - focuses on the identification of overall system performance aggregated from the evaluations of each individual corridor's "health" relative to WYDOT's long-term Strategic Goals. The identified types of investment needs (system preservation, safety, and mobility) expressed in the Corridor Vision are reflected in the three primary need indicators of this Corridor Plan. The analysis of each investment type generated goals representing corridor health issues as communicated by the planning and public process used in development of the Vision. See Wyoming Connects: Corridor Visions for more information.

## Corridor Vision Goals

The Cheyenne to Newcastle Corridor Vision captured Key Issues and Emerging Trends of critical importance and how SSC 15 could best serve the communities it connects over the long term. While issues were identified relative to each investment type, the Primary Investment Type is System Preservation:


The primary need for the corridor is to maintain the existing gystem in terms of roadway pavement conditions and deficient bridges. In specific spot locations througbout the corridor, passing lanes may need to be added to accommodate the combination of increasing truck traffic, commuter traffos a trou for and safety.

Additional goals which reflect the full context, character, and issues of SSC 15 were set as high priority goals as indicated in Table 15. A review of these Vision Goals compared to the findings of this Corridor Plan provides for a conformance check and identifies additional issues to be considered when evaluating potential projects and implementation plans.

Table 15-Review of Corridor Vision Goals and Other Considerations

| Corridor Visions |  | High Priority | Other Considerations |
| :---: | :---: | :---: | :---: |
| Investment Category | Goal |  |  |
| System Preservation | Preserve the existing transportation system | $\checkmark$ | The corridor vision identifies System Preservation as the primary required investment type. The corridor plan focus on pavement condition and structurally deficient bridges confirms this direction and will help improve the System Preservation Index. Pavement in Torrington and Newcastle is identified as in poor condition; opportunities exist to implement improvements with overlapping safety and bridge deficiencies. |
|  | Support farm to market economic sustainability |  | By addressing system condition needs, including on Local and Regional Routes, the corridor plan will help support all market sectors that rely on highway transport. |
| Safety | Reduce fatalities, injuries, and property damage crash rate | $\checkmark$ | The corridor plan identifies a series of safety deficiencies and crash concentrations. Implementing minor improvements, depending on funding availability will help address a large number of critical crashes. The primary issues include wildlife/vehicle crashes, alcohol use, failure to use safety restraints, and roadway geometry. |
| Mobility | Improve public transportation opportunities |  | While not a high priority in the corridor vision, improved public transportation could lesson deterioration on roads, especially in Newcastle and Torrington. Improved public transportation would also improve mobility of those without access to private vehicles, the elderly, and the physically impaired. |

## CORRIDOR PERFORMANCE

Table 16 shows SSC 15 corridor performance compared to the system. The center of each chart indicates the value of the performance index, with each section indicating the performance qualifier for each measure.
Table 16-Corridor Performance


## Coordination with System Priorities

The corridor comparison can be used to help assign a priority level to entire corridors, if conditions warrant. The Corridor Plans - Executive Summary is published under separate cover and provides an overview of corridor comparisons. The summary identifies areas of greatest need within all performance indexes and for performance qualifiers across the state system. By addressing these areas of greatest need, whether by program, corridor, or corridor segment WYDOT will ensure positive changes in reported conditions throughout Wyoming.


[^0]:    SSC 15 Cbyerne to Nevoastle US 85

[^1]:    SSC 15 Cheerne to Newarastle US 85

