



VAN BUREN COUNTY ROAD COMMISSION



TRANSPORTATION ASSET MANAGEMENT PLAN 2023-2027



WELCOME

Roads are a foundation for any civilization. Without a good road network, commerce cannot move, ideas cannot be exchanged, and people cannot interact. Every great civilization first created a road system to move their armies, to expand their empires, and engage in commerce. Today, roads are more important than ever. Sixty years ago, most people lived and worked in the same community and families had only one vehicle. Today, it is not unheard of for people to have a thirty to forty-minute commute and every one of driving age to have their own vehicle. All this added traffic has placed an increased stress load on roads built to older specifications.

Not only must roads be built, they must also be maintained. The American Society of Civil Engineers has rated the infrastructure in America a "D". Roads were built without funding to maintain them. America focused on expansion and building new roads. Responsibility to

maintain roads was designated to the local communities without the tools to raise funds to maintain the road system. Revenues allocated for road maintenance and improvement have increased slightly while costs have dramatically increased.

This Asset Management Plan is the tool used to determine where to spend funds to maintain and improve the road system throughout Van Buren County. The basic criteria for these decisions are traffic counts, connectivity, PASER road ratings, and available funding sources. We work with our transportation partners to serve Van Buren County as efficiently as we can.



Daniel Bishop
Managing Director



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ACRONYMS

Act 51:	Michigan Public Act 51 of 1951
CPM:	Capital Preventative Maintenance
FAST Act:	Fixing America's Surface Transportation Act
FY:	Fiscal Year
HMA:	Hot Mix Asphalt
IBR:	Inventory Based Rating
MAP-21:	Moving Ahead for Progress in the 21st Century Act
MDOT:	Michigan Department of Transportation
MTF:	Michigan Transportation Fund
NBI:	National Bridge Inventory
NBIS:	National Bridge Inventory Standards
PASER:	Pavement Surface and Evaluation Rating
RTF:	Rural Task Force
STF:	State Trunkline Fund
TAMC:	Transportation Asset Management Council
TAMP:	Transportation Asset Management Plan
VBCRC:	Van Buren County Road Commission
FHWA:	Federal Highway Administration
PPM:	Pavement Preventative Maintenance
NHS:	National Highway System
NCPP:	National Center for Pavement Preservation
R&R:	Reconstruction and Rehabilitation



INTRODUCTION

In 2002, the Michigan Legislature created the Transportation Asset Management Council (TAMC). The TAMC developed a statewide asset management practice for asphalt and gravel road surfaces and bridge structures across state and local jurisdictions. Tools and methodologies were developed for data collection and analysis.

Asset management is a process that uses data to manage and track assets, such as roads and bridges, in a cost-effective manner using a combination of engineering and business principles. The Van Buren County Road Commission utilizes four engineering and business principles in the development of this Transportation Asset Management Plan (TAMP):

surface ratings, traffic counts, connectivity routes, and available funding and budget. Collectively these principles provide investment on the routes that provide the greatest impact on the road network.

This TAMP describes the steps of the asset management process by which the Van Buren County Road Commission makes its project decisions. It also includes inventory and condition information, a description of performance goals and outcomes, analyzes risk management contingency plans, and outlines a financial plan. Finally, this TAMP includes a 5-year plan, estimating future costs and budgets.



ASSET INVENTORY

Building a mile of new road can cost over \$1 million due to the necessary materials and equipment. The high cost of constructing road assets underlines the critical nature of properly managing and maintaining the investments made in this vital infrastructure. The specific needs of each road segment within our overall road network is a complex assessment, especially when considering rapidly changing conditions and the varying requirements of road users; understanding each road-segment's needs is an essential duty of the road commission.

In Michigan, many different governmental units (or agencies) own and maintain roads, so it can be difficult for the public to understand who is responsible for items such as planning and funding construction projects, patching, repairs, traffic control, safety, and winter maintenance for any given road.

- MDOT is responsible for state trunkline roads, which are typically named with “M”, “I”, or “US” designations regardless of their geographic location in Michigan.
- Cities and villages are typically responsible for all public roads within their geographic boundary with the exception of the previously mentioned state trunkline roads managed by MDOT.
- County road commissions (or departments) are typically responsible for all public roads within the county’s geographic boundary, with the exception of those managed by cities, villages, and MDOT.

In cases where non-MDOT roads fall along jurisdictional borders, local and intergovernmental agreements dictate ownership and maintenance responsibility. Also, road agencies may mutually agree to coordinate maintenance activities in order to create



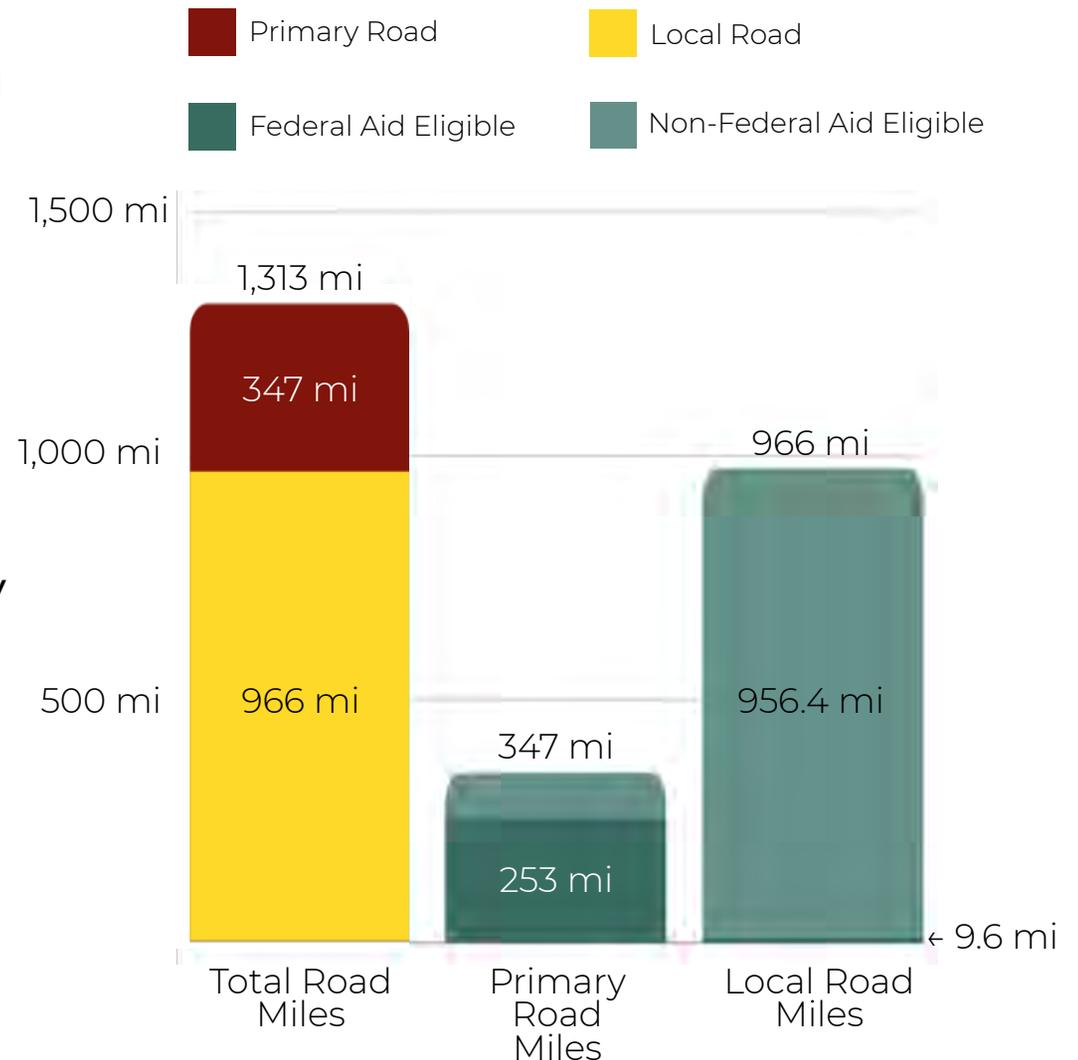
economies of scale and take advantage of those efficiencies.

Michigan Public Act 51 of 1951 (ACT 51), defines how funds from the Michigan Transportation Fund (MTF) are distributed to and spent by road-owning agencies. Act 51 classifies roads within VBCRC's jurisdiction as either county primary or county local roads. State statute prioritizes expenditures on the county's primary road network.

The Van Buren County Road Commission (VBCRC) is responsible for 1,313 centerline of certified public roads. 347 of these miles are considered county primary roads and 966 miles are considered county local roads. VBCRC maintains 5 traffic signals and 9,378 signs.

Approximately 73% (or 253 miles) of these county primary roads and 1% (or 9.6 miles) of county local roads are classified as federal aid eligible, which allows them to receive federal funding

for their maintenance and construction. Local funds must be used to manage those roads not eligible for federal or state aid.



PAVEMENT CONDITIONS

Surface condition is the most visible and major factor in determining a cost-effective road treatment. The VBCRC uses surface condition and age to anticipate when a specific section of roadway will be a potential candidate for preventive maintenance. Surface condition data enables the VBCRC to evaluate the benefits of preventive maintenance projects and to identify a cost-effective use of road and maintenance dollars. Historic surface condition data can be used to predict future road conditions and to help determine if a road network's condition

will improve, stay the same, or degrade at the current or planned investment level. This analysis helps to determine how much additional funding is necessary to meet a network's condition improvement goals.

The VBCRC is committed to monitoring the condition of its road network and using surface condition as a factor in cost-effective decision-making to preserve its of valuable road assets.

The VBCRC has adopted the TAMC's Pavement Surface Evaluation and



Rating (PASER) system for asphalt surfaces and their Inventory Based Rating (IBR) system for unpaved roads.

PASER provides an efficient and consistent method to evaluate asphalt road surface conditions through visual inspection. Additional information about PASER can be found in the link in the Appendix.

Unpaved road surface conditions change rapidly. The IBR system gathers condition assessment data by evaluating unpaved road surface width, drainage adequacy, and structural adequacy. A link to additional IBR information can be found in the Appendix.

Each method provides a rating for each road segment. High ratings indicate a road in good condition while low ratings indicate poor condition. The ratings do not provide an endorsement or indictment of a road's suitability for use, they provide context on how these road

elements compare to baseline conditions.

The VBCRC collects PASER data on 100 percent of its asphalt roads annually and collects 100 percent of its IBR data every three years. For federal aid eligible roads, the VBCRC partners with the Southwest Michigan Planning Commission and the Michigan Department of Transportation to collect data on half of this network annually. For all other data collection, the VBCRC utilizes the Southwest Michigan Planning Commission, Township Partners, and its own staff and resources.

The TAMC has developed statewide definitions of road conditions by creating three simplified condition categories—"good", "fair", and "poor"—having similar contexts with regard to maintenance and/or reconstruction.

The definitions of these rating conditions and image examples are located on the next page.





“Good” roads, according to the TAMC, have PASER or IBR scores of 8, 9, or 10. Roads in this category have very few, if any, defects and only require minimal maintenance; they may be kept in this category longer using PPM. These roads may include those that have been recently sealcoated or newly constructed.



“Fair” roads, according to the TAMC, have PASER or IBR scores of 5, 6, or 7. Roads in this category still show good structural support, but their surface is starting to deteriorate. Capital Preventative Maintenance (CPM) can be cost-effective for maintaining the road’s “fair” condition or even raising it to “good” condition before the structural integrity of the pavement has been severely impacted. CPM treatments can be likened to shingles on a roof of a house: while the shingles add no structural value, they protect the house from structural damage by maintaining the protective function of a covering.



“Poor” roads, according to the TAMC, have PASER or IBR scores of 1, 2, 3, or 4. These roads exhibit evidence that the underlying structure is failing, such as alligator cracking and rutting. These roads must be rehabilitated with treatments like a structural overlay, crush and shape, or total reconstruction.

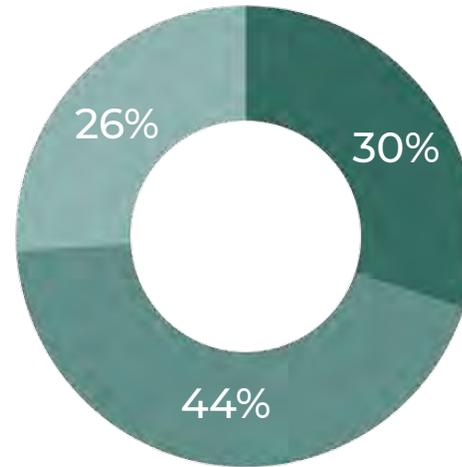


The VBCRC's 2022 paved county primary road network has 30 percent of roads in the TAMC good condition category, 26 percent in fair, and 44 percent in poor condition. The paved county local road network has 30 percent in good, 33 percent in fair, and 37 percent in poor condition.

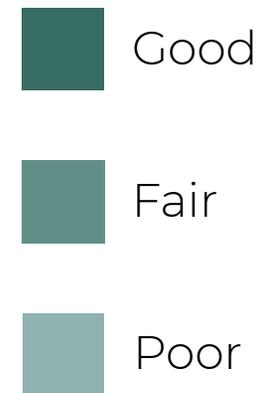
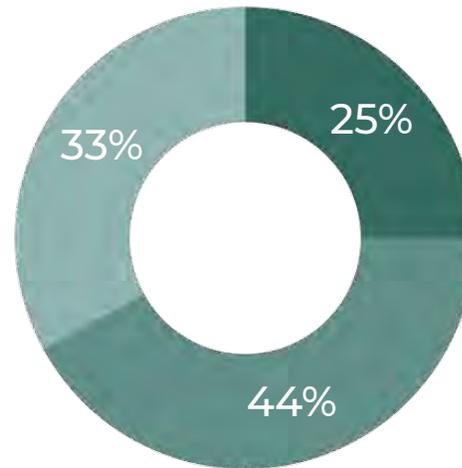
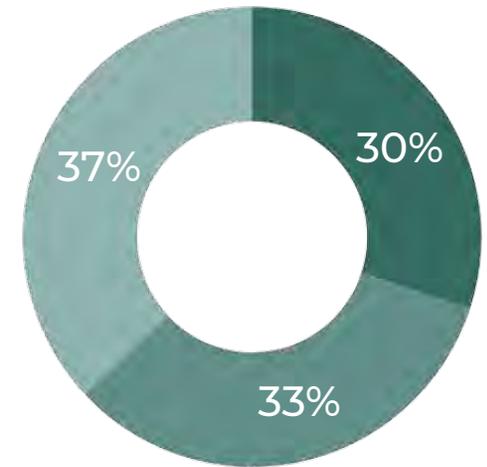
In comparison, the statewide paved federal-aid eligible road network has 25 percent of roads in the TAMC's good condition category, 44 percent in fair, and 33 percent in poor.

Other road condition graphs can be viewed on the TAMC pavement condition dashboard, the link can be found in the Appendix.

VBCRC Primary Road System



VBCRC Local Road System



Statewide Federal-Aid Eligible Road System



BRIDGE INVENTORY

The VBCRC is responsible for 73 bridges. Of the VBCRC's 73 structures, 10 are concrete bridges, 7 are steel bridges, 31 are pre-stressed concrete bridges, 7 aluminum culverts, and 18 are timber bridges.

Locations and sizes of each asset can be found in VBCRC's MiBRIDGE database. For more information, please contact: MDOT-MiBridge-Admin@michigan.gov

The distribution of overall condition, based on the National Bridge Inspection Standards (NBIS) rating scale, is: 6 (8.2%) are poor or lower; 36 (49.3%) are fair; 31 (42.5%) are good.

A summary bridge type and condition is presented in the following table:

Bridge Type	Number of Bridges and Condition as of 2020			
	Total	Poor	Fair	Good
Aluminum – Culvert	7	0	0	7
Concrete – Culvert	7	0	5	2
Concrete – Tee beam	3	1	2	0
Prestressed concrete – Box beam/girders	26	0	15	11
Prestressed concrete – Channel beam	1	0	0	1
Prestressed concrete – Multistringer	4	0	1	3
Steel – Culvert	4	1	1	2
Steel – Multistringer	3	0	2	1
Timber – Slab	18	4	10	4
Total	73	6	36	31
Percentage (%)	100%	8.2%	49.3%	42.5%



Township	Culvert Condition by Township				
	Total	Poor	Fair	Good	Not Rated
Almena	85	0	0	9	76
Antwerp	30	0	0	4	26
Arlington	164	1	3	15	145
Bangor	185	8	31	111	35
Bloomington	143	0	0	21	122
Columbia	132	1	2	36	93
Covert	157	9	32	86	30
Decatur	53	0	0	2	51
Geneva	192	13	33	105	41
Hamilton	52	0	0	2	50
Hartford	131	0	0	6	125
Keeler	51	0	0	9	42
Lawrence	102	0	0	7	95
Paw Paw	55	0	0	1	54
Pine Grove	47	0	0	0	47
Porter	32	0	0	1	31
South Haven	111	0	3	16	92
Waverly	96	0	0	5	91
Total	1818	32	104	436	1246

The above table breaks down the number of culverts and their condition by Township in Van Buren County. Statewide, MDOT's statistics for local agency bridges show that 8.5% are in poor condition and 91.5% are good/fair condition. The VBCRC has 91.8% of its

bridges in fair/good condition and 8.2% of its bridges classified as poor condition. This indicates that the VBCRC bridge conditions fall in line with statewide average conditions for local agencies.



PERFORMANCE GOALS AND OUTCOMES

Goals help set expectations for how roadway conditions will change in the future. The VBCRC utilizes road condition data from 2020 as a benchmark for improvement. All goals are working forward from that point.

Surface and bridge condition changes are influenced by water infiltration, soil conditions, sunlight exposure, traffic loading, and repair or maintenance work performed. The VBCRC is not able to control any of these factors fully due to seasonal weather changes, traffic pattern changes, and its limited budget. In spite of the uncontrollable variables, it is still important to set realistic network condition goals that efficiently use budget resources to build and maintain roads meeting taxpayer expectations.

GOALS FOR PAVED COUNTY PRIMARY ROADS

The overall goal for the VBCRC's paved county primary road network is to maintain or improve road conditions network-wide from 2020 conditions.

The VBCRC's network-level pavement condition strategy for paved county primary roads is to prevent those paved county primary roads in the good and fair categories (PASER 10 – 5) from deteriorating to the poor category (PASER 4 - 1). At the point which a roadway transitions from fair to poor, the cost to return that road segment to good or fair condition is exponentially higher than to maintain it in good or fair condition.



GOALS FOR PAVED COUNTY LOCAL ROADS

The overall goal for the VBCRC's paved county local road network is to maintain or improve road conditions network-wide from the benchmark of 2020 conditions. At this time, the funding received by the VBCRC does not support investment in the local road system beyond general maintenance due to the VBCRC's commitment to utilizing specific criteria for its project selection process.

The VBCRC partners with the 18 Townships within Van Buren County to prioritize the funding of preventative maintenance and improvement efforts to the paved local road network.

The VBCRC's network-level pavement condition strategy for paved county local roads is:

1. Build an effective partnership with the 18 Townships within Van Buren County to help prevent those paved county local roads in the good and fair

categories (PASER 10 - 5) from deteriorating to the poor category (PASER 4 - 1).

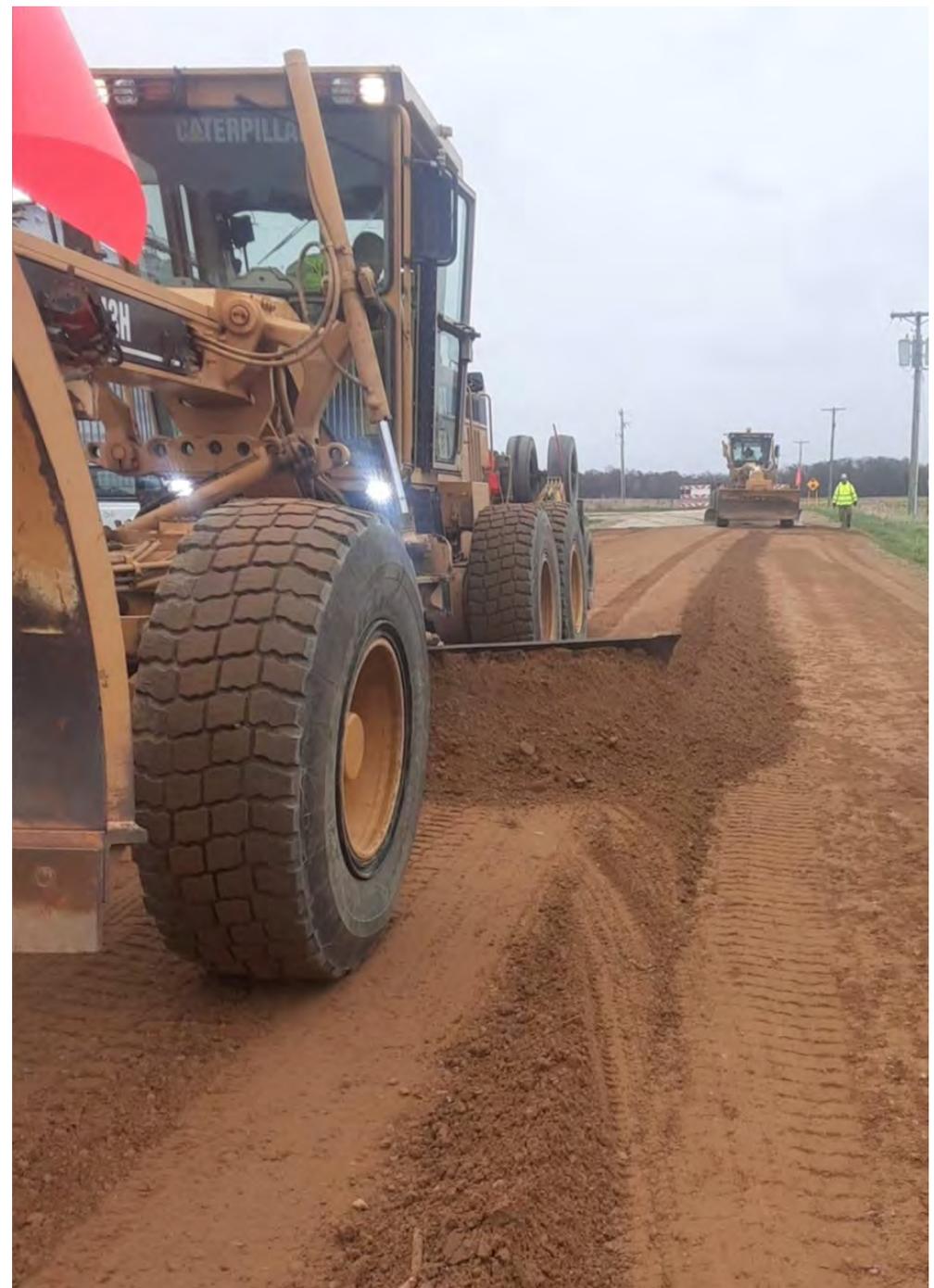
- a. Provide recommendations and maintenance and improvement options to meet this goal.
- b. Assist in the development of road plans for each of the 18 Townships to prioritize this goal.



GOALS FOR UNPAVED/GRAVEL ROADS

The overall goal for the VBCRC's unpaved or gravel road network is to maintain or improve road conditions network-wide based upon benchmark 2020 levels.

Our unpaved gravel roads will be maintained through general maintenance including grading and scraping. Any improvements to the 2.13 miles of county primary gravel roads will be funded through the VBCRC's budget at which time they are prioritized through the criteria set forth in this plan. Improvements to the 243 miles of county local gravel roads may be funded through Partnership Township Contributions at which time they are prioritized through the Township's road budget. No additional gravel road miles will be paved without a planned and budgeted maintenance strategy.



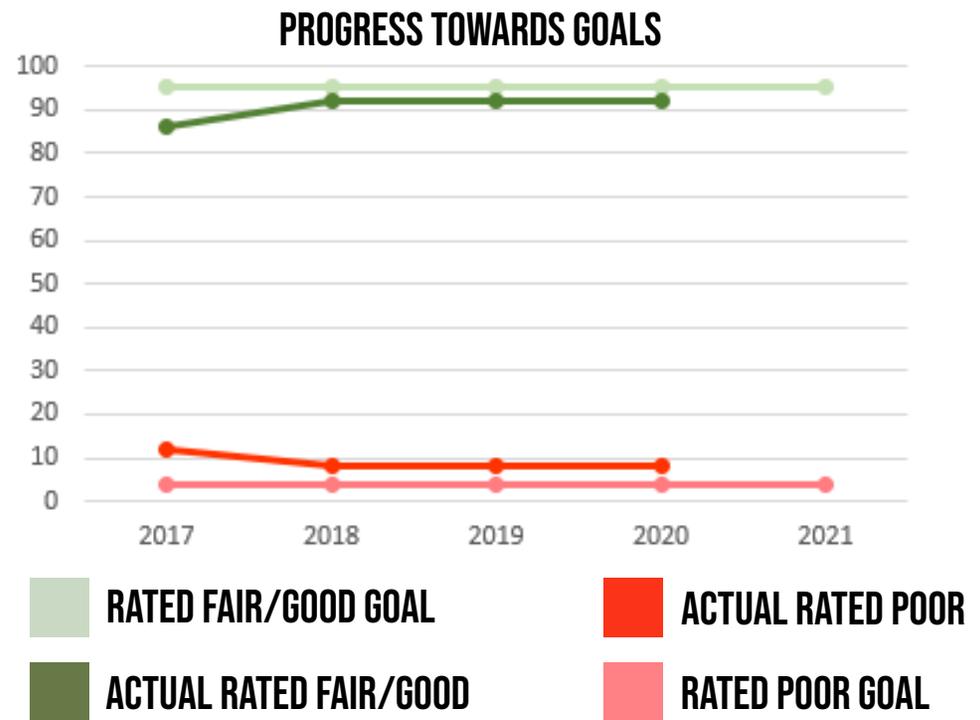
GOALS FOR BRIDGE ASSETS

The VBCRC’s long-range goals for bridge assets are to have 95% or more of the agency's local bridges in fair to good condition and to have less than 4% classify as poor within 10 years.

Several metrics will be used to assess the effectiveness of this asset management plan. The VBCRC will monitor and report the annual change in the number of its bridges rated fair/good (5 or higher) and the annual change in the number of its bridges classified as poor. A tracking graph will be used to monitor progress toward a long-range objective of having 95% of its bridges rated fair/good and having less than 4% classify as poor.

The asset management plan is also intended to extend the period of time that bridges remain in good and fair condition, thereby increasing their useful service life and reducing future maintenance and improvement costs. Based on past inspection records and

condition ratings, the VBCRC will establish a baseline of past performance by determining the average period of time that a bridge remains in good or fair condition. The performance measure will be the increased average amount of time a bridge is in the good or fair condition status after implementation of the asset management strategy when compared to the baseline time before implementation.



PROJECT SELECTION

An important part of this asset management plan is the project selection criteria used to prioritize road improvement projects.

The VBCRC utilizes the following four criteria to determine the prioritization of projects:

1. PASER ratings – Prioritization of road projects in the good and fair categories ensures the most efficient use of the VBCRC’s limited financial resources. Improving roads from the poor category to the good or fair categories is exponentially more expensive and less efficient than maintaining roads in good and fair condition.

2. Traffic Counts – Prioritization of road projects based upon traffic counts ensures the financial resources of the VBCRC provide the greatest impact to the traveling public.

The VBCRC has developed a three-tiered prioritization level. Roads with high traffic counts are more highly prioritized than those in the medium and low categories. A map of the primary road system's traffic counts can be found on the following page.





GENERAL HIGHWAY MAP

Traffic Counts
High
Medium
Low



CHARLES R. STEIN, Chairman
WILLIAM H. RHODES, Commissioner
WILLIAM G. COMBURN, PE, Engineer-Manager
JOHN T. ROSEVELT, Commissioner
JOHN FRANK, Asst. County Hwy. Engineer

LEGEND

- Interstate Route
- State Trunkline
- City or Village Street
- Corporate Limits
- County Road
- County Primary
- County Local
- Adjacent County
- Kal-Haven Trail

NOTE: THE 5 DIGIT AT THE INDEX BORDER REFERS TO THE HOUSE NUMBERING SYSTEM

SCALE 1" = 5 MILES

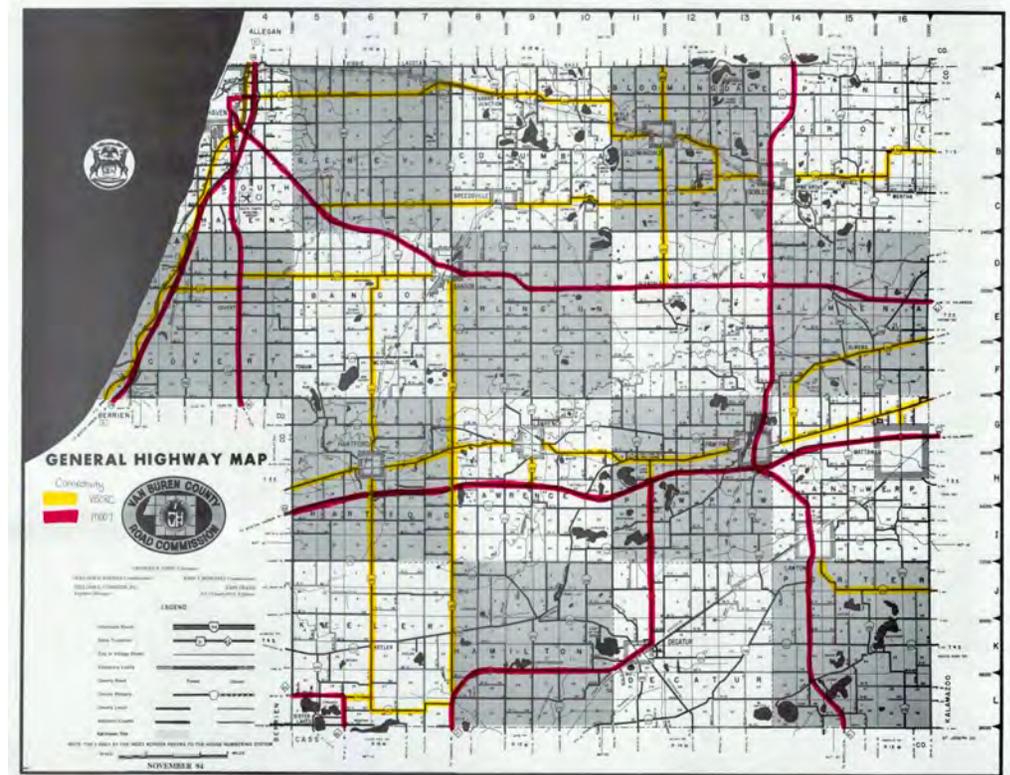
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3. Connectivity/Arterial Routes – Prioritization of road projects based upon the connection of roads within the VBCRC's jurisdiction is another criteria that ensures the proper utilization of resources. For the greatest impact to the traveling public, those road segments and/or routes that connect cities, villages, and state highways, or other population centers create the greatest positive impact. Additionally, while entire routes cannot be prioritized in one or several budget years, it is important to coordinate the allocation of resources to improve an entire route.

For example, the positive impact to the traveling public is limited when a mile of improved roadway is surrounded by other unimproved road segments. Alternatively, beginning with a segment of a road and continuing with connected segments results in a route between population centers or state highways, ensures the greatest positive impact to the traveling public.

A map of the prioritized connectivity/arterial routes is shown below. MDOT's roads are shown in red, VBCRC's road system is shown in yellow.



 MDOT Roads in Van Buren County

 The VBCRC's Connectivity Road System



4. Funding Sources – Prioritization of road projects based upon additional available funding sources (besides the Michigan Transportation Fund [MTF] or County-Wide Millage revenues) is an important factor in project selection. The VBCRC submits projects through various funding sources, including Congestion Mitigation and Air Quality (CMAQ), Economic Development, Safety Funds, Local Bridge Program, and other Federal and State Aid sources based upon their criteria. Additionally, Townships may provide additional funding to prioritize a road project.



PERFORMANCE MEASURE

The VBCRC utilizes various project types to address the needs of the road system. The selection of repair and improvement treatments for roads aims to balance costs, benefits, and road life expectancy.

All pavement surfaces can be damaged by water, traffic weight, freeze/thaw cycles, and sunlight. Each treatment and strategy counter at least one of these pavement and structure-damaging forces. The various “mix of fixes” are outlined on the next four pages. Every potential road treatment references the PASER at which the treatment is most effective.

These identified PASER and National Bridge Inventory (NBI) ratings “trigger” the timing of projects appropriately to direct the right fix at the right time, thereby providing the greatest improvement. The VBCRC utilizes RoadSoft to evaluate the performance effectiveness of these treatments.



- Total Road Reconstruction: Reconstruction includes: 1) clearing the road right-of-way of brush, trees, and stumps; 2) installing a proper drainage system; 3) constructing a 12" sub-base of compacted sand, and a minimum of 8" of compacted gravel; and 4) asphalt paving with a minimum of two courses of asphalt (base and top).

- Structural Asphalt Overlay (With or Without Milling): Asphalt overlay is placing 1 1/2" or more of new asphalt over existing asphalt that is not distorted, extensively cracked, or patched. Milling may be used prior to an asphalt overlay, which consists of grinding off the top layer of asphalt and placing the new asphalt surface on top.

- Crush and Shape: A pulverizer grinds the existing asphalt and a portion of the underlying gravel. The material is then re-graded and compacted to create a new structural base.



- Sealcoat/Fog Seal: Sealcoat is a thin layer of emulsion or liquid asphalt covered with a layer of crushed slag, rock, or stone to seal the surface of an existing paved roadway. Fog seal is a layer of liquid asphalt applied over a sealcoat to further preserve the underlying pavement structure.
- Crack Seal: Crack sealing is rubber material and asphalt emulsion combined to form an elastic moisture barrier over cracks in the road that when heated and applied will maintain their form over extreme heat and cold fluctuations in the roadway.



More in-depth descriptions of these pavement fixes, as well as other maintenance projects, can be found in VBCRC's Township Partnership Guide. The link to this booklet can be found in the Appendix.

Type of Fix	Suggested PASER Rating	Life Expectancy
Total Road Reconstruction	1-3	14 years
Structural Overlay with/without Milling	4-7	5-10 years
Crush and Shape	1-3	14 years
Sealcoat/Fog Seal	7-9	5 years
Crackseal	5-8	2 years

EXISTING BRIDGE STRUCTURE "MIX OF FIXES"

The aim to address the bridge structures of critical concern is to target bridge components rated as being in poor condition and to improve the overall condition of the bridge network to good or fair condition. The VBCRC uses a prioritization formula that evaluates five factors and weighs them as follows: condition (60%), load capacity (3%), traffic (5%), safety (30%), detour (2%).

There are several components within each factor that are used to arrive at its score. Each project under consideration is scored, and its total score is then compared with other proposed project to establish a priority order.



- **Structure Replacement:** Replacement involves substantial changes to the existing structure, such as bridge deck replacement, superstructure replacement, complete structure replacement, or geometric upgrades (such as changing the width or length) and is intended to improve critical or closed bridges to a good condition rating.

- **Structure Rehabilitation:** Rehabilitation is undertaken to extend the service life of existing bridges. The work will restore deficient bridges to a condition of structural or functional adequacy. Rehabilitation actions are intended to improve the poor or fair condition bridges to fair or good condition.

- **Preventative Maintenance:** Preventive maintenance work will improve and extend the service life of fair bridges and will be performed with the understanding that future rehabilitation or replacement projects will contain appropriate safety enhancements. Preventative maintenance projects target

bridge elements that are rated in fair condition with the intent of improving the overall condition to a good rating.

- **Scheduled Maintenance:** The VBCRC's scheduled maintenance program is an integral part of the preservation plan, and is intended to extend the service life of fair and good structures by preserving the bridges in their current condition for a longer period of time. Scheduled maintenance is proactive and not necessarily condition driven. In-house maintenance crews will perform much of this work.

Several of the poor condition bridges require replacement or major rehabilitation. The remaining bridges require preventative maintenance actions to repair defects and restore the structure to a higher condition rating. Most bridges are included in a scheduled maintenance plan programmed for groups of bridges of similar material and type, bundled by location.



The replacement, rehabilitation, and preventive maintenance projects are generally eligible for funding under the Local Bridge Program, and any requests for funding are submitted with the VBCRC's annual applications.

The "mix of fixes" strategy employs several tactics made up of preventive maintenance and rehabilitation measures. Implementing this balanced mixture will increase the number of bridges improved each year and preserve the overall health of the VBCRC's bridge network.

The VBCRC's implementation of an asset management and preservation strategy begins with a biannual review of the current condition of each of the agency's bridges using the National Bridge Inspection Standards (NBIS) inspection data contained in the MDOT Bridge Safety Inspection Report and the inspector's work recommendations, linked in the Appendix.

The inspection inventory and condition, the management and preservation needs are determined for each bridge and the corresponding actions are identified and assembled on a spreadsheet, sorted by bridge material and type, and inspection follow-up actions can be obtained by contacting the VBCRC.

Bridge management and preservation actions are selected in accordance with criteria contained in the Summary of Preservation Criteria from MDOT Project Scoping Manual tables on the following pages. These criteria target MDOT's trunk line bridges. The VBCRC has modified the selection criteria slightly to address its local bridge network.

A primary objective of the VBCRC's bridge structure Asset Management Plan is improvement of five bridges rated poor (4 or lower) to a rating of fair (5 or higher) within 10 years through management and/or preservation activities consisting of replacement,



rehabilitation, and preventive maintenance. The work has been prioritized by considering each individual bridge's needs, its importance, the present costs of improvements, and the impact of deferral (i.e., cost increase due

to increased degradation).

The next five pages outline the MDOT Project Scoping Manual utilized by the VBCRC when selecting preservation actions for bridge structures.



SUMMARY OF PRESERVATION CRITERIA FROM MDOT PROJECT SCOPING MANUAL

REPLACEMENT		
PRESERVATION ACTION	BRIDGE SELECTION CRITERIA	EXPECTED SERVICE LIFE
Total Replacement	<ul style="list-style-type: none"> - NBI Rating of 3 or less - <i>OR</i> when cost of rehabilitation exceeds cost of replacement - <i>OR</i> when bridge is scour critical with no counter-measures available 	70 years
Superstructure Replacement	<ul style="list-style-type: none"> - NBI Rating for superstructure of 4 or less - <i>OR</i> when cost of rehabilitating superstructure and deck exceeds replacement cost 	40 years
Deck Replacement <ul style="list-style-type: none"> • Epoxy Coated Steel • Black Steel 	Use guidelines in MDOT's <i>Bridge Deck Preservation Matrix</i> <ul style="list-style-type: none"> - NBI Rating of 4 or for deck surface and deck bottom - <i>OR</i> when deck replacement cost is competitive with rehabilitation 	70 years 40 years
Substructure Replacement (Full or Partial)	<ul style="list-style-type: none"> - NBI Rating of 4 or less for abutments, piers, or pier cap - <i>OR</i> existence of open vertical cracks, signs of differential settlement, or presence of active movement - <i>OR</i> bridge is scour critical with no counter-measures available 	40 years



SUMMARY OF PRESERVATION CRITERIA FROM MDOT PROJECT SCOPING MANUAL (CONT.)

REHABILITATION		
PRESERVATION ACTION	BRIDGE SELECTION CRITERIA	EXPECTED SERVICE LIFE
Concrete Deck Overlays <ul style="list-style-type: none"> • Deep • Shallow • HMA/Membrane • HMA Cap 	Guidelines in MDOT's <i>Bridge Deck Preservation Matrix</i> NBI Deck Rating <5 for surface and >5 for bottom NBI Deck Rating <5 for surface and >4 for bottom NBI Deck Rating <5 for surface and >4 for bottom NBI Deck Rating <5 for surface and <4 for bottom	25 years 12 years 8 years 3 years
Railing Retrofit/Replacement	<ul style="list-style-type: none"> - NBI Deck Rating greater than 5 - <i>OR</i> Railing/Barrier rated less than 5 - <i>OR</i> Safety Improvement is needed 	
Steel Beam Repairs	<ul style="list-style-type: none"> - More than 25% section loss is present in an area of the beam that affects load carrying capacity - <i>OR</i> in order to correct impact damage that impairs beam strength 	
Prestressed Concrete Beam Repairs	<ul style="list-style-type: none"> - Repair ends of prestressed I-beams when more than 5% spalling is present - <i>OR</i> repair areas to correct impact damage that impairs beam strength or exposes prestressing strands 	
Repair/Replace Culvert	<ul style="list-style-type: none"> - NBI Rating of 4 or less for culvert or drainage outlet structure - <i>OR</i> existence of open vertical cracks, signs of deformation, movement, or differential settlement 	
Repair/Replace Retaining Wall	<ul style="list-style-type: none"> - NBI Rating of 4 or less for retaining wall - <i>OR</i> existence of open vertical cracks, signs of differential settlement, or presence of active movement 	
Pin and Hanger Replacement	<ul style="list-style-type: none"> - NBI Rating for elements is 4 or lower; presence of excessive section loss, severe pack rust, or out-of-plane distortion 	
Substructure Concrete Patching and Repair	<ul style="list-style-type: none"> - NBI Rating for abutments or piers is 5 or 4 and less than 30% of the surface is spalled and delaminated - <i>OR</i> in response to inspector's work recommendation for substructure patching 	



SUMMARY OF PRESERVATION CRITERIA FROM MDOT PROJECT SCOPING MANUAL (CONT.)

PREVENTATIVE MAINTENANCE		
PRESERVATION ACTION	BRIDGE SELECTION CRITERIA	EXPECTED SERVICE LIFE
Repair/Replace Deck Joint	<ul style="list-style-type: none"> - Include when doing deep or shallow overlays - <i>OR</i> NBI Rating for joint is 4 or lower - <i>OR</i> joint is leaking heavily 	
Repair/Replace Steel Bearing	<ul style="list-style-type: none"> - NBI Rating for girders and deck is 5 or higher and rating for bearings is 4 or lower 	
Complete Painting	<ul style="list-style-type: none"> - NBI Rating for paint condition is 3 or lower - <i>OR</i> in response to inspector's work recommendation for complete painting 	15 years
Zone Painting	<ul style="list-style-type: none"> - NBI Rating for paint condition is 5 or 4 - <i>OR</i> less than 15% of existing paint area has failed and remainder of paint system is in good or fair condition 	10 years
HMA Overlay Cap without Membrane	<ul style="list-style-type: none"> - NBI Rating of 3 or less for deck surface and deck bottom; temporary holdover to improve ride quality for a bridge in the 5-year plan for rehab/replacement 	3 years
Concrete Deck Patching	<ul style="list-style-type: none"> - Deck Surface Rating of 5, 6, or 7 with minor delamination and spalling - <i>OR</i> in response to inspector's work recommendation 	5 years
Channel Improvements	<ul style="list-style-type: none"> - Removal of vegetation, debris, or sediment from channel and banks to improve channel flow - <i>OR</i> in response to inspector's work recommendation 	
Scour Countermeasures	<ul style="list-style-type: none"> - Structure is categorized as scour critical and is not scheduled for replacement; NBI comments in abutment and pier ratings indicate presence of scour holes 	



SUMMARY OF PRESERVATION CRITERIA FROM MDOT PROJECT SCOPING MANUAL (CONT.)

SCHEDULED MAINTENANCE		
PRESERVATION ACTION	BRIDGE SELECTION CRITERIA	EXPECTED SERVICE LIFE
Superstructure Washing	<ul style="list-style-type: none"> - When salt contaminated dirt and debris collected on superstructure is causing corrosion or deterioration by trapping moisture - <i>OR</i> in response to inspector's work recommendation 	2 years
Vegetation Control	<ul style="list-style-type: none"> - When vegetation traps moisture on structural elements or is growing from joints or cracks - <i>OR</i> in response to inspector's work recommendation for brush cut 	1 year
Debris Removal	<ul style="list-style-type: none"> - When vegetation, debris, or sediment accumulates on the structure or in the channel - <i>OR</i> in response to inspectors' work recommendation 	1 year
Drainage System Clean-Out/Repair	<ul style="list-style-type: none"> - When drainage system is clogged with debris or drainage elements are broken, deteriorated, or damaged 	2 years
Spot Painting	<p>For zinc-based paint systems only</p> <ul style="list-style-type: none"> - In response to inspector's work recommendation 	5 years
Seal Concrete Cracks/Joints	<ul style="list-style-type: none"> - Concrete is in good or fair condition, and cracks extend to the depth of the reinforcement - <i>OR</i> in response to inspector's work recommendation 	5 years
Repair/Replace HMA Surface	<ul style="list-style-type: none"> - HMA surface is in poor condition - <i>OR</i> in response to inspector's work recommendation 	



SUMMARY OF PRESERVATION CRITERIA FROM MDOT PROJECT SCOPING MANUAL (CONT.)

SCHEDULED MAINTENANCE (CONT.)		
PRESERVATION ACTION	BRIDGE SELECTION CRITERIA	EXPECTED SERVICE LIFE
Seal HMA Cracks/Joints	<ul style="list-style-type: none"> - HMA surface is in good or fair condition, and cracks extend to the surface of the underlying slab or sub course - <i>OR</i> in response to inspector's work recommendation 	
Minor Concrete Patching	<ul style="list-style-type: none"> - Repair minor delamination and spalling - <i>OR</i> in response to inspector's work recommendation 	
Timber Repairs	<ul style="list-style-type: none"> - NBI Rating of 4 or less for timber members - <i>OR</i> to repair extensive rot, checking, or insect infestation 	
Repair/Replace Guard Rail	<ul style="list-style-type: none"> - Guard rail missing or damaged - <i>OR</i> safety improvement is needed 	
Repave Approaches	<ul style="list-style-type: none"> - HMA is in poor condition - <i>OR</i> in response to inspector's work recommendation 	
Repair Slopes	<ul style="list-style-type: none"> - NBI Rating is 5 or lower - <i>OR</i> when slope is degraded or sloughed - <i>OR</i> slope paving has significant areas of distress, failure, or has settled 	
Install Riprap	To protect surface when erosion threatens the stability of side slopes of channel banks	
Miscellaneous Repairs	Uncategorized repairs in response to inspector's work recommendation	



RISK MANAGEMENT

In consideration of the VBCRC's goals, hazards and threats to the agency, and to programs and projects, the VBCRC aims to complete have been identified and evaluated for their impact on the agency. These risks are both natural (e.g., extreme weather patterns and storm events) and man-made threats (e.g., cyberattacks and labor shortages). The hazards and threats can have system-wide impacts or focused impacts and can be the result of circumstances outside of VBCRC's control.

Transportation infrastructure is designed to be resilient. The system of interconnecting roads and bridges maintained by VBCRC provides road users with multiple alternate options in the event of an unplanned disruption of one part of the system. There are key links in the transportation system that may cause significant inconvenience to users if they are unexpectedly closed to

traffic. These key links may include some of the following characteristics:

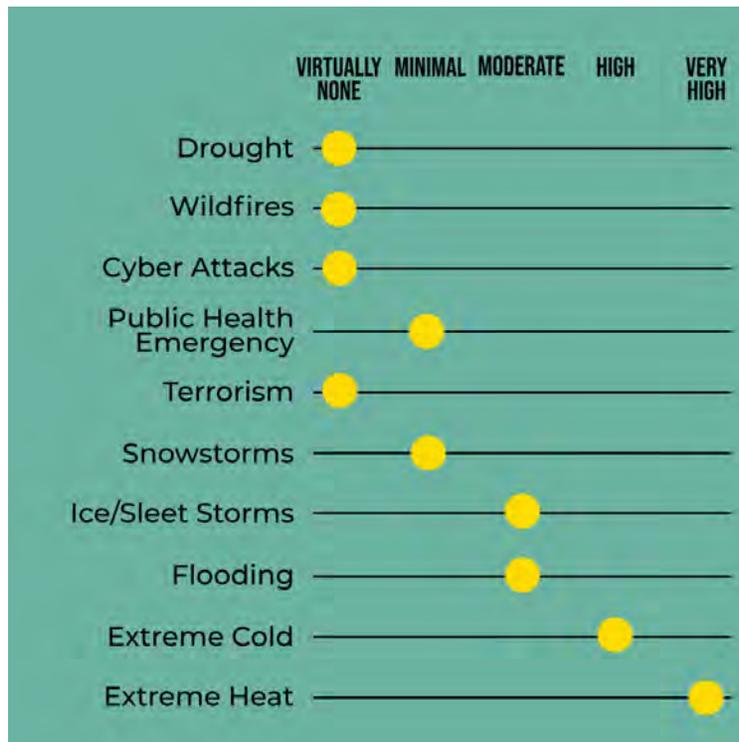
- Geographic divides: Areas where a geographic feature (river, lake, hill or limited access road) limits crossing points of the feature.
- Emergency alternate routes for high-volume roads: Roads which are routinely used as alternate routes for high volume roads or roads that are included in an emergency response plan.
- Limited access areas: Roads that serve remote or limited access areas that result in long detours if closed.
- Main access to key commercial districts: Areas where a large number of large size businesses will be significantly impacted if a road is unavailable.



IMPACT OF THREATS TO VBCRC

Several threats to VBCRC's mission are outside of the control of the VBCRC. These are usually naturally occurring weather patterns, but can also be categorized as extreme storm impacts, crises that impact human health, and human-designed attacks meant to stall or destroy for political or financial gain.

The overall impact of these hazards are outlined below.



AGENCY THREATS

Agency threats are risks that directly impact the VBCRC's ability to develop a program or complete projects. These risks have varying levels of consequences to the VBCRC, either in the way the VBCRC does business or in the VBCRC's ability or achieve its goals based on out mission, vision, and values. The severity of these threats are shown in the table below.

Threat Categories	Threats	Threat Consequences (1-minimal; 5-severe)
Labor	Staffing Shortage	4
	Inability to Attract New Talent	4
Technology	Ability to Procure and Manage Changing and New Transportation System Technologies	3
	Ability to Procure State-of-the-Practice Technology Support for Day-to-Day Staff Support	3
Financial	MTF and Local Funding Levels	5
	MTF and Local Funding Structure	5
	Changes in Regulations and VBCRC's Ability to Comply	2
	Trust Funding Levels/Trust Fund Cliff	1



PROGRAM THREATS

The VBCRC's program threats can affect a project, multiple projects, or the ability to reach the VBCRC's goals. These threats can be site-specific like weather conditions, or systematic like economic downturn. These threats and their consequence rating can be found below.

Threat Categories	Threats	Threat Consequences (1-minimal; 5-severe)
Systems Maintenance	Spikes in Maintenance Costs	4
	Needed Support for Winter Operations in Response to Severe Winter Season	3
Project-Costs	Spikes in Material Costs	4
	Spikes in Labor Costs	2
	Reoccurring Congestion	2
Climate Change	Long-term Climate Change and Threats to System Operations and Infrastructure	2
System Disruption	Economic Downturn	2
	Failure to Address Critical Functions	2
	Demographics	2
Project-level Disruptions	Extreme Weather Conditions at the Project Level	2
	Labor Disputes	1

CONSEQUENCE RATING

The VBCRC's consequence ratings are chosen based on the degree of disruption to the transportation system if a hazard occurs. This rating system is numerical from 1 being minimal to 5 being severe. The definitions for these ratings can be found in the table below.

1	No loss or significant threat to health or life; limited effect on the outcomes and/or objectives of VBCRC; and impact can be managed within current resources.
2	Minor health and safety incident involving a member of the public; minor impact on service delivery; and impact can be managed within current resources with some re-planning.
3	Health and safety incident involving multiple members of the public; compromise of the strategic objectives and goals of VBCRC; and impact can be managed with some re-planning and modest extra financial or human resources.
4	Significant health and safety incident involving multiple members of the public; significant compromise of the strategic objectives and goals of VBCRC; and impact cannot be managed without re-prioritization of VBCRC programs.
5	Loss of life; severe compromise of the strategic objectives and goals of VBCRC; and impact cannot be managed without additional funding from government.



FINANCIAL PLANNING

Public entities must balance the quality and extent of services they can provide with the financial resources received. The VBCRC will review its general expenditures and financial resources devoted to pavement and bridge maintenance and construction annually. The VBCRC's full financial report can be obtained on our website at www.vbcrc.org/financialandcompliance.



COUNTY PRIMARY NETWORK

With recent increases in funding received through the Michigan

Transportation Fund (MTF), the VBCRC is able to budget approximately \$7.5 million annually on roadway preservation and improvement projects. Over the next five years, the VBCRC plans to continue budgeting \$7.5 million annually for county primary-network projects consisting of, but not limited to, reconstruction, structural overlay, culvert replacement, and preventive maintenance. Spending on projects depends on revenue from the Michigan Transportation Fund (MTF), county-wide road millage, township contributions, and federal/state aid programs.

COUNTY BRIDGE NETWORK

The VBCRC applied for federal funding in 2021 for the purpose of replacement and preventative maintenance for identified and selected bridges in the 2024 construction season. The funding for these bridge projects is allocated per project with a schedule for completion from MDOT. Other replacement,



rehabilitation, and preventative maintenance projects will be submitted for state and/or local funding following federal funding guidelines. Any projects submitted to the federal aid program that are not a selected for funding will be added to the VBCRC's program. Scheduled maintenance activities and minor repairs that are not affiliated with any applications, grants, or other funded projects will be performed by the agency's in-house maintenance forces and funded through the agency's annual operating budget.

COUNTY LOCAL NETWORK

Funding for preservation and improvement projects on the county Local road network is designated by the 18 Townships within Van Buren County. These dollars come from an allocation to each Township from the county-wide road millage as well as each Township's general fund and/or Township road millage. Annually the Townships contribute approximately \$4 million on

roadway preservation and improvement projects for the county's Local road network. Over the next five years, the VBCRC anticipates that this level of funding from the Townships will remain between \$3.5 and \$4.5 million annually on the county's Local road network. These projects consisting of, but are not limited to reconstruction, structural overlay, culvert replacements, and preventive maintenance.

GAP BETWEEN FUNDING AND GOALS

The current funding that the VBCRC receives is not sufficient for road improvement and preservation throughout the County. The Performance Goals section of this Plan provides further details about the goals and the shortfall given the VBCRC's current funding levels. The VBCRC believes that the overall condition of the Primary and Local road network can be maintained or improved with additional funding.



MULTI-YEAR PLANNING

The VBCRC plans construction and maintenance projects several years in advance. A multi-year planning threshold is required due to the time necessary to plan, design, and finance construction and maintenance projects. This includes planning and programming requirements from state and federal agencies that must be met prior to starting a project such as studies on environmental and archeological impacts, review of construction and design documents and plans, documentation of rights-of-way ownership, planning and permitting for stormwater discharges, and other regulatory and administrative requirements. The plan also includes a coordination of efforts with all ROW users to ensure timely and efficient work is possible.

Pursuant to PA 499 of 2002 (later amended by PA 199 of 2007), road projects for the upcoming three years are required to be reported annually to

the TAMC. Planned projects represent the best estimate future activity; however, changes in design, funding, and permitting may require the VBCRC to alter initial plans. Project planning information is used to predict the future condition of the road networks that the VBCRC maintains.

The VBCRC has created an aggressive five year plan consisting of projects planned for the Primary road system through 2027 totaling over \$39.4 million. Federal and State Aid submissions may be added to the five year plan accordingly when awarded, or added to the plan as funding allows, if not awarded. The execution of the plans is budget dependent and may not be completed if funding doesn't allow. All of these projects can be found on the following pages.



2022 was a very successful year for the VBCRC. The TAMP included an aggressive plan for road improvements and preservation. The map on page 41 depicts the success of the 2022 TAMP.

Throughout 2022, one project included on the TAMP was removed as preventative maintenance had mitigated the need for further improvement. In its place a high priority project (Red Arrow Highway from the

Village of Lawrence to CR 681) was completed. Additionally, the MDOT bid letting of the project CR 687 between 90th Avenue and CR 342 required the project be moved to the spring of 2023.

The success of the 2022 construction season resulted in an approximate investment of \$6,928,000 in road improvement and preservation on the primary road system.





GENERAL HIGHWAY MAP

2622 Primary Road
Improvements
Heavy main
Seal coat



CHARLES R. STEIN, Chairman

WILLIAM H. RHODES, Commissioner
WILLIAM G. COMBURN, P.E.
Engineer-Manager

JOHN T. ROSEVELT, Commissioner
JOHN FRANK
A/S County Hwy. Engineer

LEGEND

- Interstate Route
- State Trunkline
- City or Village Street
- Corporate Limits
- County Road
- County Primary
- County Local
- Adjacent County
- Kali-Haven Trail

NOTE: THE 5 DIGIT AT THE INDEX BORDER REFERS TO THE HOUSE NUMBERING SYSTEM

SCALE 0 1 2 3 4 5 MILES

NOVEMBER 94



The VBCRC has utilized principles of asset management for many years. The adoption of the TAMP in 2022 focused and solidified these principles into a process which can be demonstrated more clearly. The map on page 42 shows the road improvements projects performed by the Road Commission from 2012 to 2022. Beyond road improvements, the VBCRC widely utilizes seal coat to preserve road assets efficiently.

The map on page 43 shows not only the road improvement projects which have taken place from 2012 to 2022 and are planned from 2023 through 2027 but also the sealcoat application from 2019 through 2022.

Utilizing a mix of road improvement and preservation projects has resulted in an improved road network throughout Van Buren County.





GENERAL HIGHWAY MAP

Heavy Maintenance Improvements
2012-2022

- 2012
- 2021
- 2020
- 2019
- 2018
- 2017



CHARLES R. STEIN, Chairman
 WILLIAM H. RICHES, Commissioner
 JOHN T. ROSEVELT, Commissioner
 WILLIAM G. COMBURN, PE, Engineer-Manager
 JOHN FRANK, Asst. County Hwy. Engineer

LEGEND

- Interstate Route
- State Trunkline
- City or Village Street
- Corporate Limits
- County Road
- County Primary
- County Local
- Adjacent County
- Kal-Haven Trail

NOTE: THE 5 DIGIT AT THE INDEX BORDER REFERS TO THE HOUSE NUMBERING SYSTEM

SCALE 1:50,000 MILES

NOVEMBER 94





GENERAL HIGHWAY MAP

2012-2022 Road Improvement

2023

2024

2025

2026

2027

Planned Road Improvements in Asset Management Plan



Completed Road 2019-2022

WILLIAM H. RHODES, Commissioner
WILLIAM G. COMBURN, PE
Engineer-Manager

CHARLES R. STEIN, Chairman

JOHN T. ROSEVELT, Commissioner
JOHN FRANK
Asst. County Hwy. Engineer

LEGEND

- Interstate Route
- State Trunkline
- City or Village Street
- Corporate Limits
- County Road
- County Primary
- County Local
- Adjacent County
- Kal-Haven Trail

NOTE: THE 5 DIGIT AT THE INDEX BORDER REFERS TO THE HOUSE NUMBERING SYSTEM

SCALE

NOVEMBER 94



FIVE YEAR PLAN FOR PRIMARY ROAD SYSTEM

The following list of projects is the planned 5 year road plan for the primary road system. This list is subject to change based upon funding, project modifications or other unforeseen issues.

2023						
PROJECT LOCATION	PROJECT SCOPE	ESTIMATED COST	PLAN CRITERIA		ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 689; CR 388 to 8 th Avenue	Road Rehabilitation	\$940,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	60%	Yes
CR 388; 29 th Street to CR 653 S	Restore and Rehabilitation	\$1,790,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	20%	Yes
CR 380; Columbia Township Line to CR 665	Top Course Asphalt	\$313,500.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
Red Arrow Highway; CR 671 S to Village of Lawrence Limits	Mill and Fill	\$977,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 352; CR 687 to 60 th Street	Crush, Shape, Pave	\$1,200,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 687; 90 th Avenue to CR 342	Trench, Widen, Crush, Shape, Pave	\$539,917.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	42%	Yes
Various Primary Roads	Sealcoat/Fog Seal: 60 miles	\$2,079,000.00				
Various Primary Roads	Crackseal	\$100,000.00				
					TOTAL: \$7,939,417.00	



FIVE YEAR PLAN FOR PRIMARY ROAD SYSTEM (CONT.)

2024						
PROJECT LOCATION	PROJECT SCOPE	ESTIMATED COST	PLAN CRITERIA		ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 352; CR 215 to CR 358	Crush and Shape	\$1,540,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 384; South Haven Township Line to CR 687	Trench, Widen, Crush, Shape, Pave	\$628,882.50	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	60%	No
CR 681; M-51 to CR 352	Crush and Shape	\$1,315,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 380; Blue Star Highway to I-196	Crush and Shape	\$165,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 388; CR 653 S to Kalamazoo County Line	Trench, Widen, Crush, Shape, Pave	\$1,894,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	37%	Yes
CR 215; 44 th Avenue to 48 th Avenue	Safety Improvements	\$1,250,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	40%	Yes
Various Primary Roads	Sealcoat/Fog Seal: 60 miles	\$2,182,950.00				
Various Primary Roads	Crackseal	\$100,000.00				
TOTAL: \$9,075,832.50						



FIVE YEAR PLAN FOR PRIMARY ROAD SYSTEM (CONT.)

2025						
PROJECT LOCATION	PROJECT SCOPE	ESTIMATED COST	PLAN CRITERIA		ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 652; 72 nd Avenue to Robinson Road	Mill and Fill	\$800,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 378; City of Bangor to CR 687 N	Tree Work, Drainage, Trench, Widen	\$580,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	No
Red Arrow Highway; 59.5 Street to CR 681	Mill and Fill	\$300,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	20%	Yes
Red Arrow Highway; City of Hartford to 59.5 Street	Mill and Fill	\$979,625.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 352; 60 th Street to CR 681	Crush, Shape, Pave	\$1,200,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 388; CR 380 to Village of Gobles	Mill and Fill	\$575,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 653; M-40 to I-94	Holding Funds for 2026 Project	\$330,200.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
Various Primary Roads	Sealcoat/Fog Seal: 60 miles	\$2,292,097.50				
Various Primary Roads	Crackseal	\$100,000.00				
TOTAL: \$7,156,922.50						



FIVE YEAR PLAN FOR PRIMARY ROAD SYSTEM (CONT.)

2026						
PROJECT LOCATION	PROJECT SCOPE	ESTIMATED COST	PLAN CRITERIA		ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 687; CR 372 to CR 376	Crush and Shape	\$1,956,521.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 378; City of Bangor to CR 687 N	Crush, Shape, Pave	\$625,479.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	52%	No
CR 653; M-40 to I-94	Crush and Shape	\$839,500.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 388; Village of Bloomingdale to CR 380	Mill and Fill	\$373,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	20%	Yes
CR 374; 39 th Street to Paw Paw Village Limits	Crush and Shape	\$632,500.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	18.15%	Yes
Red Arrow Highway @ CR 652 S	Signal Upgrade	\$45,000.00	<input type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Funding	100%	Yes
CR 653; Red Arrow Highway to 22 nd Street (Van Kal)	Crush, Shape, Pave	\$2,0556,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
Various Primary Roads	Sealcoat/Fog Seal: 60 miles	\$2,406,702.38				
Various Primary Roads	Crackseal	\$100,000.00				
TOTAL: \$9,034,702.38						



FIVE YEAR PLAN FOR PRIMARY ROAD SYSTEM (CONT.)

2027					
PROJECT LOCATION	PROJECT SCOPE	ESTIMATED COST	PLAN CRITERIA	ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 378; CR 687 N to 66 th Street	Tree Work, Drainage, Trench, Widen, Crush, Shape, Pave	\$1,500,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count <input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
CR 652; CR 354 to 72 nd Avenue	Mill and Fill	\$425,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count <input type="checkbox"/> Connectivity <input type="checkbox"/> Funding	100%	Yes
Various Primary Roads	Sealcoat/Fog Seal: 60 miles	\$2,527,037.50			
Various Primary Roads	Crackseal	\$100,000.00			
Federal/State Aid Projects or Submitted Projects TBD Once Funding is Allocated		\$2,500,000.00			
				TOTAL: \$7,052,037.50	



FEDERAL AND STATE AID SUBMISSIONS

The following projects (pages 48 and 49) have been submitted for funding through various funding sources as indicated. Funding was not allocated, these projects were entered into the 5 year road plan utilizing the VBCRC's funds. Additional projects that were NOT awarded funding may be added to the 5 year road plan as funding allows.

SUBMITTED FOR STATE AND/OR FEDERAL AID 2024-2026 – ADDED TO 5-YEAR PLAN						
PROJECT LOCATION	PROJECT SCOPE AND YEAR PLANNED	ESTIMATED COST	FUNDING PROGRAM	ADDED TO 5 YEAR PLAN?	ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 352; CR 215 to CR 358	Crush and Shape (2024)	\$1,540,000.00	Not Awarded: RTF 2024-2026	Yes	100%	Yes
CR 652; CR 354 to 72 nd Avenue	Mill and Fill (2027)	\$425,000.00	Not Awarded: RTF 2024-2026	Yes	100%	Yes
CR 681; M-51 CR 352	Crush and Shape (2024)	\$1,315,000.00	Not Awarded: RTF 2024-2026	Yes	100%	Yes
Red Arrow Highway; Village of Lawrence to CR 681	Mill and Fill (2022)	\$1,830,000.00	Not Awarded: RTF 2024-2026	Yes	100%	Yes
CR 687; CR 372 to CR 376	Crush and Shape (2026)	\$1,956,521.00	Not Awarded: RTF 2024-2026	Yes	100%	Yes
Red Arrow Highway; 26 th Street to CR 652 S	Mill and Fill (Sealcoat 2022)	\$400,000.00	Not Awarded: RTF 2024-2026	Yes	100%	Yes
CR 652; 72 nd Avenue to Robinson Road	Mill and Fill (2025)	\$658,750.00	Not Awarded: KATS 2024-2026	Yes	100%	Yes



FEDERAL AND STATE AID SUBMISSIONS (CONT.)

SUBMITTED FOR STATE AND/OR FEDERAL AID 2024-2026 – ADDED TO 5-YEAR PLAN (CONT.)

PROJECT LOCATION	PROJECT SCOPE AND YEAR PLANNED	ESTIMATED COST	FUNDING PROGRAM	ADDED TO 5 YEAR PLAN?	ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 671; Red Arrow Highway to 60 th Avenue	Mill and Fill (Sealcoat 2023)	\$330,200.00	Not Awarded: KATS 2024-2026	Yes	100%	Yes
CR 653; M-40 to I-94	Crush and Shape (2026)	\$839,500.00	Not Awarded: Urban 2024-2026	Yes	100%	Yes
Red Arrow Highway; City of Hartford to 59.5 Street	Mill and Fill (2025)	\$979,625.00	Not Awarded: Urban 2024-2026	Yes	100%	Yes
CR 380; Blue Star Highway to I-196	Crush and Shape (2024)	\$165,000.00	Not Awarded: Urban 2024-2026	Yes	100%	Yes
TOTAL: \$10,439,596.00						



FEDERAL AND STATE AID SUBMISSIONS (CONT.)

SUBMITTED FOR STATE AND/OR FEDERAL AID 2024-2026 – ILLUSTRATIVE LIST						
PROJECT LOCATION	PROJECT SCOPE AND YEAR PLANNED	ESTIMATED COST	FUNDING PROGRAM	ADDED TO 5 YEAR PLAN?	ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 364; CR 657 To Western Avenue	Crush and Shape (TBD)	\$1,058,000.00	Not Awarded: KATS 2024-2026	Not at this time.	20%	Yes
CR 665; 64 th Avenue to CR 358	Crush and Shape (TBD)	\$1,035,500.00	Not Awarded: KATS 2024-2026	Not at this time.	20%	Yes
CR 665; Village of Paw Paw to Bridge	Crush and Shape (TBD)	\$1,293,750.00	Not Awarded: Urban 2024-2026	Not at this time.	18.15%	No
Kalamazoo Street; Blue Star Highway to City of South Haven	Mill and Fill (TBD)	\$115,000.00	Not Awarded: Urban 2024-2026	Not at this time.	18.15%	Yes
Ruggles Road; 20 th Avenue to Blue Star Highway	Crush and Shape (TBD)	\$195,000.00	Not Awarded: Urban 2024-2026	Not at this time.	18.15%	Yes
TOTAL: \$3,697,250.00						



OPTIONAL PROJECTS

The following are optional projects that may be added to the 5 year primary road plan as funding allows and/or considered as projects beyond 2027. These projects are those which have high traffic volume, are on connectivity routes, are connected to already improved surfaces, and/or have potential funding available.

OPTIONAL PROJECTS						
PROJECT LOCATION	PROJECT SCOPE	ESTIMATED COST	PLAN CRITERIA		ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 388; CR 653 to 12 th Avenue	Trench, Widen, Crush, Shape, Pave (TBD)	\$930,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	37%	Yes
CR 388; 12 th Avenue to Kalamazoo County Line	Trench, Widen, Crush, Shape, Pave (TBD)	\$964,000.00	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	37%	Yes
CR 378; City of Bangor to M-140	Crush, Shape, Pave (Segments Planned in 2025, 2026, and 2027)	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	Varies by Segment	Yes
CR 378; M-140 to I-196	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 384; South Haven Township Line to CR 687	Trench, Widen, Crush, Shape, Pave (TBD)	\$628,882.50	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	80%	No
CR 681 @ Red Arrow Highway	Intersection Improvements (TBD)	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input type="checkbox"/> Eligible for Funding	100%	Yes



OPTIONAL PROJECTS (CONT.)

OPTIONAL PROJECTS						
PROJECT LOCATION	PROJECT SCOPE	ESTIMATED COST	PLAN CRITERIA		ROAD COMMISSION PORTION COST	CONNECTED TO OTHER IMPROVED SURFACES?
CR 681; CR 384 to CR 380	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 681; CR 380 to City of Bangor	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 681; City of Bangor to CR 376 W	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 681; CR 376 W to 48 th Avenue	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 681; 48 th Avenue to Red Arrow Highway	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 681; Red Arrow Highway to CR 365	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 342; CR 687 to M-152	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes
CR 687; CR 342 to M-51	TBD	TBD	<input checked="" type="checkbox"/> Rating <input checked="" type="checkbox"/> Traffic Count	<input checked="" type="checkbox"/> Connectivity <input checked="" type="checkbox"/> Eligible for Funding	TBD	Yes



CONCLUSION

In the early 1990s, new legislative and reporting requirements gave rise to the adoption of asset management practices. Today, the widely demonstrated benefits of asset management in transportation decision-making encourage its adoption by agencies such as the Van Buren County Road Commission.

Many challenges continue to intensify, such as stretched budgets, declining staff resources, more stringent accountability requirements, deteriorating transportation infrastructure, etc. Transportation Asset Management is the key to finding the most effective and cost-efficient balance of preserving, upgrading, and replacing highway assets in this environment.

In this Asset Management Plan, the Van Buren County Road Commission has focused transportation asset

management decision-making on factors, such as connectivity, PASER data collection, traffic volume, and surface condition. This Plan creates a clear and concise path for the Van Buren County Road Commission to meet its goals to improve the road network under its jurisdiction.



SUMMARY

The objective of road asset management is to ensure that assets provide their required levels of services in the most cost-effective manner.

To efficiently utilize Michigan Transportation Funds, Federal and State Aid, and other local funds requires good planning and the accurate identification of appropriate rehabilitation projects. Assessing roadway conditions is an essential step in this process. Finding effective and creative solutions for stretching existing funds to provide for longevity of the road network is also an important consideration. Finally,

identifying the roadways that provide the greatest benefit to the traveling public is of the utmost importance.

The Van Buren County Road Commission continues to focus on making improvements to the Primary roads under its jurisdiction as these are the roadways that provide the greatest positive impact.

This Asset Management Plan focuses on the management of the Van Buren County Road Commission's road infrastructure assets, which include road surfaces, paved and unpaved, and bridges.



APPENDIX

More information regarding PASER ratings, collection of data, and TAMC's role in PASER ratings:
https://www.michigan.gov/tamc/0,7308,7-356-82158_82627---,00.html

More information regarding IBR ratings: <https://ctt.mtu.edu/inventory-based-rating-system>

The Transportation Asset Management Council's Dashboard: <https://www.michigan.gov/tamc/>

Van Buren County Road Commission's Township Partnership Guide and Mix of Fixes:
<https://www.vbcrc.org/townships>

MDOT Bridge Safety Inspection Report: https://www.michigan.gov/mdot/0,4616,7-151-87728_87844_87847_70812---,00.html

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