



LaGrange County Highway Department

COUNTY ROAD PLAN

Tharon B. Morgan, PE – County Engineer & Benjamin Parish – Highway Superintendent
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Overview

This plan is to update the existing road system within LaGrange County (excluding lake roads which are addressed in the LaGrange County Highway Department – Lake Road Plan). This plan is to be a resource for funding road improvements in the upcoming ten (10) years. This plan does not predict natural disasters or emergencies, which may alter the documented plan and time frames.

History of LaGrange County Road System

LaGrange County was first settled in 1828, established as a County of Indiana in 1832. The first plat was recorded in 1834 what is now the Town of Howe. In the preceding years after settlement, the majority of the main roads we have now were established (as dirt roads). Our records indicate that most of the road paving began around the 1920's.

Roads are maintained, repaired, and improved by the County Highway Department (this excludes private roads that have not been brought up to current highway standards).

Funding

In addition to our County budgeted funding that is allotted each year, the Highway Department is able to apply for funds through the Indiana Department of Transportation (INDOT) and funds through the Federal Highway Administration (FHWA). These funds are awarded through an application and rating process. These funds are able to be applied for only certain times of the year. LaGrange County is currently categorized under 75/25 funding through INDOT and 80/20 funding through FHWA.

It is our intention as the Highway Department to apply for the maximum funds allotted for each year (it is not guaranteed to be awarded the maximum funds each year). We plan to have these awarded funds bid out to contractors. This will allow the work to be completed at a discounted rate for the County, but also keep our employed crew on schedule to maintain the remaining roads during construction.

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Road Types and PASER Ratings

Paved Roads

- Either asphalt or concrete (there are no concrete roads in our County maintained system)
- We utilize the Pavement Surface Evaluation and Rating System (PASER) to analyze our paved road conditions with a uniform rating system. This system rates pavement from one to ten (1-10) based on the existing cracking, rutting, raveling, etc. Based on each rating, there are different kinds of road maintenance procedures that can be beneficial to increase the pavement longevity.

Gravel Roads

- Nearly a third of our County roads are gravel roads, primarily on the west side of the County. Gravel roads are the most cost effective for the Highway Department to maintain. When the road is saturated, it is the best time to grade the roads (reforming the roads to have a crown to allow water to run off the roadway and fill in potholes that have formed since the last road grading).
- At this time, we plan to keep the gravel roads gravel until we address and update the existing paved roads we currently have to maintain.

Private Roads

- Private roads are primarily platted subdivision roads that are not up to the County highway standards. The LaGrange County Highway Department does not maintain private roads. Private roads are marked with blue road signs. If the subdivision residents upgrade the road to the highway standards, then the road may be turned over to the County for maintenance upon approval.

Incorporated Town Roads

- In LaGrange County we have four incorporated towns: Topeka, Wolcottville, Shpshewana, and LaGrange. These towns are maintained by their own street department and funding.

State Maintained Roads

- In LaGrange County we have five (5) INDOT maintained roads: State Road 5, State Road 9, State Road 3, U.S. Route 20, and State Road 120. These roads are maintained through the INDOT Fort Wayne District. INDOT maintains these roads including each intersection approach from the edge of pavement to the stop signs.
- Interstate 80-90 is maintained by the Indiana Toll Road.

Road Maintenance Procedures

Preservation Treatments

- Crack Seal
 - o Asphalt emulsion used to seal cracks in the pavement surface to prevent water infiltration that leads to pavement degradation. Cracks are cleaned of debris prior to sealing. This process is the most beneficial on crack openings less than a quarter inch wide.
- Chip Seal
 - o A layer of asphalt emulsion overlaid with a layer of aggregate, then rolled followed by a broom to remove excess and loose aggregate. This process adds durability and extends the pavement service life by sealing small to moderate surface cracks and improves pavement skid resistance. A double chip seal adds structural stability when needed. Our crew comes through ahead of the chip seal treatment to fill potholes and repair road edges.
- Fog Seal
 - o An asphalt emulsion that used to seal the pavement surface and allows the existing pavement to slightly soften and create a better bond. Fog seal application also gives the pavement the black top look.
- Wedge & Level
 - o A layer of asphalt applied for leveling out imperfections within the current pavement before the application of a final asphalt surface layer. This process eliminates the natural bumps in the pavement and reestablishes a crown in the road to allow adequate water runoff.
- Micro Surface (Seal)
 - o A surface treatment for roads that is laid over the existing pavement to seal and protect it. A double pass allows minor wedge and leveling of the road.
- Horse Trough
 - o A paving process to correct and strengthen the trough in the outer wheel path of the road that is made by heavy horse traffic. We have made a special pavement mix with a local asphalt company that has native stone. The native stone has more strength against the direct force of the horse hooves, allowing the pavement to maintain structural stability longer than normal pavement mix. LaGrange County Highway Department built our own paving mechanism for this maintenance treatment that surrounding counties have duplicated.
- Cold Mix
 - o Also referred to as Pug or Monkey Mix. This material is mixed on site at our gravel pit. The product remains flexible and is able to be used as both a patching material and paving material that can be applied through a paver. Cold Mix adds durability and extends the pavement service life.

- Total Patching
 - o A pothole filling material that consists of asphalt emulsion and aggregate. Total Patch is ideal for sealing pavement edges and filling potholes from failed pavement. The material is applied by using a Total Patcher.
- Extensive (Full Depth) Patching
 - o This treatment involves cutting out the failed pavement areas and removing the failed material down to the road base. The area is then filled with an adhesive material (asphalt emulsion) then asphalt material (cold mix or hot mix) and rolled for compaction.

Rehabilitation Treatments

- Mill & Overlay (Fill)
 - o Milling is performed to remove the existing asphalt to a certain depth with the millings hauled away and stockpiled for future use. After milling and proper road cleaning, hot mix asphalt (HMA) is applied by a paver to at minimum the depth that was milled. This treatment addresses issues like rutting and wide shallow cracking while providing additional structural stability and utilizing the existing pavement base.
- Hot-in-Place Recycling
 - o The existing asphalt pavement is heated to a certain depth, an application of a rejuvenating agent improves the viscosity and the pavement is then scarified (milled) to a desired depth. The rejuvenated mix is in turn redistributed on the roadway followed by an additional overlay or seal coat.
- Full Depth Reclamation (FDR)
 - o An economical process to construct a new stabilized base. The existing roadway is pulverized to a depth between six to twelve inches mixing the existing surface, base, or subbase materials with a stabilizing agent to produce a new stabilized base. The stabilized base is graded, compacted, and rolled before an overlay is applied to provide a new surface.
- Road Reconstruction
 - o This process removes all existing road material (surface, base, and subbase) all the way down to the subgrade (dirt). The subgrade is treated with a stabilization agent or chemical modifications, then new subbase, base, and surface layers are placed. This process is the most time consuming and expensive.

Road Work ahead of Maintenance Procedures

Berming

- A process to remove the earth build up (berm) alongside the road edge. This berm is accumulated over time from a number of factors such as debris in road runoff, winter maintenance salt, and yard/land reshaping. We place our blade at the same slope as the existing road slope and cut back the berm to a certain distance from the road edge. This process allows the water to run off the road, remain off the travel lanes, and infiltrate into the shoulder.

Roadside Ditch

- In instances when the existing land contour is flat with soils that do not infiltrate well and a road that has minimal crown, it may be needed to dig a roadside ditch to allow the water to flow to existing tiles and open ditches. There are areas with existing roadside ditches. These ditches shall not be filled or reformed by anyone other than the Highway Department or its contractors.

Clear Zone

- The clear zone is outlined in the current LaGrange County Highway Standards in Section X as the obstacle free area outside the pavement area along county roads. The clear zone shall be ten (10) feet (plus the shoulder width) from the edge of the through traffic lane or the right-of-way line. This area shall be free of all obstruction except permitted utilities, Postmaster approved mailboxes, and road signs placed by the Highway Department. The clear zone needs to remain as such to allow the area to be used for adequate road and ditch slopes, water runoff, travel visibility, and road safety.

Intersection Visibility

- Intersection visibility is outlined in the current LaGrange County Zoning Ordinance in Article 5, Section A, Bullet 2. "No fence, wall, hedge, tree, shrub, or other object which obstructs sight lines and elevations between 2½ and 8 feet above the street shall be placed, planted, or permitted to remain on any corner lot within the triangular area formed by the street right-of-way lines and a line connecting points 35 feet from the intersection of said street lines, or in the case of a rounded property corner, from the intersection of the street right-of-way lines extended. The same sight line limitations described above, shall apply to any area within 10 feet of the intersection of a street right-of-way line with the edge of any driveway pavement or alley line. No portion of a private driveway for a corner lot shall be permitted on dedicated rights-of-way within 70 feet of the centerline intersections of streets adjacent to the corner lot." Intersection visibility is

important to have a clear view of the oncoming traffic in any direction for the traveling public.

Tree Trimming

- Tree trimming is essential to keep low hanging branches from obstructing and invading the clear zone and intersection visibility area. It is also important to remove dead trees that are in the right-of-way to eliminate the potential of the said trees falling and blocking the roadway.

Culvert Replacement

- When possible (in non-emergency events), it is ideal to replace failing culverts under the road prior to any new maintenance being completed. Culvert work prior to road work allows there to be less pavement joints that are able to fail more quickly. We plan to inspect all culverts along a corridor prior to road maintenance. In coming years, we would like to have all culverts documented and located for adequate information along all LaGrange County roads.
- The Highway Department has been known for make-shift riser manholes. It is planned to locate and replace all of these riser manholes to standard cast concrete manholes with grated manhole covers.

Townships

Per the PASER ratings: scores of eight or above are considered 'good' and require minimal maintenance. Scores of five through seven are considered 'fair' and are able to be maintained by the LaGrange County Highway Department crew. Scores of four or less will be on our plan to seek outside funds to do major maintenance or reconstruction treatments. Overall, the Highway Department will continue to maintain all the roads. In the coming years it is planned to berm every road, especially before any major road treatment is completed. Each year we are planning to apply for State and Federal funds to alleviate and benefit the Highway Department budget.

It is also planned to replace large culverts (over three feet in diameter) at a rate of at least five per year. Typically, these projects need to be contracted out due to the depth of the culvert and overall size. Our current documented records are ten years old and in the next two years plan to have all the large culverts re-inspected and documented.

Bridges in LaGrange County will continue to be inspected every two years as contracted through INDOT. Each inspection produces a bridge report that is recorded and in turn used to apply for funding. In addition, the Highway Department has a yearly contract with a local bridge maintenance contractor that completes minor maintenance on all of the LaGrange County bridge inventory.

The right-of-way must remain clear of all unpermitted obstructions for traveler safety. It is planned to reclaim the clear zone and use it to benefit the travelling public and road stability. This task will require numerous resident interactions to move obstructions, but in the grand scheme it will be an asset for the entire County.

Reference the 'Road Map of LaGrange County with PASER Ratings' attached in this document for the following township information.

Eden (Township 36 North, Range 8 East)

- Eden township is highly trafficked by RV factory workers/suppliers and horse and buggies. Neighboring Elkhart County is currently doing road work and closures on County Road 38 (the extension of our County Road 600 South). This work has hindered RV factory traffic and rerouted the brunt of the traffic to our CR 500 South and CR 700 South. This will degrade the detour routes even more rapidly. We plan to work with INDOT to re-classify CR 600 South so that it is eligible for Federal funding. This corridor is beyond due for an upgrade with the amount of traffic that is carried. The intersection of CR 600 South and SR 5 is continually being monitored by INDOT as well for traffic lights or other traffic safety devices.

- This township is due for several road maintenance treatments and will need an aggressive approach to bring the routes up to 'good' PASER classifications. Treatments will have to also factor the saturated soils and large tile systems found in Eden Township (primarily soils that are seen in a swamp).
 - o Honeyville – This town is unincorporated, so the LaGrange County Highway Department maintains the roads. Honeyville does not have any town roads that are not main County roads.
 - o Topeka – This town is incorporated, so Topeka Street Department maintains the road system within the town limits.

Clearspring (Township 36 North, Range 9 East)

- The majority of the north-south routes in Clearspring Township are 'poor' rated and will need rehabilitation treatments. This township is one of the lowest PASER rated overall.
 - o Emma – This town is unincorporated, so the LaGrange County Highway Department maintains the roads. Emma does not have any town roads that are not main County roads.

Johnson (Township 36 North, Range 10 East)

- Johnson township retains numerous lakes that substantially increase traffic in the summer months. The majority of the road corridors in this township are rated 'fair'. These roads will require preservation treatments that can primarily be completed by our department crew.
 - o Valentine – This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are a few town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.
 - o Woodruff – This town is unincorporated, so the LaGrange County Highway Department maintains the roads. Woodruff does not have any town roads that are not main County roads.
 - o Wolcottville – This town is incorporated, so Wolcottville Street Department maintains the road system within the town limits.

Milford (Township 36 North, Range 11 East)

- Milford township along with the majority of the eastern townships have the least amount of horse and buggy traffic currently. This has allowed the eastern townships to maintain higher road ratings and less extensive maintenance needed. Current road service life is coming to the final years, but with even minimal

rehabilitation maintenance treatments in this township will result in several years of service life added. Most road segments are short distance sections that will allow for more funds covering more roads other than a single road.

- South Milford – This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are several town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.
- Stroh – This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are several town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.
- Elmira - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are a few town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.

Newbury (Township 37 North, Range 8 East)

- The majority of Newbury township is scored as high 'fair' ratings. The remainder of the road segments that are below in the 'poor' rating are short road corridors that are able to be rehabilitated by our crew or are currently under a contract with INDOT funds. The large subdivision of Valley Hills Estates is a good candidate for an overlay that will in turn have a long service life due to the lower traffic speeds.
 - Shipshewana - This town is incorporated, so Shipshewana Street Department maintains the road system within the town limits.

Clay (Township 37 North, Range 9 East)

- Clay township has been approached proactively based on the higher road ratings. The remaining roads with lower PASER ratings will be addressed in the near future with corresponding treatment procedures.

Bloomfield (Township 37 North, Range 10 East)

- Bloomfield township has a few larger road segments that are in 'poor' rating condition and will need maintenance attention in the foreseeable future. Several treatment options are now approved by INDOT standards that would be beneficial on these road segments.
 - LaGrange – This town is incorporated, so LaGrange Street Department maintains the road system within the town limits.

- Plato - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. Plato does not have any town roads that are not main County roads.

Springfield (Township 37 North, Range 11 East)

- Springfield township along with the majority of the eastern townships have the least amount of horse and buggy traffic currently. This has allowed the eastern townships to maintain higher road ratings and less extensive maintenance needed. Current road service life is coming to the final years, but with even minimal rehabilitation maintenance treatments in this township will result in several years of service life added. There are large road segments that need to be addressed immediately to avoid the expensive road reconstruction treatment.
 - Brushy Prairie - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. Brushy Prairie has a couple unimproved roads that are not main County roads.
 - Moungou - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are several town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.

VanBuren (Township 38 North, Range 8 & 9 East)

- The majority of VanBuren township is rated 'fair to good'. In the upcoming years, these road segments will need an asphalt overlay to preserve and improve the existing pavement.
 - Scott - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are a few town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.

Lima (Township 38 North, Range 9 & 10 East)

- There are few road corridors that are scored a 'poor' PASER rating in Lima township. These corridors will need preventative and rehabilitation treatments to stabilize and revitalize the pavement and road base. The remaining roads will continually be maintained to higher road ratings.
 - Howe - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are several town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.

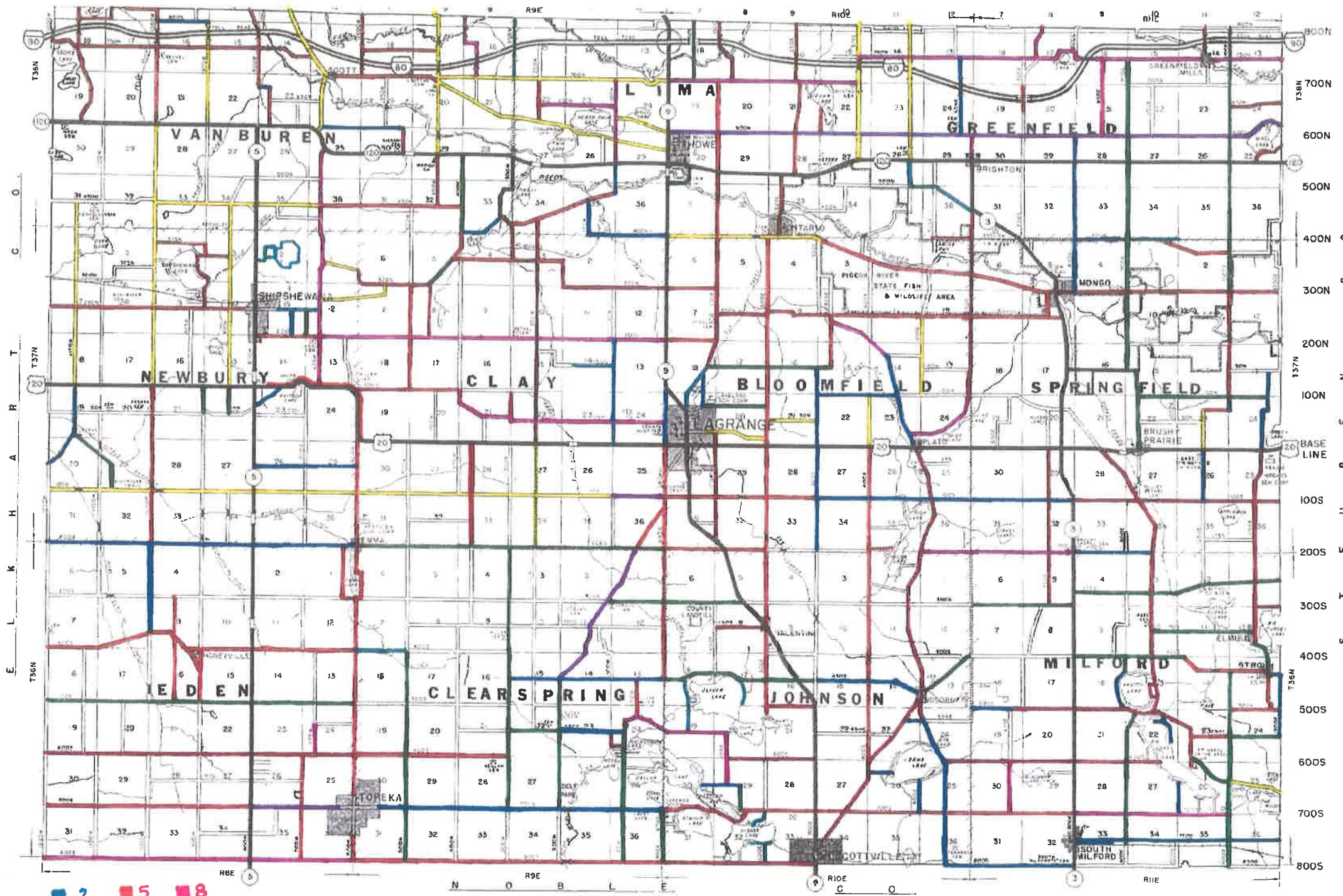
- Ontario - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are a few town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.

Greenfield (Township 38 North, Range 10 & 11 East)

- There are few road corridors that are scored a 'poor' PASER rating in Greenfield township. These corridors will need preventative and rehabilitation treatments to stabilize and revitalize the pavement and road base. The remaining roads will continually be maintained to higher road ratings. Greenfield township along with the majority of the eastern townships have the least amount of horse and buggy traffic currently. This has allowed the eastern townships to maintain higher road ratings and less extensive maintenance needed. Current road service life is coming to the final years, but with even minimal rehabilitation maintenance treatments in this township will result in several years of service life added.
 - Brighton - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. There are a few town roads that will be addressed with road maintenance procedures that are beneficial to the current road type and corresponding PASER rating.
 - Greenfield Mills - This town is unincorporated, so the LaGrange County Highway Department maintains the roads. Greenfield Mills does not have any town roads that are not main County roads.

Conclusion

This is a proactive approach that the Highway Department plans to pursue. To bring all roads to a higher PASER rating, there will need to be maximum funds used from all monetary avenues. This process will take several years to be completed. This plan does not predict natural disasters or emergencies, which may alter the documented plan and time frames.



- 2 ■ 5 ■ 8
- 3 ■ 6 ■ 9
- 4 ■ 7

LEGEND
 GRVEL
 BLACKTOP
 STATE & FEDERAL
 TOWNSHIP

Asphalt PASER

Modified for Michigan TAMC Data Collection

◆ Denotes Priority Distress

Good	Asphalt 10	Asphalt 9	Asphalt 8
	New construction (<1 year old) No defects <u>Recent base improvement</u> <i>Possible Action:</i> PPM	Like new condition (>1 year old) No defects <u>Recent overlay with or without a crush and shape</u> <i>Possible Action:</i> PPM	◆ Transverse cracks: >40' apart Cracks: tight (hairline) or sealed Longitudinal cracks: few, on joints <u>Recent seal coat or slurry seal (*see below)</u> <i>Possible Action:</i> Crack seal (PPM)
Fair	Asphalt 7	Asphalt 6	Asphalt 5
	◆ Transverse cracks: 10'-40' apart Cracks: open < ¼" Crack erosion: none or little Surface raveling: none or little Patches: none or few in excellent condition <u>First signs of wear</u> <i>Possible Action:</i> Maintain with crack seal, fog seal	◆ Transverse cracks: < 10' apart ◆ Block cracking: 6'-10' Blocks (large, stable) Cracks open ¼" – ½" Surface raveling: slight Patches: few in good condition Polishing or flushing: slight, moderate <u>Sound structural condition</u> <i>Possible Action:</i> Maintain with sealcoat	◆ Block cracking: 1' – 5' blocks ◆ Longitudinal cracks: first signs, at edge ◆ Secondary cracks: first signs Cracks open >½" Surface raveling: moderate Patches/wedging: good condition Flushing & polishing: extensive, severe <u>Sound structural condition</u> <i>Possible Action:</i> Maintain with sealcoat or thin overlay
Poor	Asphalt 4	Asphalt 3	Asphalt 2
	◆ Block cracking: <1' blocks ◆ Wheel-path cracking (longitudinal) ◆ Rutting: ½" - 1" deep Transverse cracks: slight erosion Longitudinal cracks: slight erosion Surface raveling: severe Patches: fair condition <u>First signs of structural weakening</u> <i>Possible Action:</i> Structural overlay >2" Underseal	◆ Block cracking: severe (like alligator) ◆ Alligator cracking: initial, < 25% ◆ Rutting: 1"- 2" deep Transverse cracks: extensive erosion Longitudinal cracks: extensive erosion Patches: fair/poor condition Potholes: occasional <i>Possible Action:</i> Structural overlay >2" Patching & repair prior to an overlay Milling to extend overlay life	◆ Alligator cracks: > 25% ◆ Rutting or distortion: >2" Cracks: closely spaced, with erosion Patches: extensive, in poor condition Potholes: frequent <i>Possible Action:</i> Reconstruction with base repair Crush and shape
			Asphalt 1
			Like PASER 2 but with visible base and: Surface integrity: lost Surface distress: extensive <i>Possible Action:</i> Reconstruction with base repair

General Rating Tips

Rate surface distress, not ride quality. Be aware of cracks in the wheel path; they can be hard to see and do not affect the ride.

Disregard the shoulder. Rate only the driveable pavement, edge line to edge line.

Do not ignore reflective cracks. Rate by assessing the type of crack (e.g. transverse, longitudinal, alligator).

Rate the current surface condition. If construction is in progress (i.e., work is active) but you are driving on the old surface, rate the new surface. Some barrels by the roadside is *not* construction in progress.

Rate the lane with the worst condition when lanes have differing conditions. For variable surface types, rate the worst lane and select it as the *Surface Subtype*.

Rate what you see, not what distresses you think might happen in the future.

Rate roads with the same scrutiny regardless of their use, ownership, or functional class.

Rutting often has visual cues like plow scars. Get out and measure using a straight edge and tape measure. Use caution! Rutting measurement changes are detailed in the *TAMC Data Collection Training Manual's* "Michigan-specific Asphalt Road Rating Guide" section, page 7.

Composite Pavement consists of a concrete pavement overlaid with asphalt; rate it based on the uppermost surface (e.g. asphalt); and note the *Surface Subtype* as composite. A repaired concrete pavement's highest rating is a 9. While it may have had concrete joint repairs, no other defects can be present and the condition is "like new". Note, this is *not* what the *Concrete PASER Manual* says.

Sealcoat pavements are sealcoat over gravel whereas sealcoat treatment is sealcoat applied over asphalt. See pages 6-7 of the TAMC Data Collection Manual for rating sealcoat pavements. *With proactive sealcoat treatments, do not downgrade an asphalt PASER 9 or 10 (no defects) to an asphalt PASER 8 because of the treatment. Rate it based on the distresses that are visible (see *TAMC Data Collection Training Manual's* "Proactive Sealcoat Treatments on Asphalt PASER 9" section, page 8).