



Impacts of a Proposed Sand and Gravel Operation in Norvell Township

NORVELL TOWNSHIP, JACKSON COUNTY, MICHIGAN

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Table of Contents

Introduction	1
Scope of the Mining Project	1
Fiscal Impact	2
Impact on the Value of Residential Properties.....	8
Traffic and Road Impacts.....	9
Impact on Agriculture	12

Appendix

Profile of McKenna

Resume of Christopher J. Doozan, AICP

Impacts of a Proposed Sand and Gravel Operation In Norvell Township

INTRODUCTION

The **Irish Hills Concerned Citizens** engaged the services of McKenna, a planning firm based in Northville, Michigan, to complete a preliminary investigation of the impacts of a sand and gravel operation on the east side of Norvell Township, which is proposed by American Aggregates of Michigan, Inc.

McKenna was asked to initially focus on the following topics:

1. The fiscal impact of the sand and gravel operation.
2. The potential impact of the operation on the value of residential properties near the mining site and along the haul route.
3. Anticipated traffic and road impacts.

We also examined the impact of the project on agriculture. This report provides preliminary findings on each of these topics.

SCOPE OF THE MINING PROJECT

American Aggregates of Michigan, Inc. (AAOM) proposes to mine sand and gravel on 626.4 acres of land it owns on the east side of Norvell Township, in southeast Jackson County. The area that is proposed to be mined is located on the north and south sides of Horning Road, west of Watkins Road.¹

The areas that would be subject to actual mining activity encompass 232.5 acres. According to the application package, there are 12,500,000 cubic yards (or about 17,000,000 tons²) of sand and gravel reserves in these areas.

According to the introductory letter from Zausmer, the mining project will consist of 10 phases, with each phase lasting two years.³ Reclamation of the site will last one year after all mining has ceased. Mining and sorting will commence on the north side of Horning Road. In phase 4, a conveyor line will be installed across Horning Road to bring product from the south mining site to the sorting facilities on the north side.

According to the applicant's Project Report, mining and processing activities will generally occur between 7:00 am and 8:00 pm, Monday through Friday, and from 7:00 am through 12:00 pm on Saturday. Truck loading and shipping will occur between 7:00 am and 7:00 pm, Monday through Friday, and from 7:00 am through 12:00 pm on Saturday. There will be 9 inbound and 9 outbound trucks per hour.

The subject property is currently zoned AG, Agricultural Residential. Mining activities and operations are listed as conditional uses in this district. Consistent with the current zoning, most of the subject property is now being farmed, although there are some forested areas and wetlands.

Three possible haul routes were considered, but the favored route would proceed from the site entry on the north side of Horning Road, 300 feet east of Lawrence Road, then west on Horning Road, then south on Hardcastle Road, and then east on M-124 to US-12. At US-12, 80 percent of the trucks are projected to go to the east and 20 percent are projected to go west.⁴

¹ 384.7 acres are located on the north side of Horning Road, and 241.7 acres are located on the south side.

² Page 2 of the application states that the project site contains 10,400,000 tons of marketable sand and gravel, so there is a discrepancy in the application package.

³ Elsewhere, the applicant's submittal indicates there will be 5 or 6 phases.

⁴ There are unconfirmed indications that applicant intends to revise the traffic plan so that the 80%/20% split would occur at M-124, rather than at US-12. Under this alternative, the trucks going west would go through Brooklyn.



Current conditions on the project site—north side of Horning Road

FISCAL IMPACT

The subject property consists of six parcels that are classified as Agriculture by the Assessor and have a combined taxable value of \$623,779 (2025 records, see Table 1). It is estimated that the property currently generates \$18,219 annually in property taxes for all taxing jurisdictions, of which \$1,152 goes to Norvell Township.

The Norvell Township millage has two components: 1) 0.7436 mills are for Township operations, and 2) 1.1030 mills are for fire and rescue services. Thus, the subject property annually generates approximately \$464 in property taxes for operations and \$688 for fire and rescue.

The total property tax generated under the present agricultural land use for all taxing jurisdictions over the 20-year project life would be \$364,381. All six properties currently qualify for the Qualified Agricultural Property Exemption, which exempts certain farmlands from the 18-mill state operating millage for schools.

Future Property Tax Projections

One of the goals of this fiscal impact analysis is to project future property tax revenues in the event that a gravel mine is established on the subject property. The first step in preparing projections is determining the future taxable value per acre. Once a gravel mine is established on a parcel the Assessor will change the assessment classification from Agriculture to Industrial, and the parcel will no longer be eligible for the Qualified Agricultural Property Exemption.

Table 1

Estimates of Property Tax Generated by Existing Agricultural Land Use (2025)

	Norvell Township	Jackson County	Columbia School District	Columbia School District Debt	Jackson Intermediate Schools	Jackson Comm. College	Comm. College Sinking Fund	State Education Tax	Jackson District Library
Millage Rate	1.8466 ¹	7.0334 ²	18.0000	2.1000	8.6614	1.1260	0.6367	6.000	1.7308
Taxable Value	\$623,779	\$623,779	\$623,779	\$623,779	\$623,779	\$623,779	\$623,779	\$623,779	\$623,779
Property Tax	\$1,152	\$4,432	Exempt ³	\$1,309.91	\$5,403	\$702	\$397.13	\$3,743	\$1,080
Cumulative Tax Over 20 Years ⁴	\$23,040	\$88,640	Exempt ³	\$26,198	\$108,060	\$14,040	\$7,943	\$74,860	\$21,600

Footnotes:

- 1 1.8466 millage is based on 0.7436 mills for operating and 1,1030 mills for fire and rescue.
- 2 7.0334 millage is based on 5.0361 mills for County operating, 0.5930 mills for senior services, 0.2461 mills for medical care, 0.4917 mills for Lifeways, 0.4924 mills for parks, and 0.2461 mills for animal control.
- 3 The property is exempt from the Columbia Schools tax for operations because it is eligible for the Qualified Agricultural Property Exemption.
- 4 20 years is the estimated project life of the sand and gravel operation. Estimates are in 2026 dollars.

To estimate the future taxable value per acre we gathered taxable value information from Township Assessors for fifteen properties occupied by active gravel mining operations in Oxford Township, Oakland County, and Scipio Township, Hillsdale County. The taxable value per acre ranged between \$1,000 and \$7,139.33, with an average of \$2,992 (see Table 2).

Table 2
Value of Existing Gravel Mines

Parcel Number in Oxford Township	Acreage	Taxable Value	Taxable Value per Acre
04-23-200-002	494.26	\$2,606,510	\$5,236.56
04-24-100-001	565.02	\$1,602,090	\$2,835.46
04-15-100-001	484.78	\$1,109,790	\$2,289.27
04-14-300-001	233.4	\$506,450	\$2,169.88
04-14-100-004	23.64	\$60,620	\$2,564.30
04-14-100-001	43	\$182,670	\$4,248.14
04-14-100-003	13.78	\$98,380	\$7,139.33
04-11-300-005	40.01	\$104,320	\$2,607.35
04-11-300-004	38.29	\$162,670	\$4,248.37
04-10-400-004	54.4	\$117,520	\$2,160.29
Parcel Number in Scipio Township	Acreage	Taxable Value	Taxable Value per Acre
02-026-100-001	80	\$106,971	\$1,337
02-026-300-004	80	\$80,019	\$1,000
02-027-200-007	67.42	\$68,344	\$1,014
02-027-400-002	29.32	\$52,915	\$1,805
02-027-400-004	80	\$103,313	\$1,291
Totals	2,327.33	\$6,962,582	\$2,992

The next step in the fiscal impact analysis is to insert the \$2,992 average taxable value per acre figure from Table 2 in a formula to project the property tax revenue that would be generated by a gravel mine classified Industrial in Norvell Township. This has been accomplished in Table 3, which projects tax revenue for the 20-year life of the project.

Table 3 is based on the following important assumption: as noted in the applicant's proposal, the operation will be phased in over a period of years. Parcels that are not being mined will continue to be used for agriculture. Not knowing the phasing schedule for the project, for the purposes of making fiscal impact projections we phased the mining in in equal increments over a 15-year period. This phasing is reflected in column 2 in Table 3 and is folded into the tax projection formulas. As seen in the sixth column in Table 3, the property tax revenue for all taxing jurisdictions from the gravel mine is projected to begin at \$5,892.26 in the first year, growing to \$88,339.70 by year 15.

As noted, portions of the land will continue to be used and taxed as agriculture for a period of time. This is reflected in the column titled "Estimated Percent Agriculture" in the second part of Table 3. In the formula to calculate property tax income from agriculture we used the current average taxable value per acre of \$995.82. Table 3 projects that the property tax revenue from agriculture for all jurisdictions will be \$16,961.62 in the first year, decreasing to \$0 by year 15.

The final column in Table 3 adds the property tax revenue from the gravel mine operations and agricultural land, providing the Total Property Tax Revenue. In the first year, revenue is projected to be \$22,853.88 and by year 15 it will have increased to \$88,339.70.

Table 3
20-Year Property Tax Projections

Year	Estimated Percent Industrial (Mining)	Acreage-All Parcels	Average Taxable Value per Acre (see Table 2)	Millage Rate- All Taxing Jurisdictions (see Table 1)	Property Tax Revenue from Industrial (Mining)	Estimated Percent Agriculture	Acreage- All Parcels	Current Average Taxable Value per Acre	Millage Rate- All Taxing Jurisdictions	Projected Property Tax Revenue from Agriculture	Total Projected Property Tax Revenue (Industrial + Agriculture)
1	6.67	626.4	\$2,992.00	47.1349	\$5,892.26	93.33	626.4	\$995.82	29.1349	\$16,961.62	\$22,853.88
2	13.33	626.4	\$2,992.00	47.1349	\$11,775.68	86.67	626.4	\$995.82	29.1349	\$15,751.25	\$27,526.93
3	20.00	626.4	\$2,992.00	47.1349	\$17,667.94	80.00	626.4	\$995.82	29.1349	\$14,539.05	\$32,206.99
4	26.67	626.4	\$2,992.00	47.1349	\$23,560.20	73.33	626.4	\$995.82	29.1349	\$13,326.86	\$36,887.06
5	33.33	626.4	\$2,992.00	47.1349	\$29,443.62	66.67	626.4	\$995.82	29.1349	\$12,116.48	\$41,560.11
6	40.00	626.4	\$2,992.00	47.1349	\$35,335.88	60.00	626.4	\$995.82	29.1349	\$10,904.29	\$46,240.17
7	46.67	626.4	\$2,992.00	47.1349	\$41,228.14	53.33	626.4	\$995.82	29.1349	\$9,692.10	\$50,920.23
8	53.33	626.4	\$2,992.00	47.1349	\$47,111.56	46.67	626.4	\$995.82	29.1349	\$8,481.72	\$55,593.28
9	60.00	626.4	\$2,992.00	47.1349	\$53,003.82	40.00	626.4	\$995.82	29.1349	\$7,269.53	\$60,273.35
10	66.67	626.4	\$2,992.00	47.1349	\$58,896.08	33.33	626.4	\$995.82	29.1349	\$6,057.33	\$64,953.41
11	73.33	626.4	\$2,992.00	47.1349	\$64,779.50	26.67	626.4	\$995.82	29.1349	\$4,846.96	\$69,626.46
12	80.00	626.4	\$2,992.00	47.1349	\$70,671.76	20.00	626.4	\$995.82	29.1349	\$3,634.76	\$74,306.52
13	86.67	626.4	\$2,992.00	47.1349	\$76,564.02	13.33	626.4	\$995.82	29.1349	\$2,422.57	\$78,986.59
14	93.33	626.4	\$2,992.00	47.1349	\$82,447.44	6.67	626.4	\$995.82	29.1349	\$1,212.19	\$83,659.64
15	100	626.4	\$2,992.00	47.1349	\$88,339.70	0.00	626.4	\$995.82	29.1349	\$0.00	\$88,339.70
16	100	626.4	\$2,992.00	47.1349	\$88,339.70	0.00	626.4	\$995.82	29.1349	\$0.00	\$88,339.70
17	100	626.4	\$2,992.00	47.1349	\$88,339.70	0.00	626.4	\$995.82	29.1349	\$0.00	\$88,339.70
18	100	626.4	\$2,992.00	47.1349	\$88,339.70	0.00	626.4	\$995.82	29.1349	\$0.00	\$88,339.70
19	100	626.4	\$2,992.00	47.1349	\$88,339.70	0.00	626.4	\$995.82	29.1349	\$0.00	\$88,339.70
20	100	626.4	\$2,992.00	47.1349	\$88,339.70	0.00	626.4	\$995.82	29.1349	\$0.00	\$88,339.70
Totals					\$1,148,416.12					\$127,216.71	\$1,275,632.83

Table 4 takes a closer look at Norvell Township, with computations that are based on the same assumptions that apply to Table 3. Notably, Table 4 examines tax revenue for operations and fire and rescue separately.

In terms of revenue generated for Township *operations*, Table 4 shows that over 20 years the gravel mine operations would generate approximately \$18,117.41 and the agricultural land would generate \$3,246.91, for a total of \$21,364.32. If the land was left as agriculture for the entire 20-year period, it would generate \$9,276.88 for Township operations. **Thus, the net fiscal benefit for Township operations over a 20-year period from the gravel mining operation on 626.4 acres is projected to be approximately \$12,087.44, or an annual average of \$604.37.**

Regarding *fire and rescue*, the second part of Table 4 shows that over 20 years the gravel mining operations would generate approximately \$26,873.99 and the agricultural land would generate \$4,816.22, for a total of \$31,690.21. If the land was left as agriculture for the entire 20-year period, it would generate \$13,760.62 for fire and rescue. **Thus, the net fiscal benefit for Township fire and rescue services over a 20-year period from the gravel mining operation on 626.4 acres is projected to be approximately \$17,929.59, or an annual average of \$896.48.**

The net benefit of \$604.37 for Township operations is a particularly important value because it must be adequate to cover any additional expenses the Township incurs because of the presence of a gravel mining operation.

One of the largest expenses related to the sand and gravel operation is expected to be related to improvements to roads along the haul route. The 2025-2026 Township budget allocates \$113,484 for road improvements across the entire Township. A portion of this amount, \$110,000, is a matching fund that helps pay for the work that the Jackson County Road Department completes on roads throughout the Township (all public roads in the Township are under the jurisdiction of the Jackson County Road Department, except for M-124, which is under the jurisdiction of Michigan Department of Transportation).

According to an April 3, 2026, press release from the Township Supervisor, there are 69 miles of roads in the Township (38 miles paved, 31 miles unpaved local). A budget of \$113,484 provides an average of only \$1,645 per mile of road for maintenance. The preferred haul route along Horning and Hardcastle Roads is approximately 3.1 miles in length, measured from the proposed entrance to the intersection with M-124.

Later in this report the poor condition of Horning and Hardcastle Roads is discussed. The truck traffic generated by the proposed sand and gravel operation will turn these roads to rubble if they are not first reconstructed to Class A, all season status (these roads are not currently all season roads, according to the Jackson County Road Department).

To fully reconstruct a rural, paved, two-lane road into a Class A (all-season) road in Michigan, the cost generally ranges from \$2.0 million to \$3.4 million per mile. Thus, reconstruction of 3.1 miles along Horning and Hardcastle Roads could cost between \$6.2 million and \$10.5 million.

The application proposes to fund road improvements only to the extent provided for in the Township's Mining Activities and Operations regulations in Article 7 of the Zoning Ordinance. Section 7.2(B)(23) calls for an Excavation Surcharge "to assist in the remediation of the adverse effects of mining activity has on streets and roads in the Township. . ." This surcharge is a minimum of 4.0 cents per ton of any natural resource shipped from the site that has been mined within the boundaries of the Township.

If there are 10,400,000 tons of marketable sand and gravel on the site, the Excavation Surcharge would generate approximately \$416,000 over the life of the project, or only \$20,800 per year. Clearly, the amount of money available for necessary road improvements would fall far short—by *millions of dollars*—of what is needed.⁵

⁵ A fact sheet from the Michigan Department of Transportation regarding this project included the following statement: "MDOT is unable to require a highway damage bond from a private development. MDOT is unable to assess fees to lawful users of state highways." This statement suggests that obtaining road funding from AAOM or Levy will be unlikely.

Table 4
20-Year Township Property Tax Projections

Year	Future Industrial Tax Revenue Generated for Twp. Operations	Future Agricultural Tax Revenue Generated for Twp. Operations	Current Agricultural Tax Revenue Generated for Twp. Operations		Future Industrial Tax Revenue Generated for Twp. Fire	Future Agricultural Tax Revenue Generated for Twp. Fire	Current Agricultural Tax Revenue Generated for Twp. Fire
1	\$92.96	\$432.91	\$463.84		\$137.88	\$642.14	\$688.03
2	\$185.77	\$402.01	\$463.84		\$275.56	\$596.32	\$688.03
3	\$278.73	\$371.08	\$463.84		\$413.45	\$550.42	\$688.03
4	\$371.69	\$340.14	\$463.84		\$551.33	\$504.53	\$688.03
5	\$464.50	\$309.24	\$463.84		\$689.01	\$458.71	\$688.03
6	\$557.46	\$278.31	\$463.84		\$826.89	\$412.82	\$688.03
7	\$650.41	\$247.37	\$463.84		\$964.78	\$366.93	\$688.03
8	\$743.23	\$216.48	\$463.84		\$1,102.45	\$321.10	\$688.03
9	\$836.19	\$185.54	\$463.84		\$1,240.34	\$275.21	\$688.03
10	\$929.14	\$154.60	\$463.84		\$1,378.22	\$229.32	\$688.03
11	\$1,021.96	\$123.71	\$463.84		\$1,515.90	\$183.50	\$688.03
12	\$1,114.92	\$92.77	\$463.84		\$1,653.78	\$137.61	\$688.03
13	\$1,207.87	\$61.83	\$463.84		\$1,791.67	\$91.71	\$688.03
14	\$1,300.69	\$30.94	\$463.84		\$1,929.35	\$45.89	\$688.03
15	\$1,393.65	\$0.00	\$463.84		\$2,067.23	\$0.00	\$688.03
16	\$1,393.65	\$0.00	\$463.84		\$2,067.23	\$0.00	\$688.03
17	\$1,393.65	\$0.00	\$463.84		\$2,067.23	\$0.00	\$688.03
18	\$1,393.65	\$0.00	\$463.84		\$2,067.23	\$0.00	\$688.03
19	\$1,393.65	\$0.00	\$463.84		\$2,067.23	\$0.00	\$688.03
20	\$1,393.65	\$0.00	\$463.84		\$2,067.23	\$0.00	\$688.03
Totals	\$18,117.41	\$3,246.91	\$9,276.88		\$26,873.99	\$4,816.22	\$13,760.62

In addition to road improvement and maintenance costs, the Township would incur administrative costs related to operation of the gravel mining operation. The administrative burden would likely fall mostly on the shoulders of the Zoning Administrator, although the involvement of the Township Supervisor would probably also be necessary. Primary administrative tasks include reviewing and processing applications to build mining facilities, interpretation of the Zoning Ordinance regulations and conditions of approval, inspections, processing complaints, and possibly issuing and following up on tickets.

The Zoning Administrator's position is currently part-time, paying \$21.50 per hour. The gravel mine will generate an average of \$604.37 in additional tax revenue for Township operations per year (see above), or \$11.62 per week. Thus, the additional revenue generated by the gravel mining operation would pay for only about a half hour of the Zoning Administrator's time each week—hardly enough to address all the additional tasks associated with the gravel mine.

IMPACT ON THE VALUE OF RESIDENTIAL PROPERTIES

The applicant submitted two studies that are intended to demonstrate that gravel mines do not have a negative impact on surrounding residential property values. Both studies are flawed to the extent that their conclusions are meaningless.

The first study, titled **Market Study—Matched Pair and Sales Data Analysis**, was prepared by Andrew Reed & Associates, Inc., in July 2025. The second study, titled **Expert Witness Report of Kevin A. Kernen, MAI and Shaun B. Toupin**, was prepared in October 2015.

The purpose of the Reed study was “to isolate any potential impact from truck haul route exposure and/or mining operation exposure.” The study, however, focused primarily on mining operation exposure. The study stated it found that the gravel mining impacts were “clearly statistically insignificant.” This conclusion is totally inappropriate because the study is not a legitimate statistical study.

The Expert Witness Report presents a sale price analysis involving five subdivisions or condominiums in metropolitan Detroit and an assessment trend analysis involving properties in the Charter Township of Highland and the Charter Township of Milford.

We do not believe these two studies can be relied upon to give a true indication of the impact of a sand and gravel operation on residential property values for the following reasons:

- The conclusions of the studies are called into question because of their small sample sizes, particularly in the Reed study and haul route sale price analysis in the Expert Witness Report. Small sample size limits the reliability and accuracy of research. Small sample size leads to low statistical power (failing to detect real effects), inflated sampling error, poor generalizability to wider populations, and high sensitivity to outliers.
- There is a high opportunity for bias in the selection of comparables in the matched pair analysis and sale price analysis. The matched pair analysis in the Reed report, in particular, appears to be highly selective so as to produce a given result. We question whether the matched pair analysis is even the appropriate analytical tool for a study of this nature.
- The Reed study, in particular, focuses primarily on the impacts on values of residences in proximity to a mining operation, rather than impacts on values of residences along the haul route. In Norvell Township, there are a few homes in proximity to the proposed mining site, but the more serious impact will be on the many residences along the haul route, especially those in the densely developed residential area north of Wamplers Lake on M-124. From this perspective, the Reed study is not relevant to the Norvell Township case.
- There are multiple factors that could have affected the outcome of the studies, which should have been considered and researched. For example:
 - The studies fail to take into account the fact that the gravel mines used in their examples have been in existence for several years. The studies may have produced very different results if

they had considered residential property values a year before and a year after the initial onset of the mining activity.

- Other pertinent factors that could have skewed the results of the studies include the level of activity at each gravel mining site (for example, how much truck traffic was being generated on a daily basis at each site), the distance between the actual mining activity and the residential uses, and the presence or absence of berms or other buffers.
- The Expert Witness Report compares assessed values of residential properties in subdivisions and condominiums that are in proximity to high volume roads. This scenario is not at all comparable to the situation in Norvell Township, where residential properties near the proposed sand and gravel operation and along the preferred haul route are not in subdivisions or condominiums, but are on metes and bounds parcels along low volume roads.

In summary, for the reasons cited above, we find the Reed study and the Expert Witness Report to be deeply flawed. These studies should not be used for making critical decisions concerning the Norvell Township sand and gravel operation. It is beyond the scope of this preliminary study to pursue this topic further, but future research into the validity of other studies on this topic should be considered. The professional services of an economist or market researcher could be engaged to prepare a financial impact study that is specifically tailored to the conditions in Norvell Township.

TRAFFIC AND ROAD IMPACTS

The application package contained a traffic impact study that was completed by Fishbeck in February 2025. The study focused solely on six intersections along three alternative haul routes where truck movements would occur. Three intersections involved the preferred Horning/Hardcastle/M-124 haul route:

- Hardcastle Road and Horning Road
- M-124 and Hardcastle Road
- M-124 and US-12

The traffic impact study concluded that “the proposed mining operations will not result in any significant operational impact to the adjacent road network” and “no off-site improvements are required.”

However, the study failed to consider or evaluate the condition of Horning and Hardcastle Roads, the lack of shoulders along these two roads, pedestrian and bicyclist safety issues, particularly, along M-124, and other pertinent concerns.

Furthermore, the traffic volume data on which the study was based were collected on February 14, 2023, when traffic was at its lowest. Different conclusions might have been reached if the traffic counts had been collected in July, during the peak summer tourist season.

For the reasons stated above, we consider the study incomplete and woefully inadequate.

It is first important to consider the existing conditions under which the Norvell sand and gravel operation is proposed. Horning and Hardcastle Roads are two-lane asphalt roads, without shoulders, in poor condition (see photo below). They have numerous cracks and multiple potholes. Except for a small stretch of overlay on Hardcastle Road in the vicinity of Owen Road, there has not been recent major maintenance activity.



Current condition of Horning Road

Although both roads are listed as truck routes in the Township's Truck Route Ordinance⁶, neither road is a Class A, all season road. Consequently, in the spring when the "frost laws" are active, trucks must carry only a fraction of their typical load on these roads. The State Police enforce vehicle weight restrictions in Michigan.

A "Class A" road designation in Michigan means the road is built to heavier engineering standards (thicker base and pavement) to withstand legal truck axle loads year-round without seasonal weight restrictions ("frost laws"). A full reconstruction requires digging out the subbase, upgrading drainage, and pouring thick asphalt or concrete.

⁶ The application incorrectly states that Horning and Hardcastle Roads are designated truck routes by Jackson County Department of Transportation (JCDDT). JCDDT does not designate truck routes.

As noted in the Fiscal Impact analysis, reconstruction of these roads to Class A all season status should be a precondition for development of a sand and gravel operation. In a conversation with a representative from the Jackson County Department of Transportation, we learned there are no scheduled improvements for Horning or Hardcastle Road.

Public safety is a serious concern on these roads because of the lack of shoulders. The roads provide no margin for driver error when approaching a 50-ton gravel truck from the opposite direction. The presence of pedestrians or bicyclists presents an even more serious public safety dilemma along these roads.

There is a high potential for crashes and pedestrian and bicycle injuries related to gravel truck traffic on M-124, particularly in the vicinity of Wamplers Lake and Walter J. Hayes State Park. East of Hardcastle Road, M-124 is a two-lane asphalt road with shoulders, with a speed limit of 50 mph. M-124 is designated as a Seasonal Route on MDOT's 2026 Truck Operator's Map, which means that it has spring load limitations. The shoulders on both sides are designated with signage as bicycle paths.



Conditions on M-124, north of Wamplers Lake

Homes on the north side of M-124 across from Wamplers Lake are close to the road. Residents in these homes must cross M-124 to reach their lake frontage. Residents in many homes on the south side must back onto the road when exiting their driveways. Drivers entering onto M-124 from Wamplers Heights Drive must negotiate a relatively steep hill and poor line of site at the M-124 intersection. M-124 passes through Walter J. Hayes State Park, so park users frequently cross M-124 to get from one side of the park to the other.

The application forecasts that there will be 9 inbound and 9 outbound gravel trucks per hour when the site is in operation, resulting in 216 additional truck trips per day. Consequently, residents, pedestrians, bicyclists, and park users will encounter a gravel truck on average every 3.3 minutes. This is a recipe for serious injuries and vehicle and property damage.

Traffic volume counts along the preferred haul route are as follows (AADT⁷, 2025):

- M-124 in the vicinity of Wamplers Lake: 1,653 vehicles
- Horning and Hardcastle Roads: 1,157 vehicles

If there are 9 inbound and 9 outbound truck trips per hour, on Monday through Friday the traffic on M-124 will increase by 13.1%, and on Horning and Hardcastle Roads the traffic will increase by 18.7%. This increase will be composed totally of gravel truck traffic. Commercial traffic on M-124 will increase to 246 vehicles per day if the gravel mine is approved.

The information provided above clearly demonstrates that the impact of the proposed sand and gravel operation on traffic and roads will be immense, contrary to the incomplete Fishbeck study.

IMPACT ON AGRICULTURE

The project application minimizes the impact of the sand and gravel operation on agriculture. The application notes that of the 626.4-acre project site, approximately 18.4 acres are prime farmland, all within the 300-foot setback. This analysis provides an incomplete picture of the importance of the farmlands in the project site.

The U.S. Department of Agriculture's Natural Resource Conservation Service notes that "important farmlands consist of prime farmland, unique farmland, and farmland of statewide and local importance." Prime farmland, as defined by the USDA, is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops and is available for the uses.

The criteria for defining farmland of statewide importance for the production of food, feed, fiber, and oilseed crops, are determined by state agencies. According to the USDA, "generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable."

Our analysis of Natural Resources Conservation Service soil survey maps revealed that farmlands of statewide and local importance exist on approximately 586 acres of the project site's land area (83.7% of the total). The predominance of agriculture on most of the acreage within the project site is evidence of the value and importance of these soils.

⁷ AADT = Annual Average Daily Traffic, which represents the traffic on an average or typical day.

Appendix

Profile of McKenna

Resume of Christopher J. Doozan, AICP



McKenna is a corporation formed under the laws of Michigan on May 2, 1978 with headquarters in Northville, Michigan and branches in Detroit, Grand Rapids and Kalamazoo, Michigan and Columbus, Ohio.

McKenna's team of talented planning, design and building professionals help municipal leaders develop and maintain communities for real life. From street festivals, neighborhood parks, and storefronts, to parking spots, coffee shops, and farmers' markets, we want your community to thrive. McKenna provides planning, zoning, building, landscape architecture, community and economic development, and urban design assistance to cities, villages, townships, counties, and regional agencies, as well as select private clients, based on skilled and effective public engagement. McKenna currently provides project services to more than 85 communities throughout the Midwest. Our success can be measured by the built improvements to hundreds of McKenna client communities, and by our 48-year record of client satisfaction and on-time, on-budget delivery.

HEADQUARTERS

235 East Main St
Suite 105
Northville, MI 48167

DETROIT

211 W. Fort St
Suite 1310
Detroit, MI 48226

GRAND RAPIDS

124 E. Fulton St
Suite 6B
Grand Rapids, MI
49503

KALAMAZOO

151 S. Rose St
Suite 920
Kalamazoo, MI 49007

OHIO

1223 E. Main St
Suite 311
Columbus, OH 43205

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Christopher J. Doozan, AICP, FBCI

PLANNING CONSULTANT

EDUCATION

Master of Science

Community Resource Development
Michigan State University

Bachelor of Science (summa cum laude)

Environmental Studies
Saginaw Valley State University

PROFESSIONAL EXPERIENCE

Community Planning

Prepares comprehensive master plans, zoning ordinances, and community improvement plans for cities, suburban, and rural communities throughout Michigan and Ohio. Provides ongoing planning and zoning advisory services, including site plan review. Prepares capital improvement plans, fiscal impact analyses, and public opinion, population, and housing surveys.

Ordinances and Regulations

Prepares and revises zoning ordinances, sign ordinances, planned unit development regulations, and ordinances for cities, villages and townships. Prepares form-based codes and is certified by the Form-Based Codes Institute. Drafts and enforces site plan review regulations to control out-of-scale homes. Prepares developer agreements to permit construction of gas processing plans, public water and sewer systems, including treatment. Prepares several detailed planned development agreements, based on planning commission and developer input as well as zoning ordinance criteria. Prepares right-of-way ordinances.

Housing

Prepares housing feasibility analysis for older Detroit neighborhoods, including in-depth examination of feasibility of minor and substantial rehabilitation, new housing construction, and moving existing homes. Prepares housing study and cost/benefit analyses of riverfront housing alternatives for central cities. Prepares housing studies for affordable living developments for urban counties. Project manager for state wide Senior Housing Market Study.

Community Development

Provides required documentation for Community Development Block Grant applications, including analysis of target areas for housing rehabilitation programs. Evaluates the CDBG program in major urban counties and prepares three-year plans for allocation of funds to participating communities. Successfully administers CDBG programs in compliance with Federal regulations, including Davis-Bacon and environmental regulations.

Legal Support

Extensive success as expert witness in support of communities in land use and zoning cases. Provides documentation and expertise in federal court case involving restriction of adult entertainment businesses, and various Act 312 arbitration cases. Provided expertise in federal court case involving discrimination against a religious use. Prepared court exhibits and required documentation for court case involving a proposed 800-acre gravel extraction operation.

Recreation

Completes Department of Natural Resources certified recreation plans for both cities and townships. Evaluates recreation-related economic development opportunities in suburban Detroit. Planned and obtained funding for the 10-mile paved Huron Valley Trail in Southeast Michigan.

Annexation

Prepares documentation and successfully fought fights annexation attempts in townships.

Solar and Wind Energy

Assisted townships to conduct thorough and comprehensive reviews for large-scale solar and wind energy projects in Michigan's thumb region, central Michigan, Monroe County, and Muskegon County.



PROFESSIONAL EXPERIENCE

Tax Increment Financing

Establishes authorities and prepares development plans and tax increment financing plans for municipal authorities, including pre-plan economic and fiscal analysis, economic development plan strategy, structuring municipal programs for statutory compliance, public education and communication under the following Michigan acts, as amended: PA 197 of 1975, Downtown Development Authority Act; PA 381 of 1996, Brownfield Redevelopment Financing Act; PA 281 of 1986, Local Development Financing Act; and PA 450 of 1980, Tax Increment Finance Authority Act. Served as executive director of a township Downtown Development Authority.

Economic Development

Prepares commercial and economic development plans and strategies, including tax increment financing plan for multi-million dollar developments, commercial corridor revitalization plans, downtown development plans, and full-scale economic development programs for Michigan counties, townships and cities.

Transportation

Develops analyses of demand for public transportation in major urban counties including the analysis of highway extension alternatives and examination of impact on future travel patterns, land use, and economic development opportunities. Developed plans for a ring road and roundabouts in New Hudson in southwest Oakland County.

PUBLICATIONS

"Graying of America: What It Means For Planners", Co-Author: Michigan Planner.

"Citizen Attitudes About Environmental Issues", Guiding Land Use Decisions, John Hopkins University Press.

"Service Costs: Don't Guess – Plan", Michigan Planner.

PUBLIC SPEAKING AND SEMINARS

Michigan Association of Planning, Spring Institute, May 2005.

"The New Contract Zoning Legislation in Michigan", Walsh College and Grand Valley State University, 2005.

"Decoding Complete Streets" Michigan Association of Planning, Mackinac Island, Michigan, 2014.

TRAINER CERTIFICATION

Mplace Partnership Initiative Placemaking Curriculum

Module 1: People, Places and Placemaking

Module 4: Form Planning and Regulations

CERTIFICATION

American Institute of Certified Planners

Form-Based Codes Institute

MEMBERSHIPS

Michigan Professional Community Planner (I.D. No. 2501000620)

American Planning Association, National and Michigan Chapters

COMMUNITY SERVICE

Board of Directors and editor of monthly newspaper for community organization of 6,000 households in northeast Detroit.

Church Board of Governors, including two terms as Moderator.