

McFarland Johnson's April 4, 2014
Memorandum Regarding
Additional Highway Safety Analysis



McFarland Johnson

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MEMORANDUM

TO: Marshall Hardy
FROM: Adam Frosino
DATE: April 4, 2014
SUBJECT: Wilmot Casino Project – Whiskey Hill Rd. & Gravel Rd.
PROJECT NO.: 17944.00

Urgent For Review Please Comment Please Reply Please Recycle

Additional Highway Safety Analysis

Per requests from the Town, we have reviewed the accident data and intersection geometry of two additional minor intersections along Route 318 within the study area; Whiskey Hill Road and Gravel Road. Below is an accident summary table which broke out the accident data specific to each intersection to determine an intersection accident rate (March 2010 to March 2013).

	SR 318 / Whiskey Hill Rd.	SR 318 / Gravel Road
TOTAL ACCIDENTS	4	9
Non-Reportable	1	1
Property Damage	0	2
Injuries	2	6
Fatalities	1	0
Intersection Accident Rate (ACC/MEV)	0.41	0.89
NYS Average Accident Rate	0.25	0.25
<u>Accident Types</u>		
Rear End	1	2
Right Angle	1	4
Head On		
Overtaking		
Side Swipe		1
Equipment Failure		
Fixed Object	1	1
Unknown	1	1

Field measurements were taken at each intersection to further review the existing conditions:

	Whiskey Hill Road	NYS Route 318	Gravel Road	NYS Route 318
AADT	840	8110	400	8400
Count Date	2010	2011	2011	2011
Road Width	11'	12'	10'	12'
Paved Shoulder	4-5' (Intersection approach only)	12'	3-4' (Intersection approach only)	8'
Gravel Shoulder	4-5'	0'	4-5'	0'
Guiderailing	No	Cable	No	Cable
Stopping Sight Dist.	NB = >1000' SB = 1000'	EB = >1000' WB = >1000'	NB = >1000' SB = 1000'	EB = >1000' WB = 900'
Intersection Sight Dist.	NB = >1000' E & W SB = >1000' E & W	NA	NB& SB >1000' East NB West = 950' SB West = 670'	NA

1. **NYS Route 318 at Whiskey Hill Road (CR 107):** As the accident table shows, the intersection has an accident rate over the statewide average. The four accidents consisted of: a fatality from a northbound vehicle's failure to yield right of way to an eastbound vehicle, an eastbound rear end accident with injuries occurred due to a vehicle striking another eastbound vehicle making a right turn with "illness" as the causing factor, another accident with an injury occurred from an eastbound vehicles driving at unsafe speeds in icy/snow conditions and colliding with the guide railing and the last accident was a non-reportable accident with no further information provided in the summary report. Due to the limited amount of accidents no accident trend can be determined.

Based on field observations, there is adequate site distance in all directions and approaches at this intersection. The 12' wide paved shoulders and guide railing on Route 318 provide additional safety factors; however this additional buffer encourages drivers to travel at faster speeds. A speed count from 2007 by the NYSDOT shows that the 85th percentile speed is 64 mph eastbound and 62 mph westbound. These higher speeds were also apparent during the field observations.

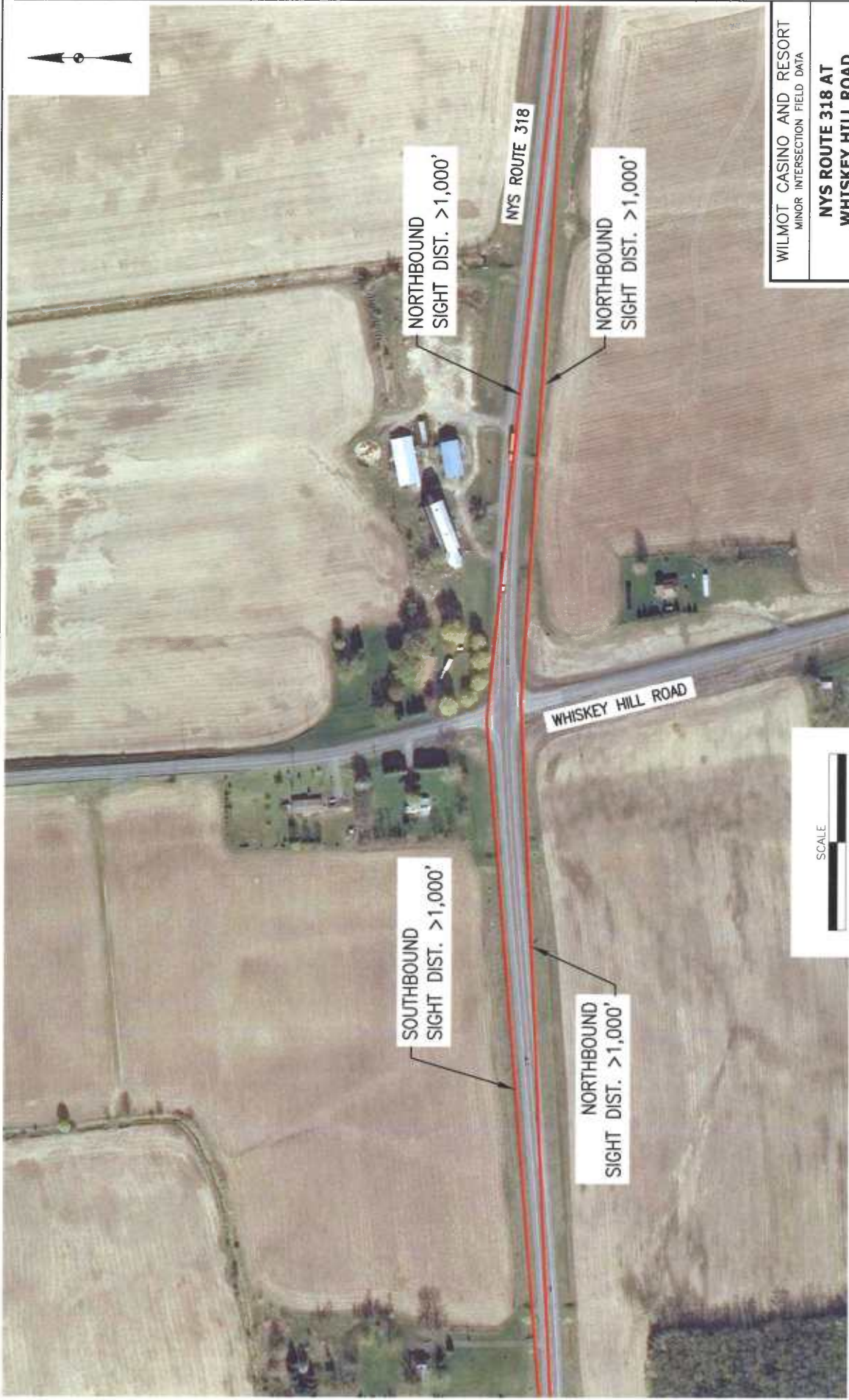
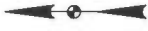
In conclusion, based on the available sight distance, current intersection geometry and the fact that half of the accidents were from weather and illness related factors, no intersection geometry improvements are currently recommended. The only definable safety concern is the vehicle travel speeds on Route 318.

2. **NYS Route 318 at Gravel Road (CR 101):** This intersection also has an accident rate over the statewide average. There were nine accidents over the 3-year period of which 6 involved injuries. The only apparent trend is that five of the accidents involved northbound vehicles (3 with eastbound and 2 with westbound) with the northbound drivers failure to yield right of way being the apparent factor, while one also had inclement weather factor (snow). The intersection is situated just east of a horizontal curve on Route 318, while the roadway also has a reasonable downgrade. Both northbound and southbound Gravel Road approaches have residential houses on the east corners which impacts the approaching intersection site distance; however have no impacts on the site distance when stopped at the stop bar.

A speed count was also performed by NYSDOT along this segment of Route 318 with similar results of 85th percentile speeds of 64 mph eastbound and 63 mph westbound. Again, these higher speeds were also apparent during field observations, where several vehicles on Gravel Road turned in front of Route 318 vehicles with insufficient gaps requiring the eastbound vehicles to apply their brakes. The downhill slope of the eastbound approach, in conjunction with 9' paved shoulders and driver tendencies in this area, result in high travel speeds on Route 318.

The AASHTO Geometric Design of Highway and Streets, 6th Edition (2011), the recommended intersection sight distance for left turn movement is 720 feet from a minor street stop sign controlled with a 65 mph design speed and 625 feet for right turn or crossing movements. Based on the field observations the intersection has adequate sight distance with the exception of southbound vehicles making left turns onto Route 318, where the sight distance is approximately 50' short of recommended length. This is interesting as there were no accidents over the 3-year period that resulted from any southbound vehicle.

In conclusion, sight distance does not appear to be a significant factor in the higher accident rates at this intersection, as all the accidents reviewed resulted from movements with adequate sight distance. The travel speeds on Route 318 appear to be a contributing factor in as vehicles turning onto Route 318 are accepting insufficient gaps due to the driver's miss judgment of the oncoming vehicles speeds (often in excess of 65 mph).



NORTHBOUND
SIGHT DIST. >1,000'

NYS ROUTE 318

NORTHBOUND
SIGHT DIST. >1,000'

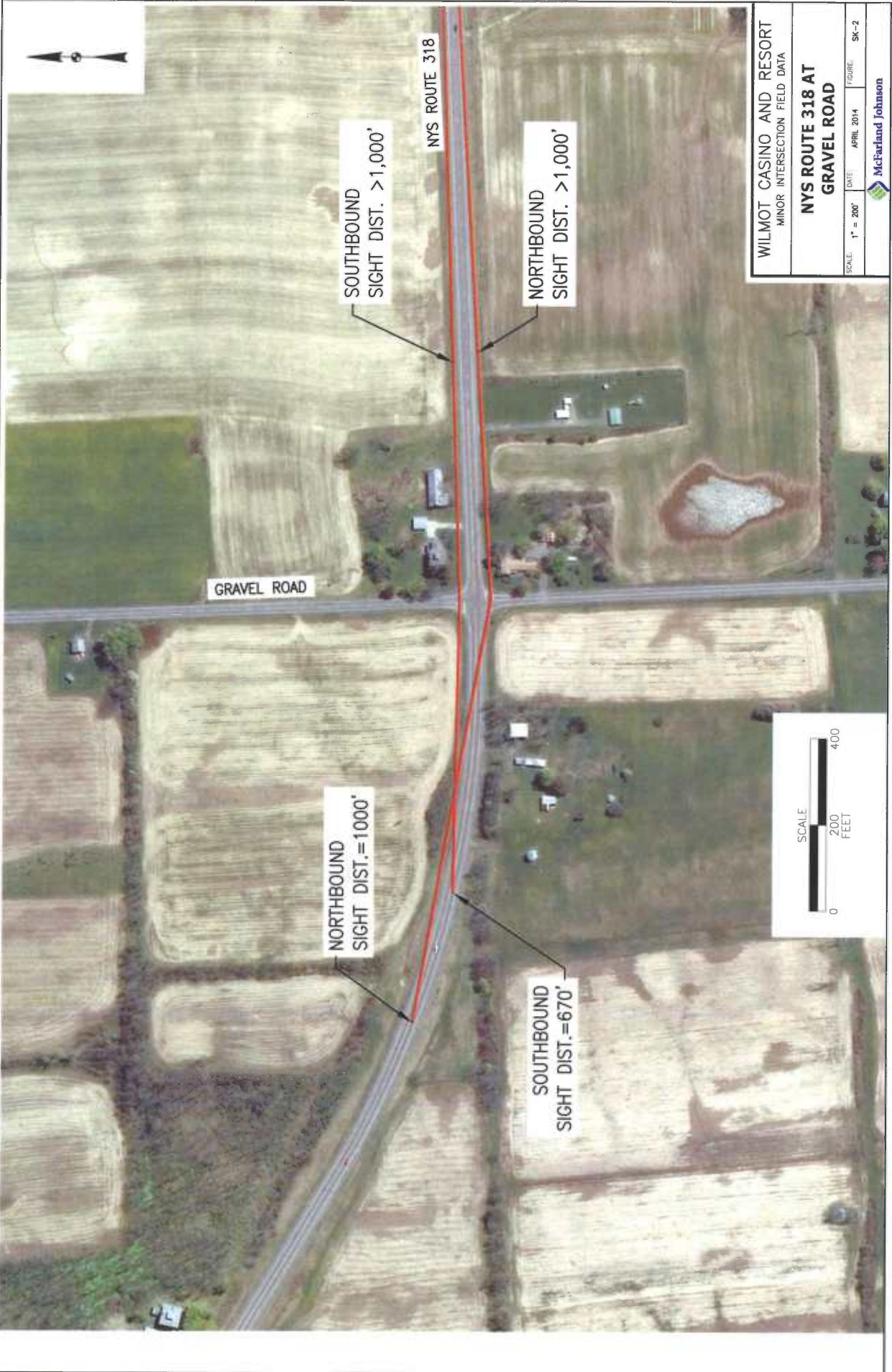
WHISKEY HILL ROAD

SOUTHBOUND
SIGHT DIST. >1,000'

NORTHBOUND
SIGHT DIST. >1,000'



WILMOT CASINO AND RESORT MINOR INTERSECTION FIELD DATA	
NYS ROUTE 318 AT WHISKEY HILL ROAD	
SCALE: 1" = 200'	DATE: APRIL 2014
	FIGURE: SK-1
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WILMOT CASINO AND RESORT
MINOR INTERSECTION FIELD DATA

**NYS ROUTE 318 AT
GRAVEL ROAD**

SCALE: 1" = 200'
DATE: APRIL 2014
FIGURE: SK-2



SOUTHBOUND
SIGHT DIST. >1,000'

NORTHBOUND
SIGHT DIST. >1,000'

NORTHBOUND
SIGHT DIST. = 1000'

SOUTHBOUND
SIGHT DIST. = 670'

GRAVEL ROAD

NYS ROUTE 318

