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Mr. Paxton Arthurs
Randolph County Public Works
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2/1/13

Subject: Randolph County Landfill Accident Data Analysis

Dear Mr. Arthurs

CDM Smith obtained accident data from the North Carolina Department of transportation for the 3 year period beginning in 12/1/2007 and ending on 11/30/2012 for the following locations

Intersections

- Presnell Street and US 64/NC29
- Henley Country Road and Old Liberty Road
- Henley Country Road and Presnell Street
- Old Cedar Falls Road and Foxworth Road
- Henley Country Road and Old Cedar Falls Road

Segments

- Old Cedar Falls Road from Henley Country Road to Rambling Road
- Henley Country Road from Presnell Street to Old Cedar Falls Road
- Henley Country Road from Old Cedar Falls Road to Old Liberty Road

The following chart displays the number of accidents at the study area intersections

	Total	Angle	Fixed Object	Left turn different roadways	Left turn same roadway	Movable object	Parked motor vehicle	Rear end	Sideswipe same direction	Sideswipe opposite direction	Ran off road
Presnell Street and US 64/NC29	20	1	2	4	4	1	1	5	2		
Henley Country Road and Old Liberty Road	2			1						1	
Henley Country Road and Presnell Street	2	1			1						
Old Cedar Falls Road and Foxworth Road	3			2							1
Henley Country Road and Old Cedar Falls Road	7	6		1							

The following chart displays the number of accidents at the study area intersections by injury classification

	Total Injuries	Fatal	Class A	Class B	Class C	Property Damage Only
Presnell Street and US 64/NC29	20	1		2	8	9
Henley Country Road and Old Liberty Road	2				1	1
Henley Country Road and Presnell Street	2					2
Old Cedar Falls Road and Foxworth Road	3					3
Henley Country Road and Old Cedar Falls Road	7				4	3

The following chart shows the total number of accidents on the roadway segments, not including the accidents at the key intersections

	Total	Angle	Fixed Object	Left turn different roadways	Left turn same roadway	Movable object	Parked motor vehicle	Rear end	Sideswipe same direction	Sideswipe opposite direction	Ran off road	Animal	Overturn/Rollover	Unclassified	Backing Up
Old Cedar Falls Road from Henley Country Road to Rambling Road	10	1	3								1	5			
Henley Country Road from Presnell Street to Old Cedar Falls Road	13	1	6									3	2	1	
Henley Country Road from Old Cedar Falls Road to Old Liberty Road	42	1	12	1	1	1	3	3	1	4	2	10	1	1	1

The following table shows the number of accidents on the roadway segments, not including the accidents at key intersections.

	Total Accidents	Fatal	Class A	Class B	Class C	Property Damage Only
Old Cedar Falls Road from Henley Country Road to Rambling Road	10				3	7
Henley Country Road from Presnell Street to Old Cedar Falls Road	12			1	3	8
Henley Country Road from Old Cedar Falls Road to Old Liberty Road	42			3	3	36

The average accident rate for rural two lane secondary routes is 335.34 accidents per 100 million Vehicle Miles Travelled. The accident rates for each intersection and roadway segment (including the key intersections) are:

Intersections

Presnell Street and US 64 – NC 49 – 43.27

Henley Country Road and Old Liberty Road – 19.90

Henley Country Road at Presnell Street – 15.00

Old Cedar Falls Road at Foxworth Road – 54.73

Henley Country Road at Old Cedar Falls Road – 98.24

Segments

Old Cedar Falls Road from Henley Country Road to Rambling Road – 553.86

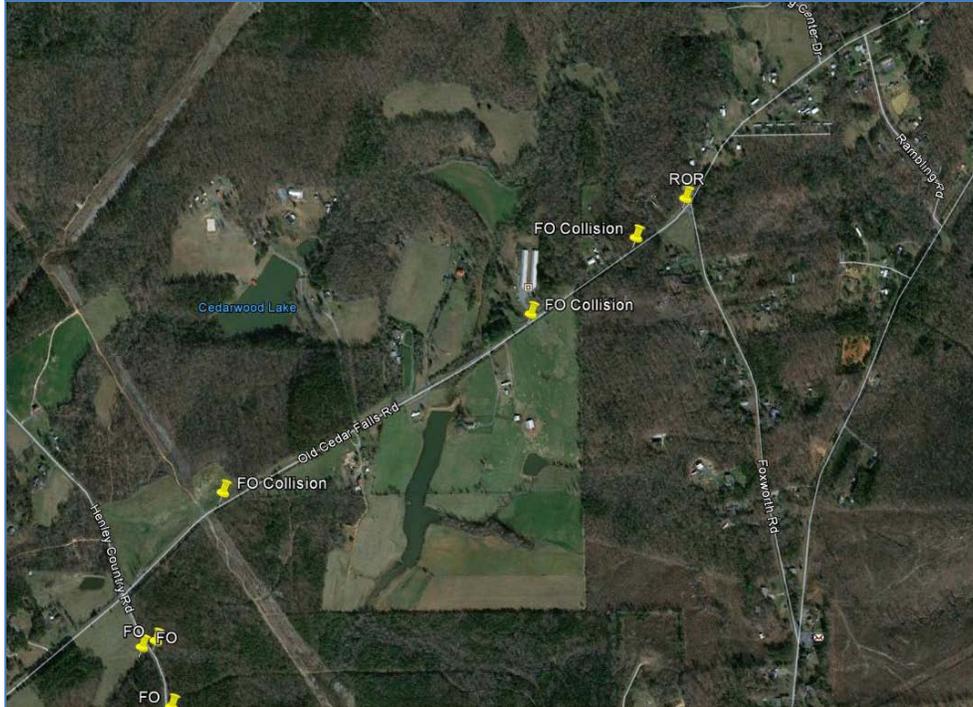
Henley Country Road from Presnell Street to Old Cedar Falls Road – 776.38

Henley Country Road from Old Cedar Falls Road to Old Liberty Road – 440.50

This data indicates that the roadway segments included in this study are above the statewide average accident rate for a 2-lane rural road, therefore further analysis is warranted to determine if the additional truck traffic from the proposed landfill will negatively impact safety along the proposed roadway segments.

Old Cedar Falls Road from Henley Country Road to Rambling Road

Old Cedar Falls Road experienced 10 accidents in the 3 year time period of this study. Of these 5 were animal collisions, which would not be affected by the increase in truck traffic. Of the remaining 5, 1 was an angle collision that occurred at the intersection of Old Cedar Falls Road and Foxworth Road. The remaining accidents were a result of running off of the roadway (3 striking a fixed object and one not striking an object). One of these accidents involved alcohol. The following image shows the location of each of these accidents:



As seen in this image the accidents along this roadway are not concentrated in one location, which would indicate a site-specific issue. A further analysis of the data shows that these four accidents occurred at the following times:

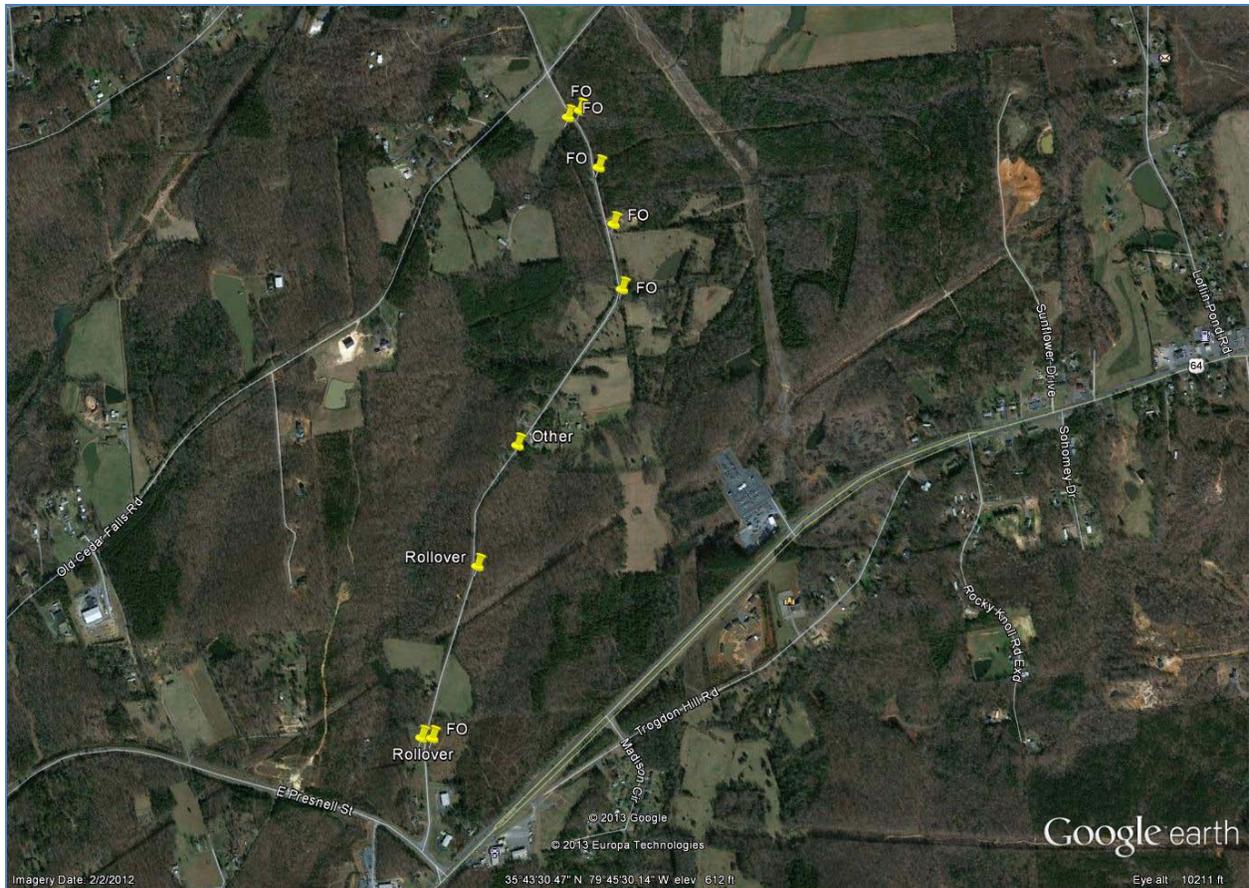
- 9:30 AM
- 5:05 PM (alcohol)
- 6:45 AM
- 5:24 AM.

Only the 9:30 AM collision occurred during the operating hours of the proposed facility.

It is my professional opinion that the increase in truck traffic on this roadway will not cause a decrease in safety and an appreciable increase in accidents along this section of roadway.

Henley Country Road from Presnell Street to Old Cedar Falls Road

Henley Country Road from Presnell Street to Old Cedar Falls Road experienced 13 accidents in the 3 year time period of this study. Of these 3 were animal collisions, which would not be affected by the increase in truck traffic. Of the remaining 10, 1 was an angle collision at the intersection of Henley Country Road and Presnell Street, 8 were the result of running off of the road (6 striking a fixed object and 2 resulting in a rollover) and 1 unclassified accident. The following image shows the location of these accidents



There are two areas of concentration, one just north of Presnell Street and another north of the 30 mile per hour curve just south of Old Cedar Falls Road. The 8 run off the road accidents occurred at the following times and estimated speeds:

- 3:59 PM 55 mph
- 2:52 PM 55 mph
- 11:28 PM 55 mph
- 11:22 PM 55 mph
- 9:50 PM 50 mph
- 9:20 PM 60 mph
- 7:45 AM (no estimated speed given)
- 4:31 PM 45 mph

Three of the 8 accidents occurred during the operating hours of the proposed landfill.

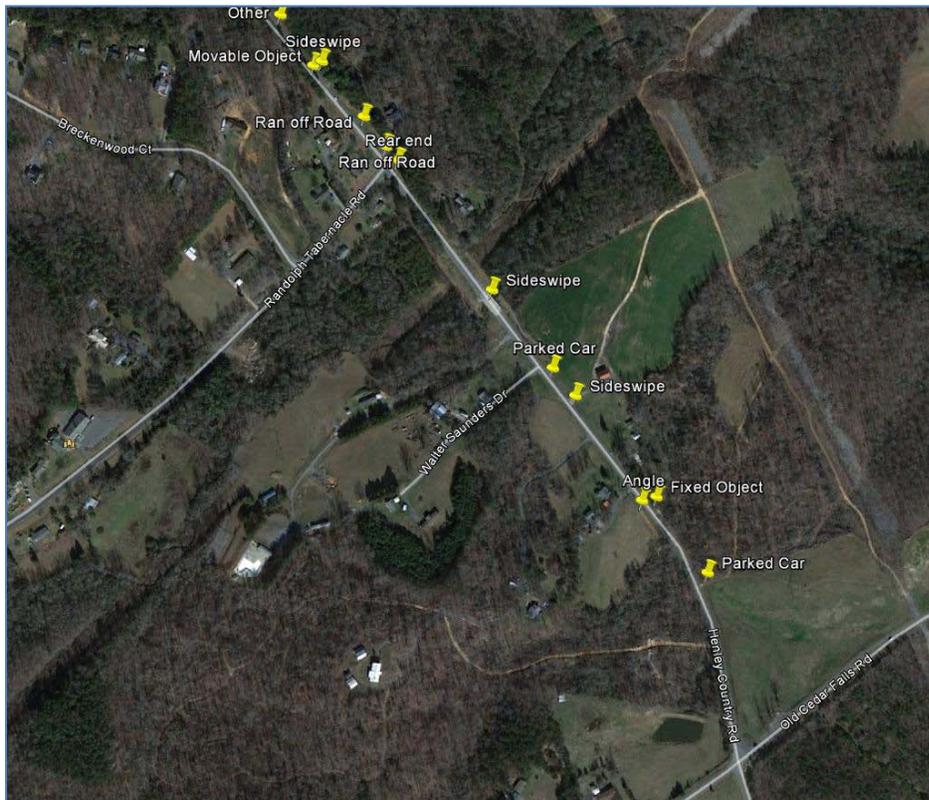
The *Proposed Randolph County Regional Landfill Transportation Study* recommended that a speed limit of 45 miles per hour be posted on Henley Country Road between Presnell Street and Old Cedar Falls Road and that this speed limit be actively enforced, particularly for heavy vehicles. Given that speed seems to be a factor in at least 6 of the 8 run off the road accidents and that this roadway has several curves marked with advisory speeds, a reduction in speed limit appears to be warranted.

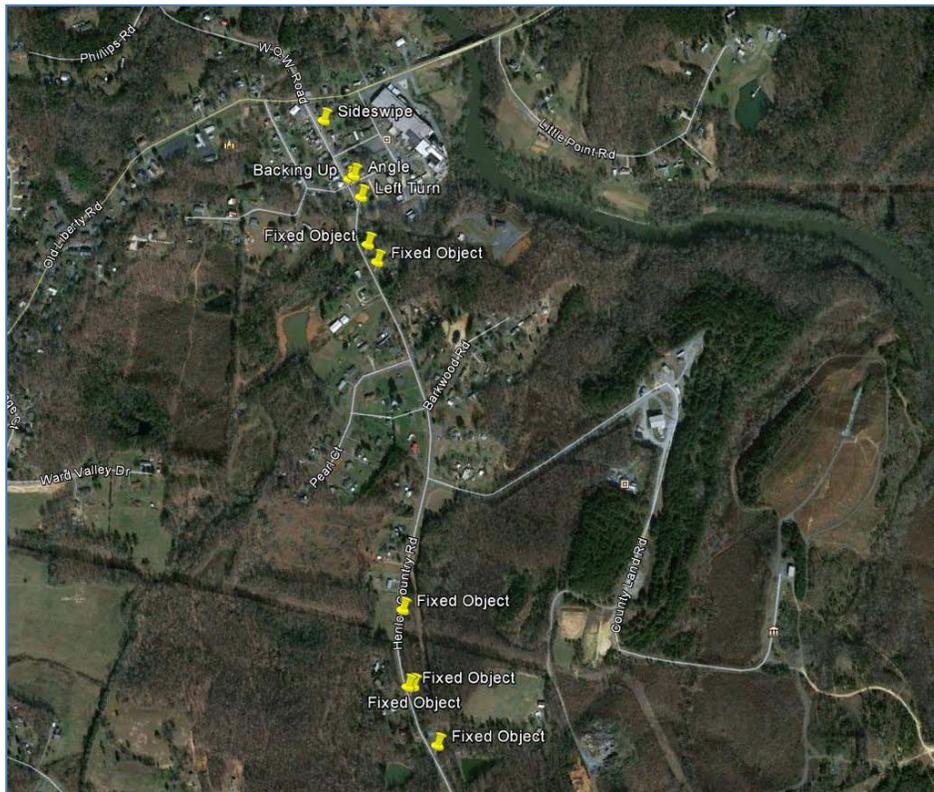
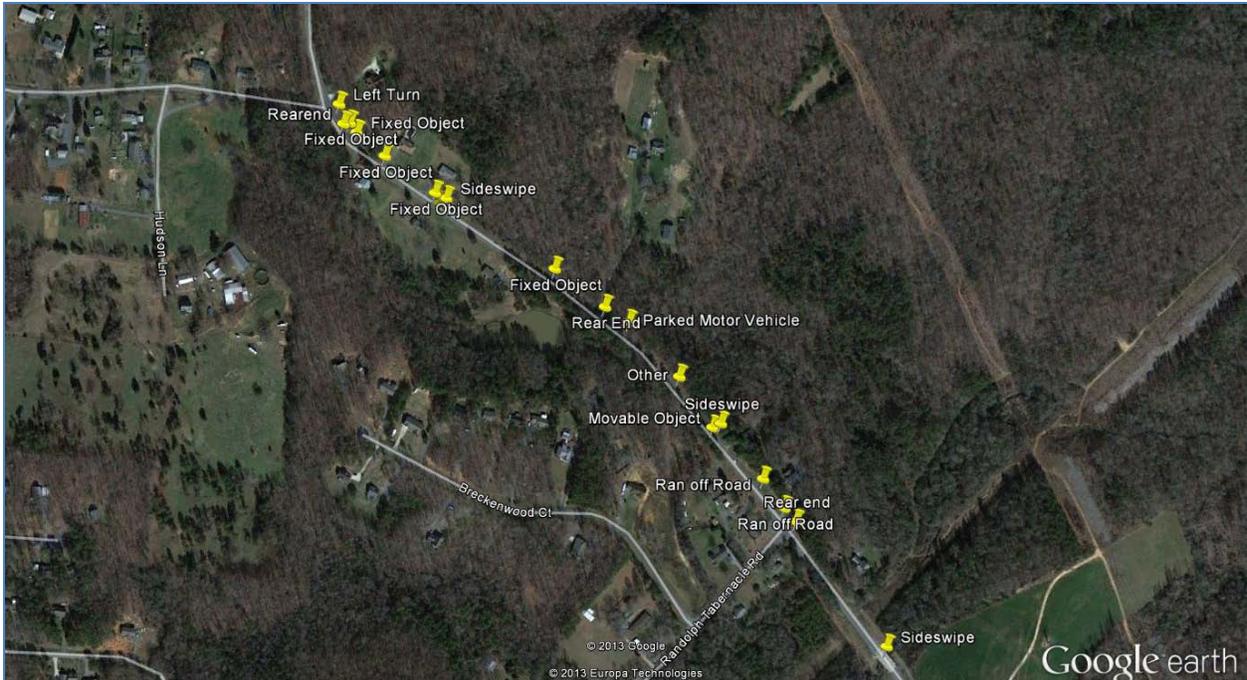
It is my professional opinion that with a decrease in speed limit the increase in truck traffic on this roadway will not cause a decrease in safety and an appreciable increase in accidents along this section of roadway.

Henley Country Road from Old Cedar Falls Road to Old Liberty Road

Henley Country Road from Old Cedar Falls Road to Old Liberty Road will not be affected by the increase in truck traffic from the proposed facility. However, given that the roadway has an accident rate higher than the statewide average rate, the accident statistics are discussed here in detail. This roadway experienced 42 accidents in the 3 year time period of this study. Of these 10 were animal collisions. Of the remaining 32, 15 were the result of running off the road (12 striking a fixed object and 1 rollover), 5 were sideswipes, 3 involved a vehicle striking a parked car, 3, were rear end collisions, 2 involved left turns, and one each of an angle collision, a collision with a movable object, a backing up collision, and an unclassified collision.

The following images show the locations of the accidents along this segment.





The 15 run off the road collisions occurred at the following times and speeds

- 5:41 AM 45 mph
- 8:09 AM 55 mph
- 5:23 PM 55 mph
- 8:00 AM 25 mph
- 6:45 AM 55 mph
- 1:26 PM 60 mph
- 9:12 PM 60 mph
- 1:29 AM 55 mph
- 3:40 AM 45 mph
- 7:07 PM 55 mph
- 8:55 AM 55 mph
- 7:52 PM 75 mph
- 7:53 PM 55 mph
- 11:52 AM 10 mph
- 4:21 AM 35 mph (alcohol involved)

As with Henley Country Road south of Old Cedar Falls Road, high speeds appear to be the predominant cause for the majority of the run off the road collisions, a reduction in speed limit on this roadway may also be considered.

Conclusions

Of the 5 intersections included in this analysis, all fell well below the statewide average for secondary rural routes. However, all of the roadway segments fell above the statewide average. A detailed analysis of the individual accident data indicates that accidents along Old Cedar Falls Road are limited in number and that an increase in truck traffic will not cause a decrease in safety and an appreciable increase in accidents along this section of roadway. Along Henley Country Road the majority of accidents involved run off the road collisions that could be aided by a decrease in speed limit along this roadway. With this decrease in speed limit the increase in truck traffic on this roadway will not cause a decrease in safety and an appreciable increase in accidents along Henley Country Road between Presnell Street and Old Cedar Falls Road