



U.S. Department of Energy  
Hanford Site

16-HAB-0018

JUN 23 2016

Mr. Steve Hudson, Chair  
Hanford Advisory Board  
Enviroissues Hanford Project Office  
713 Jadwin Ave., Suite 4  
Richland, Washington 99352

Dear Mr. Hudson:

HANFORD ADVISORY BOARD FEBRUARY 4, 2016, CONSENSUS ADVICE #286,  
"TRANSPORTATION INFRASTRUCTURE UPDATES SAFETY CONSIDERATIONS"

Thank you for your letter on Advice #286 on the transportation infrastructure updates safety considerations (enclosed). The U.S. Department of Energy (DOE) appreciates the Hanford Advisory Board's (HAB or Board) input regarding traffic reduction and infrastructure improvement initiatives.

Below are the responses to the advice points in your letter:

**Advice Point #1:** The Board advises DOE to implement safety and environmental improvements through commuter traffic reduction for DOE and its contractors that do not place all burden on the work force.

**Response:** The Department accepts this advice point and will continue to implement safety and environmental improvements. In 2011, a Greenhouse Gas (GHG) Feasibility Study on Employee Commuting was conducted for the Hanford Site. The study, completed in 2012, provided recommendations to reduce commuting and ultimately reduce GHG. The recommendations included Implementing a RideShare Website and a 4x10 Work Schedule.

The current status of these recommended actions is described below:

- 4x10 Work Schedule – The 4 x 10 work schedule has been implemented by most contractors on site. Not all employees work the 4 x 10 work schedule, but it was originally estimated that this would represent an 11 percent reduction in days per year that employees have to make the commute to and from work.

- Mission Support Alliance, LLC (MSA), in cooperation with Ben Franklin Transit (BFT), developed and launched the RideShare website to reduce Scope III greenhouse gas (GHG) generation on the Hanford Site that is caused by employees commuting from home to work. The RideShare website is managed by MSA. The website allows Hanford employees to look at Rideshares (vans/carpools) that are open to new riders and look for available riders who want to become part of a rideshare. The website allows employees to sign up as a rider or become an “owner” of a rideshare. BFT provides the vehicles for seven, twelve, or fifteen riders. The RideShare website link is consistently shared through the MSA Weekly to promote carpooling and greenhouse gas reduction. Other Hanford contractors also provide communications to their employees about this available service. To date, BFT estimates that there are 187 RideShare vehicles that are currently being used on the Hanford Site which account for a reduction of 12,957 miles/day of vehicle emissions contributing to the commuting GHG emissions.

**Advice Point #2:** The Board advises DOE to pursue improvements to infrastructure updates that facilitate a safer, and more timely, commute and improved response to emergency situations and consider the Board’s suggestions as articulated above.

**Response:** The Department accepts this advice in part and will continue to pursue improvements to infrastructure, with the main focus of safety. After examining traffic data from the past 12 years, the construction of additional traffic lanes does not appear to be necessary at this time, based on the existing level of traffic congestion and an anticipated future traffic volume decrease.

A congestion evaluation was completed on Route 4S between the WYE Barricade and the 200 East Area in June 2015. The evaluation showed the peak volume (average daily traffic) occurred in 2010, and the peak congestion (highest number of vehicles on the road during peak hours) occurred in 2014. The current peak hour traffic volumes are resulting in short duration traffic slowdowns.

When considering whether or not construction of new traffic lanes is necessary, DOE uses the following Washington State Department of Transportation (WSDOT) congestion thresholds as identified in the WSDOT Handbook for Corridor Capacity Evaluation. The threshold values are based upon a posted speed of 60 miles per hour (MPH) which is the posted speed on Route 4S.

- Maximum throughput speed (optimal flow speed) = 85% of posted speed or about 51 MPH. This is the average speed where the maximum vehicle volume per hour per lane occurs.
- Congested Threshold = < 75% of posted speed or 45 MPH. The average weekday peak time period when average vehicle speeds are slower than 75% of posted speeds. Drivers have less than optimal spacing between cars and the number of vehicles that can move through a highway segment is reduced.

- Severe congestion threshold = < 60% of posted speed or 36 MPH. Speeds and spacing between vehicles continue to decline on highway segment and highway efficiency operates well below maximum productivity.

Based on data collected in June 2015, the average speed northbound in the morning over a 3 day period during the 15 minute period with the most traffic slowdown each day was 48.5 MPH which is approaching the WSDOT congested threshold value, but is well above the severe congestion threshold of 36 MPH. If the average speed were to slow to the severe congestion threshold, DOE would consider construction of additional traffic lanes to ease congestion.

Another factor DOE considers is the projected site population and its potential impact on traffic. A projection of future site populations indicates that the on-site population in 2015 will gradually decrease by approximately 13% by 2019 and will decrease by an additional 10% by 2021. Site population is forecast to remain relatively constant at that level through 2025. A forecast of future site traffic volume would assume that the volume will decrease as the population decreases which will result in less peak hour traffic congestion.

In regard to the emergency evacuation process, the timing and routes used for evacuation are directed based on the hazard posed. The Emergency Operations Center (EOC) staff assess the hazard and determines who can stay onsite, who needs to be evacuated, and the specific route they need to take. Evacuations of areas would be staggered to minimize traffic issues and expedite movement away from the hazard. While more lanes or routes would always be preferred in an emergency evacuation, increasing lanes or widening a road that is normally used for commuting may not be helpful if that road cannot be used due to the hazards and wind direction.

**Advice Point #3:** The Board advises DOE to ensure that roads are physically inspected early in the morning to ensure accurate weather alerts.

**Response:** DOE accepts this advice in part and will continue to ensure the Hanford Site roads are physically inspected throughout the day to ensure accurate weather alerts. The process used to determine when alerts, work delays, or cancellations may be necessary includes gathering information on the near-term weather forecast and road conditions on both the Hanford Site and major roadways leading to the site. Essential personnel who have traveled on site roads (e.g. Hanford Patrol, road crews and 24-hour facility staff) are queried on road conditions they encountered during their early morning commutes or work-required travel. As soon as a determination can be made (targeting no later than 4 a.m.), information is posted for employees. If conditions change, even after the 4:00 a.m. target time, decisions can change and new messages are issued.

The above described process was implemented on December 22, 2015, and improvements in the employee notification system were identified and have been implemented. An advisory message was placed on the Hanford Hotline and 530 AM radio station at 3:05 a.m. advising "Employees are urged to use caution when driving to work, be prepared for adverse weather or road

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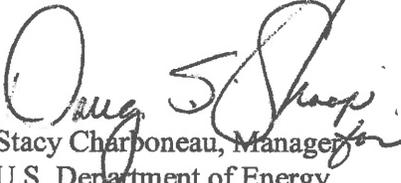
conditions and plan for longer commute times. Roadways are wet and may be slick when the temperature is below freezing on the Hanford Site.” An update was placed on these systems at 5:28 a.m. advising of the specific slick area on Route 4 south. It was identified that employees may not have checked these sources, instead relying on the Hanford mobile app, which had previously been reserved for work delays and cancellations. Corrective actions were promptly implemented to ensure that when known hazards are reported beyond normal winter driving conditions, such as ice in places on Hanford roads, an advisory message will be placed on the Hanford hotline, Hanford.gov, Hanford mobile app and Hanford radio station 530 AM by 4:00 a.m. If conditions change, the message will be updated.

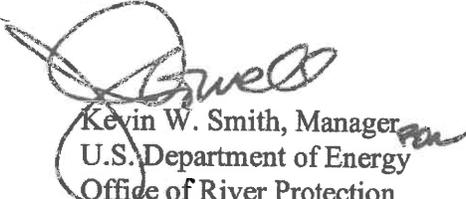
The Hanford electronic emergency message reader boards located on main roads entering the site have been upgraded to allow activation remotely from the Hanford Site EOC as follows. A highly reflective sign is located on each board that advises that an emergency message is being broadcast on the Hanford AM 530 radio station when the boards flashing lights are activated. The Hanford EOC is staffed at all times and coordinates with the Hanford Patrol Operations Center as site conditions change.

**Advice Point #4:** The Board advises DOE to encourage its contractors to allow employees sufficient administrative leave time in the event of changing hazardous road conditions.

**Response:** The Department accepts this advice in part. After conferring with the Hanford prime contractors, when Hanford Site employees receive notification and direction of a work delay or site release of work, employees code this work time as ROAD time. This code is provided to ensure employees have sufficient amount of time to get to work or to drive home safely. Employees are always encouraged to drive safely and consider adequate time for travel, as well as use good judgment, when determining the need to take more time than is being allotted for a situation. If so, they are able to code the additional time as vacation, after conferring with a supervisor.

Thank you again for your interest in this subject. If you have any questions, you may contact Kristen Holmes, Richland Operations Office, at (509) 376-5803, or Dieter Bohrmann, Office of River Protection, at (509) 376-9292.

  
Stacy Charboneau, Manager  
U.S. Department of Energy  
Richland Operations Office

  
Kevin W. Smith, Manager  
U.S. Department of Energy  
Office of River Protection

OCE:KPS

cc: see page 2

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cc:

D. Borak, EM-3.2  
M. A. Gilbertson, EM-10  
T. Gilley, Enviroissues  
D. M. MacDonald, ORP/co-DDFO  
C. McCague, Enviroissues  
K. M. Rankin, RL/co-DDFO  
Administrative Record  
Environmental Portal

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