FIELD & EMERGENCY REVIEW GUIDELINES

The following is intended as a very general outline of suggested field protocol. As a general rule of thumb, team up with more experienced personnel, bring as-built plans, maps, field equipment, and utilize safety equipment and procedures. The project scope, availability or in-availability of surveyed information, and time to process a project, will dictate the extent of review required.

Emergency Response Program: Recent special circumstances involving intense rainfall and storm runoff, such as the Alstead Flood (October 2005), Hurricane Irene (August 2011), and severe rainfall of June 2013, resulting in catastrophic, wide spread infrastructure damage, have prompted the Department to assemble guidance on Emergency Response Procedures. It should be noted that specific guidelines must be followed to qualify for Federal reimbursement and expedited repair.

Guidance on the field documentation and notification process for major storm events can be located under the Storm Events section of the Highway Maintenance Operations website at the following location:

http://dotweb/organization/operations/highwaymaintenance/index.asp

Review the documents under the ‘Storm Guides & Presentations’ section prior to heading into the field.

Additional guidance on the recommended process of field documenting damage, though only ‘draft’ in nature, can be located on the G:\ drive at:

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The key to emergency field reconnaissance is to team lesser experienced personnel with experienced personnel. Contact the Highway Design Administrator, or Section Heads of the Final or Consultant section, for names of individuals with emergency field review experience. Time to obtain, document, and process field information will be extremely limited, and must adhere to certain specific guidelines to qualify for reimbursement, so excellent coordination and communication among bureaus (District, Environment, M&R, Construction, ROW, Utilities, Survey, Bridge) and outside agencies (NHDES, FHWA) is of paramount importance.

GENERAL FIELD TRIP EQUIPMENT & PROCEDURES:

- Field duffle with flashlight, cloth tape, pop level, as-built plans or maps, clip board, GPS camera, bug spray, writing utensil, GPS camera, measuring wheel, spray paint, etc.;
- Team up - 2 person minimum (for safety and documentation of conversations with persons encountered);
- Department-compliant steel toe boots & safety vests;
- Write cell phone contact number on white board with project location;
- Sign packages as required (in 1st floor records);
• Vehicle (project number, fuel card, fueling instructions, begin & end mileage);
• Contact District in advance to meet on-site and discuss issues of concern;
• Understand intended project scope and critical areas of field changes as this influences the focus of a field review.

SAFETY: Safety is an important facet of the field investigation. Utilize appropriate signage and warning devices (amber vehicle warning light) to alert motorists of the presence of personnel in areas of traffic. Use sound judgment. If additional means are appropriate, such as shadow vehicles, lane closure, police vehicles, etc., have those present at the time of the review or postpone the review until such time as they are employed. Avoid having personnel within or near the roadway in periods of adverse visibility or traffic conditions. Communicate with one another on field related safety concerns.

LANE CLOSURES: If possible, avoid being in or close to the travelway especially during peak traffic hours. If access to the travelway is required on high speed and/or high volume roadways, coordinate with your supervisor, and contact District for assistance.

Features to Inspect: Start by driving the project length to evaluate & prioritize field work.

GPS CAMERAS: Take plenty of photos. Note or photograph landmarks (mile markers, utility pole numbers, plans with location marked) in the vicinity of drainage, guardrail runs, or other critical locations, to assist in identifying photo locations at later dates.

Instructions on operating the GPS camera features are on the Highway Maintenance Operations website as follows:


GUARDRAIL: To assist in field reviews, there is a Guardrail Field Review Sheet available on the G: drive at the following location:

\HZNDOTFILE\Global\BUR34\Guardrail\Guardrail Calcs.xls

• Height - Current guidance recommends 27.75” minimum after overlay measured from pavement surface to top of rail, otherwise consider resetting or replacement);
• Rail & post type, and conditions of both (photograph);
• End section type (photograph);
• Location of guardrail face relative to the edge of pavement; note shoulder width
• Curb locations, type & vertical reveal;
• Approx. slope grade behind, approaching and departing from rail;
• Note obstructions or controls driving need for rail (headwalls, fill slopes steeper than 4:1, waterways, ledge outcrops, utility poles, bridge piers, etc.); extent of work necessary to allow for rail removal & what would be impacted (ROW,
wetlands, etc.); Refer to separate guidelines for field review of guardrail condition and warrants.

- Note locations where extra posts have been placed to stiffen rail in front of utility poles or over culverts, or where posts may have been omitted

**Hazmat/Contaminated Materials/Building Demolition/Solid Waste:** Make note of any substantive amount of disposed material or conditions warranting special disposal issues or construction measures, such as barrels, discarded building materials, railroad ties, oil stained or malodorous soil or water, mechanical parts or devices, etc., note the apparent items and bring to the attention of appropriate Department personnel.

**ROW:** Use as-built plans to locate or confirm presence of bounds, especially at critical work areas (drainage or bridge work).

**CURB:**

- Note curb type (bituminous asphalt or granite: straight, slope face, curved, or radial);
- Note curb vertical reveal - (minimum reveal after overlay should not be less than 2.0”, otherwise consider resetting or replacing);
- Note curb condition – if damaged beyond re-use (estimate a rough percentage in need of replacement); if pushed out of place or in good condition but too little reveal (estimate quantity requiring resetting)

**DRAINAGE CULVERTS:**

- Note pipe size, type, condition, offset (from tw or ep) (eg. 24” cmp rotted invert, no headwalls, pavement crack above pipe, possible stream or wetland, 1/3 filled with debris);
- Note shape deformations and pipe condition (eg. missing metal sections, headwall deterioration, deteriorated end sections, mis-alignment or inconsistent width in water flow line indicative of shifted sections, failed joints, etc.);
- Note approximate depth of cover over pipe;
- Use camera with flash to take interior photo noting any variations in the culvert’s interior circumference that could indicate settlement or crushing (Note: Do not enter pipes or enclosed spaces without first checking with the Office of Compliance regarding policy and safety requirements);
- Note evidence of erosion or deposition issues in the stream inlet or outlet, indicative of an undersized culvert, mis-alignment with respect to the stream, or significant grade changes between the culvert and natural streambed profile;
- Note pavement cracks, ground surface depressions, or holes above the pipe, indicative of partial collapse or shifting at pipe joints;
- Note end treatments, material type & condition (eg. metal end section, mortar rubble masonry headwall, or no end treatment) and distance to TW;
- Note water source: wetland, stream, or ditch runoff; If stream, make note of approximate bank width at a ‘natural’ section;
• Note invasive plants if known – purple loosestrife, Japanese knotweed, etc.
• Note catch basin type (block, concrete, etc.) & condition; Note grate type (reticuline, parallel, etc); take photos
• Note presence or absence of object marker;
• Note underdrain locations, outlet conditions, longitudinal pavement rutting or cracking, or embankment sinkholes above underdrain (indicating possible underdrain failure) or buried outlets;
• Get a rough idea of drainage area & terrain, pipe sizes above or below major drainage culverts; anecdotal flooding evidence from abutters, maintenance crews, town, etc. – what is the highest elevation, has it overtopped road, have nearby residences flooded, how frequently?
• Note high water and average water marks on streambanks and inside pipes;
• For channels with flowing water, estimate or measure average width and depth. Velocity can be estimated by timing the passage of a floating stick. These measurements are best done in dry conditions, in order to estimate the contribution of groundwater (base flow) to the total flow.

If field conditions prohibit field reviewers from assessing the condition of a drainage structure, discuss this with the appropriate supervisor to determine if a video inspection or another method of inspection should be arranged via a consultant.

PAVEMENT CONDITION: Note cracking (alligator, longitudinal, etc), wheel ruts, potholes, possible underdrain failure (depressions or longitudinal cracking); absence or errant superelevation; travel way & shoulder widths; number of lanes, if varying; presence of climbing or turning lanes; approx. depth of drop off from pavement to gravel – for estimating shoulder leveling or safety edge; note areas where vehicles are pulling onto gravel shoulder and apparent reason, etc.

ROCK OR LEDGE: Note locations of rock cuts, ledge outcrops, or large boulders, present in clear zone, road or ditchline.

BRIDGE: Note pavement/deck, curb and rail condition; travel way and shoulder widths, clear width for evaluation during any phased construction; streambed erosion/deposition; wingwall or embankment erosion issues; note availability of staging areas; proximity and potential of overhead lines to interfere with construction equipment or material placement.

VEGETATION: Note embankments, vegetation, or trees that inhibit sight distance or shade the roadway (which influences icing); large trees within clear zone

SIGNS: Note locations of posted speed signs, private and digital (electric feed) signs within right-of-way.

FENCES: Note fence height, type, condition, and location of any electric feeds.
UTILITIES: Note pole numbers for poles located closer than 8’ to face of rail or to edge of pavement; locations of pull boxes, water/gas shutoffs, hydrants; overhead lines with respect to culvert constructability or paving equipment; presence of high transmission lines which have tighter restrictions for air space infringement.

SIGNS & ITS: Note mast arm, traffic detector, counter loop, control cabinet locations, and respective lane layout & widths, note RWIS/camera installations, ITS signs

GEOMETRIC ISSUES: Note sight distance concerns, substandard superelevation, horizontal curves hidden by crests, intersecting roads or drives, etc., horizontal alignment locations relative to water features – what can be done to reduce maintenance needs, etc.

WETLAND, STREAMS & RIVERS: Note proximity of water feature relative to road work, evaluate potential for impact based on scope of work.

INVASIVE PLANTS: If identifiable, note presence & type; bring to Environmental Manager’s attention.

DETOURS: If a detour may be required for construction reasons, drive routes to identify possible concerns.

DISTRICT COORDINATION: Highway Maintenance is most familiar with specific roadway issues and is an important source of information. Contact District personnel when scoping the work and continue to coordinate with them throughout the design process. Arrange to meet on site to discuss maintenance concerns. Identify the best individuals in District to coordinate with (District Engineer, Assistant, Civil Engineer 4, Superintendent, Patrolman, etc.) as contacts may vary depending on the District or maintenance personnel in the area.

DCE (District Construction Engineer): Contact and coordinate throughout the contract plan process to obtain input and resolve issues with construction related concerns, contract plan details, and POW/TCP documents.