

Document Release Notice

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| Document #: | GEC-01 | Title: | GEC Annual Inspection of the NTTA Systems | |
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Summary of Proposed Changes:

- Include paragraph numbers or other references & attach a copy of the new or revised documents
- For new documents, indicate "Original Release"

Original Release of : 1. GEC-01 NTTA GEC Annual Inspection, and
 2. GEC-01-F1 NTTA Annual Inspection Observations

Reason for New Release / Revision / Obsolescence:

New release

Required Signatures:

| Title | Printed Name | Signature | Date |
|------------------------------|--------------------|--|---------|
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1.0 PURPOSE:

The purpose of this procedure is to describe the General Engineering Consultant (GEC)'s responsibilities for the general annual visual inspection and assessment of the NTTA System, Special Projects System (SPS), and related facilities as required by Section 504 of the NTTA System Amended and Restated Trust Agreement and Section 710 of the NTTA Special Projects System Trust Agreement.

2.0 RESPONSIBILITIES:

2.1 Project Director (PD) – The PD shall be a licensed civil engineer with prior experience being a program manager or project director, project manager, and field experience. The PD shall:

- Review and understand the trust agreements with the NTTA and ensure the letters to the bond holders, presentations, and all other work performed during annual inspections is in conformance with the trust agreements.
- Coordinate the NTTA staff review of the letters to the bond holders.
- Perform a quality assurance (QA) review of the final letters to the bond holders to ensure they include the inspection findings, advice and recommendations as to the proper maintenance/repair, and cost estimates thereof, per their respective trust agreements.
- Approve, sign, and deliver the final letters to the NTTA for delivery to the bond holders.
- Perform QA review of, and present to the NTTA board, a PowerPoint presentation discussing the significant aspects of the year's inspection results.

2.2 Project Manager (PM) – The PM shall be a licensed civil engineer with prior experience being a project manager as well as inspection field experience. The PM shall:

- Prepare and negotiate the inspection work authorization documents.
- Organize the pre-inspection kick-off meeting by: writing the agenda; inviting field inspectors, Maintenance Management Consultant (MMC) employees and all required NTTA staff; and facilitating the meeting.
- Be the point of contact for the GEC inspection team when communicating with the NTTA and the MMC inspection staff.

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- Obtain from NTTA:
 - A list of bridges and bridge class culverts to be inspected, as well as the TxDOT Bridge Inventory Inspection and Appraisal Program (BRINSAP) reports on all bridges listed.
 - 11x17 black-and-white aerial photography plan sheets of all roadways in the systems at a scale of approximately 1 inch = 250 feet. Plan sheets should show the roadway centerline, stationing, cross street names and should encompass all collector/distributor and direct connector ramps.
 - A list of facilities required for inspection.
 - Governmental Accounting Standards Board (GASB) ratings for the System and the SPS from the most recent year available.
 - Manage the inspection staff to ensure that both budget goals and schedule deadlines are met.
 - Oversee the writing of the two letters to the bond holders, one for the NTTA System and one for the SPS.
 - Perform a quality control (QC) review of the letters to the bond holders, observation spreadsheet and PowerPoint presentation prior to final submittal to the NTTA.
 - Deliver the observation spreadsheet categorized as described in 6.1.7 to the NTTA Maintenance Department and ensure it functions properly on the NTTA computer servers.
- 2.3 Roadway Inspector (RI)** – the RI shall be a licensed civil engineer (or if approved an Engineer in Training (E.I.T.) with P.E. supervision) with prior roadway and drainage design and/or inspection experience. The RI shall:
- Perform visual inspection and condition assessment of all roadways and appurtenances while being accompanied by an NTTA staff member.
- 2.4 Retaining Wall Inspector (WI)** – the WI shall be a licensed civil engineer (or if approved an E.I.T. with P.E. supervision) with prior retaining wall design and/or inspection experience. The WI shall:
- Perform visual inspection and condition assessment of all retaining wall, sound wall, and tunnel elements while being accompanied by an NTTA staff member.
- 2.5 Bridge Inspector (BI)** – the BI shall be a licensed civil engineer (or if approved an E.I.T. with P.E. supervision) with prior bridge design and/or inspection experience. The BI shall:
- Perform visual inspection and condition assessment of all bridges and bridge-class culverts on the list provided by the NTTA while being accompanied by an NTTA staff member.
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2.6 Facilities Inspector (FI) – the FI shall be a licensed architect (or if approved an Associate AIA under the supervision of a licensed architect) with prior architectural design and/or inspection experience. The FI shall:

- Preform visual inspection and condition assessment of all of the NTTA's facilities while being accompanied by an NTTA staff member. The facilities to be inspected shall be as directed by the NTTA and may include main lane plazas, operations buildings, ramp plazas, sand storage enclosures, fiber huts, the central maintenance facility and the Gleneagles administration office complex.

3.0 SCOPE/APPLICABILITY:

This procedure shall apply to the NTTA annual inspections of both the NTTA System and the SPS, as set forth by the Trust Agreements. The NTTA System shall include the Dallas North Tollway (DNT), the President George Bush Turnpike (PGBT), the Eastern Extension of the George Bush Turnpike (PGBT EE), the Sam Rayburn Tollway (SRT), the Addison Airport Toll Tunnel (AATT), the Lewisville Lake Toll Bridge (LLTB), the Mountain Creek Lake Bridge (MCLB) and associated facilities. The SPS shall include the President George Bush Turnpike Western Extension (PGBT WE) and associated facilities. The inspections, letters to the bond holders, observation spreadsheets and presentations shall be complete 90 days prior to the end of the respective NTTA System and SPS fiscal year, as specified in the trust agreements.

4.0 REFERENCES:

- NTTA System Amended and Restated Trust Agreement
- NTTA Special Projects System Trust Agreement
- Prior letters to the bond holders
- Prior observation spreadsheets
- Prior PowerPoint presentations with speaker notes
- BRINSAP reports
- NTTA personnel
- Overhead Sign Structure Inspection
- High Mast Illumination Pole Inspection
- Pavement Management Program
- Texas Accessibility Standards

5.0 DEFINITIONS & ACRONYMS:

N/A

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6.0 PROCEDURES:

6.1 General: The following procedures include tasks involving all inspectors, and where specifically mentioned, the PM and PD.

- 6.1.1** Prior to beginning any field inspections, the PM will schedule and facilitate the kick-off meeting with primary staff involved in the annual inspections (GEC, MMC and NTTA staff). A list of topics to be covered should include at a minimum; the scope, schedule, extent of the maintenance limits, equipment the inspectors will need to perform their tasks, safety protocol, record keeping, and the teaming of NTTA employees with the field inspectors. A contact list with all participants' names, phone numbers and email addresses should be created and distributed to all inspection staff. At the conclusion of the meeting, all participants should be aware of all submittal dates, safety protocol and the extent of the NTTA's maintenance limits.
- 6.1.2** Each field inspector is responsible for coordinating their respective inspection schedule with the NTTA point of contact provided by the PM. The NTTA will supply qualified staff members to team up with each GEC inspection personnel. The NTTA staff participating in the inspections should be knowledgeable of the systems they will assist in inspecting and the inspection / maintenance limits of that system.
- 6.1.3** Perform field inspections only between the hours set by the NTTA maintenance staff and within the limits of NTTA maintenance for the roadways. During inspections, all inspectors must wear the required safety equipment and adhere to all safety protocol set forth by the NTTA. Areas outside of NTTA maintenance responsibility are not required to be included in the inspections. When in the vicinity of ongoing construction or maintenance activities, inspections should not be performed within or near active construction areas.
- 6.1.4** When areas are unsafe or unreachable for pedestrian access during inspections, a rolling lane closure should be requested so that visual inspections may be performed from inside the vehicle. The vehicle shall travel at the slowest safe speed possible for each particular inspection and location, using the roadway shoulder wherever possible. Rolling lane closures should be requested at least 2 weeks in advance, and must be approved and scheduled by the respective NTTA roadway section supervisors. In areas where rolling lane closures are unsafe or where pedestrian access is not feasible, it should be documented as such.
- 6.1.5** If a safety concern requiring immediate attention by the maintenance department is observed, the inspector shall immediately contact the PM, who must in turn inform the NTTA Maintenance Department Director or Assistant Director.
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- 6.1.6 At the conclusion of each inspection day, store/update all pictures, notes, and spreadsheets digitally on a single drive location accessible by the entire GEC inspection staff. Files should be set up in a clear and consistent manner for all inspectors. In cases where all staff may not have daily access to this drive, work should be downloaded at least every other week to this drive. Backup files should be created regularly to prevent loss of productivity or re-work if by chance system files are lost.
 - 6.1.7 Organize and hyperlink all pictures in an observation spreadsheet in such a manner that they may be sorted by damage description, facility/roadway, station/location, direction of travel, date inspected, priority, and any other useful categories deemed helpful by the NTTA and MMC. All field inspectors will complete the portion of the observation spreadsheet for their discipline. Upon completion of the observation spreadsheet, upload the spreadsheet and all pictures to the NTTA server, and confirm the hyperlinked pictures will work on the server properly.
 - 6.1.8 Determine condition ratings for all locations after the completion of the field inspections, organization of notes and pictures, and the observation spreadsheet. Using this information, assess which specific locations should be mentioned in the bond letter for maintenance, monitoring, or repair, and begin writing the letters to the bond holders. Each member of the inspection team must assist with the writing of the letters to the bond holders by contributing information on the condition of each component of the system, relating general trends as well as noting specific concerns and improvements.
 - 6.1.9 The PM should assemble findings from each inspection team members and prepare the report to submit to the bond holders. The final letters should include the inspection findings, advice and recommendations as to the proper maintenance/repair, and cost estimates thereof, and the GASB ratings provided by the NTTA for the respective systems. The PM will also perform a quality control (QC) review of the letter prior to submitting to the PD for Quality Assurance (QA). Once QC and QA are complete, the PD will submit the letter to the Maintenance Department and MMC for review. The inspection team, working with the PM and PD, should address any comments received from the Maintenance Department and MMC and submit the final version of the letters to the NTTA for final review. The final approved letters must be completed and delivered to the NTTA with sufficient time to mail them to the bond holders 90 days prior to the end of the respective NTTA System and SPS fiscal year.
 - 6.1.10 All field inspectors will assist with the creation of two PowerPoint presentations, one for the NTTA System, and one for the SPS, each summarizing the annual inspection findings for their respective systems. The PowerPoint presentations must be completed in sufficient time to be presented by the PD at the first NTTA board meeting following the delivery of the respective letter to the bond holders.
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6.2 Roadway Inspector

- 6.2.1 Perform visual inspection and condition assessment on the following roadway elements: all drainage structures (storm sewer, ditches, concrete flumes and culverts), erosion issues, signing and striping, both rigid and flexible barriers, and a design safety review of the complete systems.
- 6.2.2 Perform visual inspections of all roadway elements while riding with the NTTA roadway section supervisors. The supervisor should drive slowly and carefully along both the inside and outside shoulders allowing the RI time to properly inspect the roadway elements. For those areas deemed unsafe to perform inspections in this manner, a rolling lane closure should be requested to accomplish the inspection.
- 6.2.3 Take pictures of all observed findings along each roadway. At the RI's discretion, pictures may be taken noting overall roadway conditions.
- 6.2.4 Note the observation, location, date, and direction of each picture on the aerial photography plan sheets provided by the PM.

6.3 Retaining Wall Inspector

- 6.3.1 Perform visual inspection and condition assessment on the following retaining wall, sound wall, and tunnel elements: panels, joints, coping, flumes, mow strips, inlets, rails, riprap, slope paving, visible underdrain pipes, sound wall columns; and adjacent: sidewalks, curbs, fencing, roadways, shoulders, soil slopes, and landscaping.
 - 6.3.2 Perform visual inspections of every retaining wall on the systems by walking both top and bottom of each wall, except in areas deemed unsafe for pedestrians (i.e. cut sections along PGBT where the main lanes are within 15 feet of the walls; fill sections along DNT where the top of retaining walls coincide with the main lane barrier rail) In areas where it is unsafe to walk the top or bottom of any wall, a rolling lane closure should be requested to accomplish the inspection.
 - 6.3.3 Perform visual inspections of every sound wall by either walking or driving (depending on accessibility) the front and back side.
 - 6.3.4 Take pictures of all observed findings along each wall whether visible from the top or bottom of the wall. General pictures may be taken at each wall location for common types of widespread deterioration, and should be noted as such. Overall condition pictures should be taken at intervals sufficient to encompass all lengths of all walls for documentation of areas that do not exhibit deterioration or areas of concern.
 - 6.3.5 Note the observation, location, date, direction, and number of each picture on the aerial photography plan sheets provided by the PM.
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6.4 Bridge Inspector

- 6.4.1 Review the BRINSAP reports prior to the bridge inspections. Note any deficiency on the reports, especially ratings less than 6, to be specifically investigated during the visual inspection of each bridge.
- 6.4.2 Perform visual inspections and condition assessment on the following bridge elements: deck, superstructure, substructure, channel and culvert, by walking above, below and alongside the structure, except in areas that are unreachable or deemed unsafe for pedestrians. Such areas are roadways with less than 6 foot shoulders, direct connector ramps, or any other condition which the inspector deems unsafe. Rolling should be requested when inspecting these areas.
- 6.4.3 Visual inspections must be performed while maintaining a clear, detailed view of all bridges, including high level interchanges and bridges over waterways; binoculars may be used to achieve this level of detail.
- 6.4.4 Bridges that cross over large bodies of water, such as MCLB and LLTB, shall be inspected from a NTTA provided motorized boat.
- 6.4.5 Take pictures of all observed findings at each bridge and bridge class culvert location. At the BI's discretion, pictures may be taken noting overall bridge condition.
- 6.4.6 Note the observation, location, date, direction and number of each picture on the bridge inspection form.

6.5 Facilities Inspector

- 6.5.1 Perform visual inspection and condition assessment of the exterior and interior of all facilities, observing all readily accessible areas including enclosed but unlocked plenums, attic spaces, and storage areas. Note any evidence of leaks, insect infestation, structural movement, malfunctioning components, impact damage, and general wear and tear. Note any deterioration of elements, in particular those relevant to Texas Accessibility Standards and the Building Code for Life, Health, and Safety Standards. Record any issues reported to the inspectors by occupants. Spot check function of light fixtures, HVAC, and electrical outlets. Verify that areas and elements intended to be secured are secured.
- 6.5.2 Take pictures of all observed findings at each facility location. General pictures may be taken at each facility for common types of widespread deterioration, and should be noted as such. Take a representative sample of overall condition pictures at intervals sufficient to encompass all facilities for documentation of areas that do not exhibit areas of concern.
- 6.5.3 Note the observation, location, and date of each picture.

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7.0 REGULATORY REQUIREMENTS:

N/A

8.0 RELATED BOARD POLICY:

N/A

9.0 COMPONENT DOCUMENTS:

GEC-01-F1 NTTA Annual Inspection Observations

10.0 FLOWCHART:

N/A

11.0 REVISION HISTORY:

| Revision | Revised by: | Date Issued | DRN No. | Reason for Revision |
|----------|--------------------|-------------|---------|---------------------|
| 0 | Stephanie Halliday | TBD | 10408 | Original Release |

