

# Authority Deficiency Category Definitions

To identify the severity of deficiencies and prioritize the necessary repairs which will help in planning future Maintenance Force and Contract improvements, the deficiencies and conditions noted in the bridge and ancillary structure inspection reports shall be identified within one of the following Authority stipulated repair categories:

## CATEGORY A

**Deficiencies that require prioritized attention with prompt notification given to the Authority.** For such findings, a Category A report is prepared and issued with one of the below subcategories based on urgency and criticality.

### A1 (Emergency)

Critical findings in the bridge deck, superstructure or substructure which, if not repaired immediately, may require closing the bridge, or a portion thereof, and could lead to a total collapse of the structure; or, a defect found at any ancillary structural asset determined as an immediate safety hazard to the traveling public.

Included are defects such as those listed below for each asset type:

#### *Bridge Structures:*

- Crack in a non-redundant primary load carrying steel member
- Bearing collapse / failure or substantial undermining (more than 50%) of the bearing area of a non-redundant primary load carrying member
- Instability or failure of a main superstructure or substructure member
- Severe scour with substantial exposure / undermining of foundations
- Impact, fire or other damage resulting from a motor vehicle accident
- Localized full depth bridge deck failure

#### *Ancillary Structures:*

- Sign panel attachment failure (resulting in loss of redundancy)
- Main structural member failure
- High mast light pole (HMLP) shaft failure
- Severe impact damage
- Instability due to cracks in the welds connecting structural members of a sign structure truss and end frame base plate welds
- Severe section loss to base plate anchor bolts in significant quantities

## A2 (Priority)

Major defects noted which are recommended for necessary repair in the near future as they pose a potential safety concern to the travelling public, or could lead to significant load restriction or partial collapse of the structure.

Included are defects such as those listed below for each asset type:

### *Bridge Structures:*

- Parapet/barrier, deck, haunch, or underdeck fractures over traveled lanes, railroads or pedestrian sidewalks
- Wearing surface spalls, headblock or joint armor failures in traveled lanes
- Slope washout affecting guide rail posts or pavement
- Substantial section loss, deformation or cracking in a primary load carrying member
- Bearing collapse / failure or substantial undermining (more than 50%) of the bearing area of a redundant primary load carrying member
- Navigation lighting deficiencies

### *Ancillary Structures:*

- Significant quantities of missing and/or loose connections bolt nut(s) in a critical area
- Gaps in the truss to tower connection for cantilever sign structures or chord splice connections for overhead signs that result in more than 25% of the connection (s) not being in contact
- Significant spalls impacting the concrete pedestals and anchor bolts supporting sign structures and HMLPs more than 25% of the bearing surface
- Cracks present in structural members
- Differential movement of foundations, pedestals, sound barriers or retaining walls
- Slope washout affecting guide rail posts or pavement

## A3 (Non-Structural)

Issues noted which are recommended for repair before or within the next regularly scheduled contract as they pose a potential safety concern to the travelling public.

Included are defects such as those listed below for each asset type:

### *Bridge Structures:*

- Damage/failure in the structure's security features
- Slope washout not affecting guide rail posts or pavement
- Missing/severely damaged handrails
- Settled sidewalks
- Holes in parapet fencing above traveled lanes, railroads or pedestrian sidewalks
- Flammable materials stored under the bridge

*Ancillary Structures:*

- Slope washout not affecting guide rail posts or pavement.
- Damage/failure in the structure’s security features

Guide Rail

Damage or significant corrosion noted to guide rail elements including attachments to bridges, rail and posts at approach roadway or substructure protection runs, and end terminals at Turnpike and Parkway structures, which require repair in the near future are reported by the issuance of a Guide Rail Type Category A Report.

Utility

Damage or significant corrosion noted to Authority and outside agency utility supports, pipes / conduits and connections at Turnpike and Parkway structures, which require repair in the near future are reported by the issuance of a Utility Type Category A Report.

Inadequate Clearance

Vertical bridge under clearances which are incorrectly posted, or measured to be less than the following minimum thresholds established for New Jersey Turnpike and Garden State Parkway crossings, are reported by the issuance of an Inadequate Clearance Type Category A Report.

Bridges over State Roads	14' - 9" minimum
Bridges over Non-State (County and Local) Roads	14' - 6" minimum
Bridges over New Jersey Turnpike and Garden State Parkway Roads	14' - 0" minimum

**Through Bentley’s InspectTech system, a Category A Report is issued for each item and distributed to Engineering and Maintenance as required. Further information can be found in the Category A Repair Procedures.**

**CATEGORY B / C “Contract / Deck Work”**

**Deficiencies noted that are recommended for repair by an annual Bridge Repair Contract or Specialized Repair Contract as part of the Authority’s Capital Budget Program.**

The following repairs may be considered for inclusion in an annual repair contract under this category:

*Bridge Structures:*

- Full-depth concrete deck replacement
- Permanent concrete deck spall repairs
- Milling and resurfacing
- Parapet, sidewalk/safetywalk/curb, and median spall repairs or upgrades

- Handrail repairs/replacements
- Joint repair/reconstruction
- Header reconstruction
- Superstructure steelwork/connection repairs
- Bearing repairs including seismic retrofits
- Prestressed and reinforced concrete spall and crack repairs in superstructure/substructure units
- Repair of scour/erosion
- Block and concrete slope repairs
- Drainage system cleaning

*Ancillary Structures:*

- Repair of
- Repair of sign truss chord splice connection cracks
- Sign structure / HMLP pad / pedestal repair / reconstructions when more than 25% undermining.
- Installation of missing end caps and hand hole covers
- Repair / replacement of impact damaged panel(s) in retaining wall or noise barrier

The following repairs involve repair work or alterations that are considered highly extensive or require special expertise, equipment, methods, or materials not typically included in an annual bridge repair contract, and are therefore regarded as Specialized Contract work:

*Bridge Structures:*

- Fender repairs/replacement
- Navigation lighting repairs/replacement
- Superstructure repainting
- Guide rail improvements

*Ancillary Structures:*

- Repairs to HMLP raising / lowering mechanisms
- HMLP halo mechanical repairs and winch / electrical cable changeouts

**CATEGORY D      “Maintenance”**

**Deficiencies noted which can be repaired most expeditiously by the Authority’s Maintenance Department.**

This category encompasses routine maintenance, housekeeping, and repair work that includes:

*Bridge Structures:*

- Roadway pothole repairs
- Overlay crack sealing
- Roadway/bridge lighting facilities repair / replacement
- Concrete median / parapet collision repairs

- All delineator/milepost/signing repairs
- Earth and stone slope repairs
- Bridge fencing repairs
- Inlet cleaning
- Right-of-way maintenance item repair

*Ancillary Structures:*

- HMLP re-lamping and electrical repairs
- Repair of missing, loose, cracked or sheared U-bolts
- Repair of loose sign hanger to truss U-bolts
- Replacement of U-bolts with inadequate thread extensions
- Replacement of missing, cracked or loose flange bolts
- Panel background painting
- Sign legend repairs
- Complete sign panel replacements
- Installation of supplemental fasteners
- Sign lighting lamp replacement
- Electrical and walkway repairs.

**CATEGORY E      “Monitor”**

**Noted deficiencies or conditions that are considered actively developing and may be recommended for contract work, but require monitoring until the condition has been remedied. This monitoring would involve an increased inspection frequency and/or level of detail through routine or interim inspections.**

This category covers conditions deemed structurally significant. Defects in this category include the following:

*Bridge Structures:*

- Concrete shrinkage or settlement cracks
- Abnormal positions of bearing devices
- Steelwork corrosion/cracking
- Superstructure/substructure/approach misalignments or subsidence; etc.

*Ancillary Structures:*

- Bulging or misalignments of retaining wall panels
- Concrete / grout pad shrinkage cracks and surface scaling, spalling, deterioration of foundations
- Anchor bolt corrosion
- Loose anchor bolt nuts/washers
- Loose bolts and/or gaps between truss chord splice connections