



**Come back at 10:25 am**

## **Section 4**

**Bridge Scour Evaluation Webinar**

**Scour Plan of Action (POA)**

**Chun Ho Lee**



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## When and why we need a POA



## National Bridge Inventory (NBI) Item 113, Scour Critical Bridges

- N
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- 9
- 8
- 7
- 6
- 5
- 4
- 3
- 2
- 1
- 0

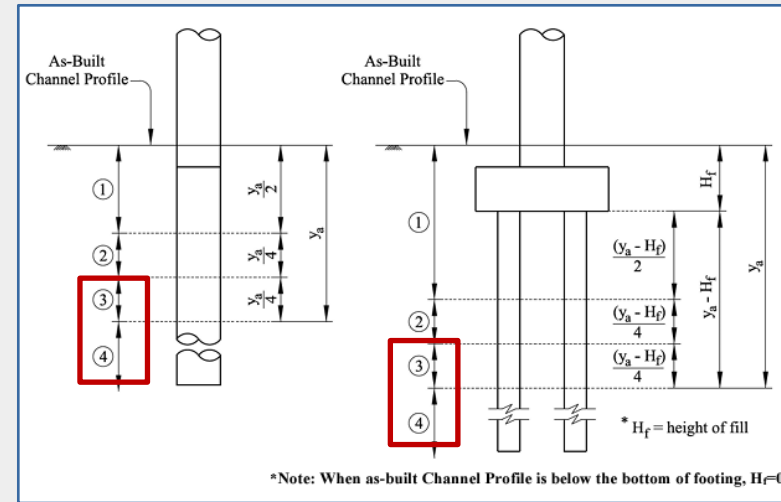
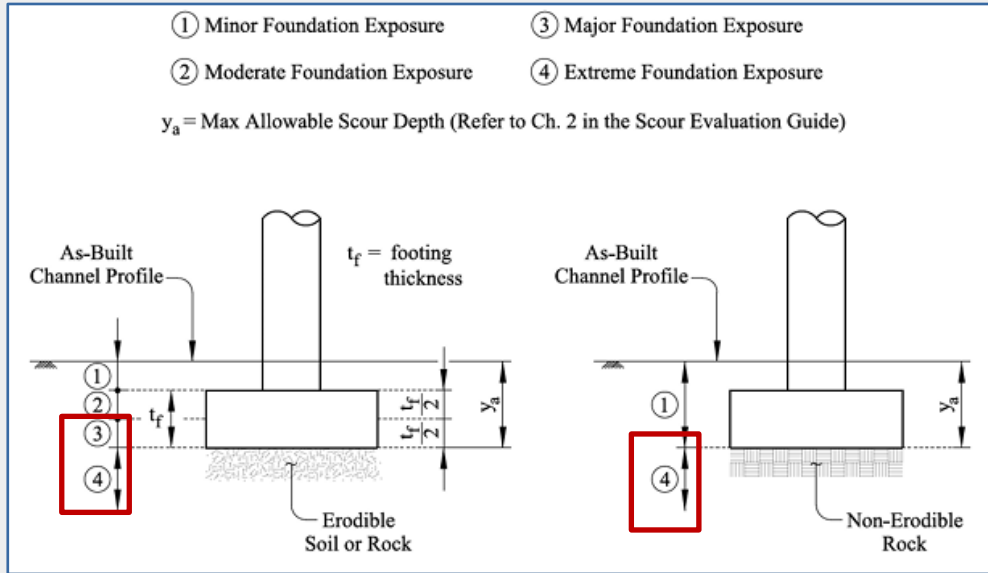
When Item 113 < 4

A bridge is **Scour Critical** if observed or calculated scour results in **Major Foundation Exposure**.



Figure 8-1 Scour Evaluation Guide

## When Item 113 < 4

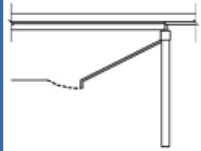




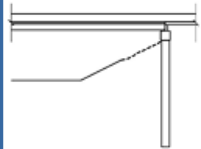
## When Item 113 < 4

### Foundation Exposure Categories for Spill-Through Abutments

Minor ①

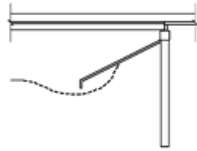


- No significant undermining of riprap

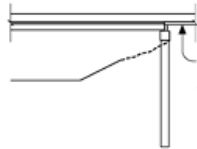


- No significant undermining of cap

Moderate ②

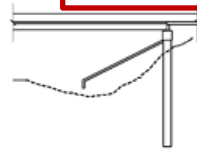


- Significant undermining of riprap
- Embankment not affected

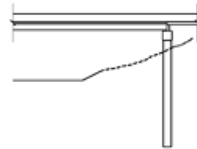


- Significant undermining of cap
- Embankment not affected
- Bridge has concrete approach slab

Major ③



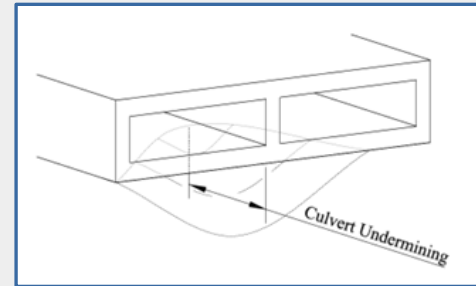
- Significant undermining of riprap
- Undermining extends to embankment



- Significant undermining of cap
- Undermining extends to embankment



## When Item 113<4





## National Bridge Inspection Standards (23 CFR 650.13(e))

Develop and implement a Plan of Action (POA) for scour critical bridges

### Purpose of a POA (HEC 23)

- Provide safety of the traveling public
- Minimize the potential for bridge failure by taking corrective action to address scour issue





## Scour Plan of Action (POA)

- Develop a Plan (If Item 113<4)

| Item 113 Coding | POA Form  |
|-----------------|-----------|
| 1               | Form 2609 |
| 2               | Form 2624 |
| 3               | Form 2604 |

- Implement the Plan

| Item 113 Coding | POA Form                  |
|-----------------|---------------------------|
| 1, 2, or 3      | Form 2607 (POA Follow-Up) |



## POA Requirements



## Scour Critical Bridges

### Plan of Action (POA)

- Describes how the scour problem will be addressed
  - Monitoring instructions
  - Proposed countermeasures
  - Construction schedule (for repair or replacement)
  - Closure instructions
- TxDOT and local bridge owners coordinate to develop the POA



## Monitoring Program (HEC23)

- The **frequency** and **type** of measurement to facilitate early identification of potential scour problems
- Specific instruction** describing precisely what must be done if a bridge is at risk due to scour



## Monitoring Program (Example – Form 2624 for Item 113=2 )

**5a. MONITORING PLAN**

Monitoring Plan Summary: Routine Inspections & Post-Flood Monitoring

Monitoring Authority: TxDOT

Proposed Monitoring:

Regular Inspection Program (No Change in Frequency)  Include Channel Profiles

Items to Watch: Measure extent of undermining. Watch for embankment instability and/or distress in the concrete pipes.

Increased Inspection Frequency (Every \_\_\_\_\_ months)  Include Channel Profiles

Items to Watch: \_\_\_\_\_

Underwater Inspection (Every \_\_\_\_\_ months)

Items to Watch: \_\_\_\_\_

Flood Monitoring

Trigger conditions for Flood Monitoring:

Discharge: \_\_\_\_\_

Stage: \_\_\_\_\_

Other: Whenever a Flash Flood Warning is issued for Blackwater County.

Frequency of Flood Monitoring:

During Flood: Every 24 hours

After Flood: Every 24 hours

Only if it is safe to do so

Observation Type:

Visual: Look for pipe and roadway distress

Other: Use measuring rod to measure undermining

**5b. SCOUR MONITORING CRITERIA FOR CONSIDERATION OF BRIDGE CLOSURE**

| Items to Monitor  | Specific Criteria for Consideration of Bridge Closure  |
|---|--|
| <input checked="" type="checkbox"/> Overtopping of Road or Structure: | Close the structure to traffic if overtopping occurs or appears imminent.  |
| <input type="checkbox"/> Water Surface Elevation:                     |  |
| <input checked="" type="checkbox"/> Observed Scour Depth & Elevation: | Consider closing the bridge if undermining reaches 6 ft.   |
| <input checked="" type="checkbox"/> Observed Settlement:              | Make note of any "bump" in the road as the culvert is crossed by vehicle. If this bump gets worse before the countermeasures are installed, monitor for undermining and distress. Consider closure after monitoring. |
| <input type="checkbox"/> Drift or Debris Accumulation:                |  |
| <input type="checkbox"/> Loss of Riprap:                              |  |
| <input type="checkbox"/> Other:                                       |  |

Frequency and Type of Measurement

Specific Instruction of What Must be Done



## Proposed Countermeasure (Example – Form 2624 for Item 113=2 )

**5. COUNTERMEASURE RECOMMENDATIONS & IMPLEMENTATION**

**Countermeasure Recommendation**

Scour Countermeasures Not Required

Install the Following Scour Countermeasures:

|  | Lead Agency                    | Maintenance Project                 | Construction Project     |
|--|--------------------------------|-------------------------------------|--------------------------|
| <input type="checkbox"/> Abutment Protection Riprap  | <input type="text"/>           | <input type="checkbox"/>            | <input type="checkbox"/> |
| Details: <input type="text"/>  |                                |                                     |                          |
| Estimated Date of Completion: Progress will be logged on Form 2607   |                                |                                     |                          |
| <input type="checkbox"/> Pier Protection Riprap  | <input type="text"/>           | <input type="checkbox"/>            | <input type="checkbox"/> |
| Details: <input type="text"/>  |                                |                                     |                          |
| Estimated Date of Completion: Progress will be logged on Form 2607   |                                |                                     |                          |
| <input type="checkbox"/> Channel Improvements  | <input type="text"/>           | <input type="checkbox"/>            | <input type="checkbox"/> |
| Details: <input type="text"/>  |                                |                                     |                          |
| Estimated Date of Completion: Progress will be logged on Form 2607   |                                |                                     |                          |
| <input type="checkbox"/> Substructure Modification   | <input type="text"/>           | <input type="checkbox"/>            | <input type="checkbox"/> |
| Details: <input type="text"/>  |                                |                                     |                          |
| Estimated Date of Completion: Progress will be logged on Form 2607   |                                |                                     |                          |
| <input checked="" type="checkbox"/> Other  | TxDOT Blackwater Maint. Office | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Details: Backfill the undermined area with flowable fill. Then, install stone protection riprap around the downstream side of the culvert to prevent future erosion. |                                |                                     |                          |
| Estimated Date of Completion: Oct 1, 2020 Progress will be logged on Form 2607   |                                |                                     |                          |

Office in Charge

Other

TxDOT Blackwater Maint. Office

Details: Backfill the undermined area with flowable fill. Then, install stone protection riprap around the downstream side of the culvert to prevent future erosion.

Estimated Date of Completion: Oct 1, 2020 Progress will be logged on Form 2607

Construction Schedule



## Proposed Countermeasure (Example – Form 2624 for Item 113=2 )

**7. REPAIR/REPLACEMENT RECOMMENDATION & IMPLEMENTATION**

Repair and/or Replacement Not Required \*Progress will be logged on Form 2607

Implement the Following Actions:

|   | Lead Agency                                   | Maintenance Project      | Construction Project     | Estimated Date of Completion*                      |
|---|---|--------------------------|--------------------------|--|
| <input type="checkbox"/> Bridge Replacement | <input type="text" value="Office in Charge"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text" value="Construction Schedule"/> |
| Details:                                    | <input type="text"/>                          |                          |                          |  |
| <input type="checkbox"/> Bridge Repair      | <input type="text"/>                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/>                               |
| Details:                                    | <input type="text"/>                          |                          |                          |  |
| <input type="checkbox"/> Bridge Repair      | <input type="text"/>                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="text"/>                               |
| Details:                                    | <input type="text"/>                          |                          |                          |  |



## Closure Plan (Example – Form 2624 for Item 113=2 )

### 8. BRIDGE CLOSURE PLAN

Summary of Bridge Closure Plan: Refer to TxDOT SOP for Bridge Emergency: Response and Notification.

If the structure needs to be closed, contact Rockie Sosa (TxDOT Blackwater Maint. Office, 979-555-6292) for traffic control, barricades, and signing.

Person / Agency Responsible for Closure: Dale Woods, P.E. (TxDOT BRY Dist.) 979-555-6274

Provide Immediate Contacts

Person / Agency Responsible for Re-Opening: Dale Woods, P.E. (TxDOT BRY Dist.) 979-555-6274

Contact People (Name/Agency/Phone Number: Refer to Page 2 of the SOP and add Jamie Bass, P.E. (TxDOT - Blackwater AE) to the list.







## Closure Plan – Detour Plan (Example – Form 2624 for Item 113=2 )

**9. DETOUR ROUTE DESCRIPTION**

Detour Route Description (route number, from-to, etc.)  
 From SE: Turn right on RM 112; Turn left on Chapel Drive; Turn right to get back on SH 86.  
 From N: Turn right on Chapel Drive; Turn left on Rogers Ave; Slight left to get back on SH 86.

Detour Map is Attached (recommended)

**Bridges on Detour Route:**

| Bridge Structure Number | Facility Carried | Waterway Crossed   | Sufficiency Rating (NBI Item 121) | Load Restrictions (NBI Items 41.1-2) | Scour Critical Brigs (Item 113) |
|-------------------------|------------------|--------------------|-----------------------------------|--------------------------------------|---------------------------------|
| 17-264-AA07-17-882      | RM 112           | Wolf Creek         | 84.5                              | A                                    | 5                               |
| 17-264-3221-44-002      | Chapel Dr        | Drainage Ditch     | 91.2                              | A                                    | 8                               |
| 17-264-1100-05-114      | Rogers Ave       | Green Creek        | 88.2                              | A                                    | 7                               |
| 17-264-1100-05-116      | Rogers Ave       | Green Creek Relief | 94.5                              | A                                    | 7                               |
| 17-264-AA13-08-111      | Rogers Ave       | Draw               | 89.9                              | A                                    | 8                               |
|                         |                  |                    |                                   |                                      |                                 |
|                         |                  |                    |                                   |                                      |                                 |

Additional Detour Route Information  
 Contact Rockie Sosa (TxDOT Blackwater Maintenance Office, 979-555-6292) for additional details on traffic control, barricades, and signing.

Detour routes and their conditions



## Outline Summary of POA (Example – Form 2624 for Item 113=2 )

### 4. OUTLINE PLAN OF ACTION

#### Monitoring:

Continue to perform routine inspections on a 24-month cycle. The TxDOT Blackwater Maintenance Office will monitor the culvert after floods (anytime a Flash Flood Warning is issued for Blackwater County). These post-flood inspections will include:

- Measuring extent of undermining on the downstream side of the culvert
- Monitoring for embankment instability
- Monitoring for pipe distress (cracking, spalling, etc.)

#### Countermeasures:

Backfill the undermined area with flowable fill. Then, install stone protection riprap on the downstream side of the culvert to protect against future erosion.



## Responsible Parties (Example – Form 2624 for Item 113=2 )

| Plan of Action Completed By: | Name             | Agency                   |
|------------------------------|------------------|--------------------------|
|                              | Dale Woods, P.E. | TxDOT (BRY Dist.)        |
|                              | Rockie Sosa      | Blackwater Maint. Office |
|                              | Jamie Bass P.E.  | TxDOT (Blackwater AE)    |
|                              |                  |                          |

Date Plan of Action was Completed:

Most Recent Inspection Date:

TxDOT and local bridge owners coordinate to develop the POA



## Other POA Examples in Bridge Scour Website

### Scour documentation examples

#### Pondaseta County example

Box Culvert (Item 113 = 4)

- [04-262-DD77-11-320\\_ScourSumSht\\_2020-08.pdf](#)

#### Blackwater County example

Pipe Culvert (Item 113 = 2)

- [17-264-2005-11-033\\_ScourSumSht\\_2020-08.pdf](#)
- [17-264-2005-11-033\\_ScourPOA\\_2020-08.pdf](#)
- [17-264-2005-11-033\\_POAFU\\_2020-08.pdf](#)

#### Lakewood County example

Box Culvert (Item 113 = 7)

- [14-258-AA07-23-114\\_ScourSumSht\\_2020-07.pdf](#)

#### Rose County example

New Span Bridge (Item 113 = 8)

Detailed Analysis (HEC-18)

- [10-257-0022-03-004\\_ScourSumSht\\_2020-08.pdf](#)
- [10-257-0022-03-004\\_Scour\\_2020-03.pdf](#)

#### Lorelei County example

Existing Span Bridge (Item 113 = 4)

Detailed Analysis (SRICOS)

- [16-263-FF19-03-102\\_ScourSumSht\\_2020-08.pdf](#)
- [16-263-FF19-03-102\\_Scour\\_2020-08.pdf](#)

#### Pearl County example

Span Bridge with Non-Erodible Channel (Item 113 = 5)

Scour Vulnerability Screening (SVS)

- [15-255-0001-99-001\\_ScourSumSht\\_2020-04.pdf](#)
- [15-255-0001-99-001\\_Scour\\_2020-04.pdf](#)

#### Arnold County example

Span Bridge with Unknown Foundations (Item 113 = 5)

Risk Screening for Unknown Foundations

- [12-258-B031-62-118\\_ScourSumSht\\_2020-08.pdf](#)
- [12-258-B031-62-118\\_Scour\\_2020-08.pdf](#)

<https://crossroads/divisions/brg/sections/field-operations-section/scour-forms-and-guidance.html>

#### Oddwood County example

Span Bridge (Item 113 = 3) (On-System)

Scour Vulnerability Assessment (SVA)

- [14-260-2121-06-329\\_ScourSumSht\\_2020-04.pdf](#)
- [14-260-2121-06-329\\_Scour\\_2020-04.pdf](#)
- [14-260-2121-06-329\\_ScourPOA\\_2020-04.pdf](#)
- [14-260-2121-06-329\\_POAFU\\_2020-10.pdf](#)

#### Neches County example

Span Bridge (Item 113 = 7)

Scour Vulnerability Assessment (SVA)

- [20-259-DD02-10-005\\_ScourSumSht\\_2020-07.pdf](#)
- [20-259-DD02-10-005\\_Scour\\_2020-07.pdf](#)

#### Zilker County example


Span Bridge with Unknown Foundations (Item 113 = 2)

Scour Vulnerability Assessment (SVA)

- [14-256-CC33-21-021\\_ScourSumSht\\_2020-02.pdf](#)
- [14-256-CC33-21-021\\_Scour\\_2020-02.pdf](#)
- [14-256-CC33-21-021\\_ScourPOA\\_2020-02.pdf](#)
- [14-256-CC33-21-021\\_POAFU\\_2020-09.pdf](#)



## Scour Memo is not considered as a POA



**MEMO**  
September 17, 2015

**To:** [REDACTED]

**From:** [REDACTED]

**Subject:** Metric 15 – Scour Documentation

---

Scour documentation is a key component of any official record for structures over stream crossings. Compliance with NBIS Metric 15 identifies scour assessment and Scour Plan of Action (POA) documentation for bridges as one of several applicable significant bridge file components that must be found within the contents of a bridge file, else a reference to the location of the scour evaluation documentation be include in the file. Either the scour documentation or the reference statement will be located on Side 4 of the TxDOT Bridge Folder assembly and as a "Bridge Attachments" [REDACTED]

To this end, in the [REDACTED] for those bridges whose scour documentation is not located within the folder, this documentation may be found:

- All "Scour Plans Of Action" [REDACTED]'s office, located in [REDACTED] Building, second floor.
- Initial screening and secondary screening forms are in the bridge inspection files.
- All newer structures, where a scour analysis was included in the plans, is also in the file and highlighted.

- × Date of assessment is 9 years ago
- × Cannot locate the file in AssetWise
- × Cannot trace the POA content in terms of
  - Monitoring instructions
  - Proposed countermeasures
  - Construction schedule (for repair or replacement)
  - Closure instructions



## POA Review and Tracking



## POA Review and Tracking

Step 1 – Verify that the assessed/observed scour condition is scour critical

Step 2 – Ensure a POA is uploaded to AssetWise (Target 113.1 = P “POA on file”)

Step 3 – Ensure existing uploaded POA (113.1 = P) is current



## POA Review and Tracking

Step 1 – Verify that the assessed/observed scour condition is scour critical

Step 2 – Ensure a POA is uploaded to AssetWise (Target 113.1 = P “POA on file”)

Step 3 – Ensure existing uploaded POA (113.1 = P) is current





## POA Review and Tracking

Step 1 – Verify that the assessed/observed scour condition is scour critical

- ✓ as-built channel profile match the inspection measurement?
- ✓ foundation design considered a disregard depth?
- ✓ scour at channel stabilized?
- ✓ structural or geotechnical capacity compromised?
- ✓ overly conservative scour analysis?

\* [Reach out BRG-GEO for assistance \(Scour@txdot.gov\)](mailto:Scour@txdot.gov)



## POA Review and Tracking

Step 1 – Verify that the assessed/observed scour condition is scour critical

Step 2 – Ensure a POA is uploaded to AssetWise (Target 113.1 = P “POA on file”)

Step 3 – Ensure existing uploaded POA (113.1 = P) is current



## POA Review and Tracking

Step 2 – Ensure a POA is uploaded to AssetWise (Target 113.1 = P “POA on file”)

- ✓ Ensure we name the file properly
- ✓ Follow monthly scour report, LOS, and QC Report



## Make sure we properly name POA files

|   |   |  |  |
|---|---|--|--|
| <b>Bridge Attachments (PDFs)<br/>(In the Manager Files)</b> | <b>Various</b>                              | File Driving Record                                | DD-CCC-CCCC-SS-SSS_FileRecord_YYYY-MM      |
|   |   | Post-Construction Material Testing                 | DD-CCC-CCCC-SS-SSS_MaterialTest_YYYY-MM    |
|   |   | Scanned RT Insp Docs - 2012 and Prior (see Note 4) | DD-CCC-CCCC-SS-SSS_RTInsp_2012-YYYY        |
|   |   | Bridge Flood Assessment                            | DD-CCC-CCCC-SS-SSS_FloodAssess_YYYY-MM     |
|   |   | Original plans                                     | DD-CCC-CCCC-SS-SSS_OrigPlans_YYYY          |
|   |   | Widening plans                                     | DD-CCC-CCCC-SS-SSS_Widening_YYYY           |
|   |   | Rehabilitation Plans (reconstruction, etc.)        | DD-CCC-CCCC-SS-SSS_Rehab_YYYY              |
|   |   | Scour Documentation (analysis, TSEAS, etc.)        | DD-CCC-CCCC-SS-SSS_Scour_YYYY-MM           |
|   |   | <b>Scour Plan of Action</b>                        | <b>DD-CCC-CCCC-SS-SSS_ScourPOA_YYYY-MM</b> |
|   |   | Scour Summary Sheet                                | DD-CCC-CCCC-SS-SSS_ScourSumSht_YYYY-MM     |
|   |   | Plan of Action Follow-Up                           | DD-CCC-CCCC-SS-SSS_POAFU_YYYY-MM           |
|   |   | Critical Finding Follow-Up                         | DD-CCC-CCCC-SS-SSS_CFFU_YYYY-MM            |
|   |   | Load Posting Photos                                | DD-CCC-CCCC-SS-SSS_LP_Photos_YYYY-MM       |
| Bridge Closed Photos  | DD-CCC-CCCC-SS-SSS_BrgClosed_Photos_YYYY-MM |  |  |
| Bridge Design Notes and Calculations                        | DD-CCC-CCCC-SS-SSS_DN_YYYY-MM               |  |  |

<https://ftp.txdot.gov/pub/txdot-info/brg/inspection/assetwise-attachment-naming-convention.pdf>





## Target 113.1 = P (POA on file)

Follow Monthly Scour Report → Scour Dashboard (Coming Soon)

**Bridge Detail**

District: (All) | Data Filter: Missouri POA

| NBI             | District       | Facility Name      | Feature Crossed         | Yr Built | Sub Rating | Culvert Rating | Ch. Rn |
|-----------------|----------------|--------------------|-------------------------|----------|------------|----------------|--------|
| 04090AA0203001  | Amarillo       | CR EE              | Palo Duro Creek         | 1960     | 6          | N              |        |
| 040910AA0357001 | Amarillo       | CR 10              | Sad Deer Creek          | 1975     | 7          | N              |        |
| 040990AA0119001 | Amarillo       | CR 4               | Frisco Creek            | 1950     | 5          | N              |        |
| 04AA0162001     | Amarillo       | CR F               | Palo Duro Creek         | 1950     | 5          | N              |        |
| 04AA0108001     | Amarillo       | CR F               | Fork of Palo Duro Creek | 1960     | 6          | N              |        |
| 04AA0368001     | Amarillo       | Cherokee Rd        | Rock Creek              | 1950     | 6          | N              |        |
| 041710AA0136001 | Amarillo       | Texas Beef Rd      | S Palo Duro Cr          | 1960     | 5          | N              |        |
| 041710AA0142001 | Amarillo       | Low Halls Rd       | Fork Way Cr             | 1950     | 6          | N              |        |
| 041790AA0193002 | Amarillo       | CR U               | Wolf Creek Tributary    | 1960     | 7          | N              |        |
| 041790AA0193003 | Amarillo       | CR U               | No Name Creek           | 1960     | 6          | N              |        |
| 041800B01000002 | Amarillo       | W Chaparral Rd     | East Amarillo Creek     | 1940     | 7          | N              |        |
| 042110AA0151301 | Amarillo       | CR 30              | Frisco Creek            | 1960     | 6          | N              |        |
| 042110AA0163001 | Amarillo       | CR 7               | Colowater Creek         | 1960     | 6          | N              |        |
| 091200AA2214001 | Waco           | CR 2234            | AQUILLA CREEK TRIBUTARY | 2011     | 7          | N              |        |
| 111340AA0149001 | Lufkin         | CR 1860            | SAN PEDRO CREEK         | 1998     | 6          | N              |        |
| 111340AA0166001 | Lufkin         | CR 1138            | BROWN CREEK             | 1998     | 6          | N              |        |
| 111340AA0168002 | Lufkin         | CR 1138            | OLD ZION CREEK          | 1988     | 6          | N              |        |
| 111340AA0217001 | Lufkin         | CR 1135            | ROSEY BAYOU             | 1987     | 5          | N              |        |
| 111870AA0233001 | Lufkin         | KENNEDY ROAD       | TRIB OF MCMANUS CRK     | 1989     | 3          | N              |        |
| 111870AA0239002 | Lufkin         | W CANEY LOOP       | CANEY CREEK             | 1970     | 6          | N              |        |
| 111870AA0310001 | Lufkin         | RUCKETT CUTOFF     | LIME BRANCH CREEK       | 1998     | 6          | N              |        |
| 111870AA0328001 | Lufkin         | GARDEN RD          | BLUFF CREEK             | 1985     | 4          | N              |        |
| 111870AA0366001 | Lufkin         | BLUEWATER RD       | WATERHOLE CREEK         | 1994     | 5          | N              |        |
| 111870AA1227001 | Lufkin         | ANDREW JACKSON DR  | MENARD CREEK            | 1990     | 4          | N              |        |
| 120200W00087001 | Houston        | LOUISIANA ST       | MUSTANG BAYOU           | 2013     | 7          | N              |        |
| 120800AA0729001 | Houston        | SHADY OAKS LANE    | COON CREEK              | 2003     | 7          | N              |        |
| 120800AA0946001 | Houston        | BAND RD            | COON CREEK              | 1986     | 6          | N              |        |
| 120800AA1167001 | Houston        | SHADOW BEND DR     | DRAINAGE DITCH          | 1996     | 7          | N              |        |
| 121020AA0758001 | Houston        | RHOODES RD         | SEALS GULLY             | 1996     | 7          | N              |        |
| 121020AA0810001 | Houston        | HURSMITH KICHVILLE | WILLOW CREEK            | 1982     | 6          | N              |        |
| 121020AA1347001 | Houston        | RACCOON DR         | CARY BAYOU              | 1967     | 6          | N              |        |
| 121020B01602068 | Houston        | High Valley Dr     | Blackland Gully         | 1992     | 7          | N              |        |
| 121700C00392044 | Houston        | Grand Village Blvd | Grand Lake Creek        | 2017     | 8          | N              |        |
| 150460B00590001 | San Antonio    | LINCOLN GARDEN ST  | COMAL RIVER             | 1931     | 6          | N              |        |
| 160900AA0189001 | Corpus Christi | DUNE BRIDGE RD     | SAN ANTONIO RIVER       | 1994     | 7          | N              |        |

District List (checked items): (All), Abilene, Amarillo, Atlanta, Austin, Beaumont, Bidartwood, Bryan, Childress, Corpus Christi, Dallas, El Paso, Fort Worth, Houston, Laredo, Lubbock, Lufkin, Odessa, Paris, Pflug, San Angelo, San Antonio, Tyler, Waco, Wichita Falls, Ysuum.

# Scour Plan of Action



## Target 113.1 = P (POA on file)

### Follow LOS at Scour Tab

| Facility Carried    | Feature Crossed        | Current Coding |            |            | Scour Critical (Y/N) | Scour Analysis (*) | Scour Summary Sheet (SSS) | Scour POA | Change in Site Conditions Since Last SSS Compiled (Y/N) | New Scour Summary Sheet or Scour Evaluation Needed (Y/N) | Comments                                       |
|---------------------|------------------------|----------------|------------|------------|----------------------|--------------------|---------------------------|-----------|---|--|--|
|                     |                        | Item 113       | Item 113.1 | Item 113.2 |                      |                    |                           |           |   |  |  |
| OLD ATASCOOTA RD    | HOPCD DITCH 0134-00-00 | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| CORDELS RD          | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| W LAKE HOU PIWY NB  | BENS BRANCH            | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| W LAKE HOU PIWY SB  | BENS BRANCH            | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| MAGNOLIA POINT DR   | HOPCD DITCH            | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| MAGNOLIA POINT DR   | HOPCD DITCH 1102-00-00 | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| NEUMAN RD           | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| MACDONALD HILL RD   | JORDAN GULLY           | S              | A          | U          | N                    | V                  | N                         | N         | N   | N  | *Scour Fish Analysis                           |
| SHOBESHADONS DR     | HOPCD DITCH 1102-00-00 | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| WALNUT LAKE         | HOPCD 0109-88-00       | S              | A          | U          | N                    | V                  | N                         | N         | N   | N  | *Scour Fish Analysis                           |
| W L HOUSTON PIWY NB | LAKE HOUSTON           | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| W TOWNSEN BLVD NB   | HOPCD DITCH            | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| W TOWNSEN BLVD SB   | HOPCD DITCH            | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| PI RD 200           | CAMRY CREEK            | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| DAVIS JOHNSON RD    | LAKE CREEK             | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| MOUNT MURRAY RD     | LAKE CREEK             | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| NICKLAURE CREEK DR  | NICKLAURE CREEK        | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| W ALDEN BRIDGE DR   | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| W BRANCH CROSSING   | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| WOODLANDS PIWY      | SPRING CREEK TRIBUTARY | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| WOODLANDS PIWY      | SPRING CREEK TRIBUTARY | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| CEFFLE CREEK DR     | DECKER BRANCH          | S              | A          | U          | N                    | V                  | N                         | N         | N   | N  | *Scour Fish Analysis                           |
| DECKER F ROSEHILL   | WALNUT CREEK           | S              | A          | U          | N                    | V                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| PALMER WOODS DR     | PALMER LAKE            | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| HIGHLAND BLVD       | DRY CREEK              | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| HIGHLAND BLVD       | DRY CREEK RELIEF       | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| BRANCH CROSSING     | SPRING CREEK TRIBUTARY | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| DRIGHTON RD         | STEWARTS CREEK         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| Hadden Lakes Dr     | Blackland Gully        | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| High Valley Dr      | Blackland Gully        | S              | REQD       | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| Conner Valley Dr    | HOPCD Ditch 0109-80-01 | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| Mids Branch Dr      | HOPCD Ditch 0109-80-01 | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Vulnerability Assessment                |
| DEEP PATH LN        | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Summary Sheet for Bridge Class Culverts |
| FLINTRIDGE DR       | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Summary Sheet for Bridge Class Culverts |
| FLINTRIDGE DR       | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Summary Sheet for Bridge Class Culverts |
| FLINTRIDGE DR       | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Summary Sheet for Bridge Class Culverts |
| FLINTRIDGE DR       | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Summary Sheet for Bridge Class Culverts |
| FLINTRIDGE DR       | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Summary Sheet for Bridge Class Culverts |
| FLINTRIDGE DR       | DRAINAGE DITCH         | S              |            | U          | N                    | *                  | N                         | N         | N   | N  | *Scour Summary Sheet for Bridge Class Culverts |



## Make sure existing uploaded POA is current

Follow QC report

### SECTION 4 - NBI AND SCOUR DOCUMENTATION

Select "Yes" if the items listed below are included in the hard copy and electronic versions of the report and the data is accurate. Select "No" if one or more of the items listed below is missing/incomplete or inaccurate. If a "No" is selected, a comment is required listing the reason for each item that is substandard. If an item in the list does not apply to the structure you are reviewing, but all other paperwork is present and acceptable, select "Yes".

Prior to District Approval of Report, verified using the Report Tool "View Change Report" that updated asset values are consistent with photos/report and NBI coding guidelines

- Recommended changes to values consistent with inspection findings & cursory review of all Items Scour Documentation
- Verify that Items 113 & 113.1 are reflective of current conditions and contact Geotechnical Section for updates to coding if needed \*

Scour Summary Sheet (SS&D) \*

Identify other type of scour documentation in comments box for this section

Scour Critical Bridge (if Item 113 ≤ 3)

Scour Plan of Action (POA) is current \*

Photos/documentation of temporary scour repairs if in place \*

POA Follow-Up Form if POA was implemented \*

Comments:

Text Description:(All assets and open reports where field 'QC Folder: NBI and Scour Documentation' = 'No')

Enter Query Criteria

Add Criteria Field to Displayed Columns

Additional Filters

Return results that match **All** of the following:

→ QC\_Folder: NBI and Scour Documentation [ = ] No [ Q ]

Select Display Columns

[Click to add a new criteria](#)





## POA Review and Tracking

Step 1 – Verify that the assessed/observed scour condition is scour critical

Step 2 – Ensure a POA is uploaded to AssetWise (Target 113.1 = P “POA on file”)

Step 3 – Ensure existing uploaded POA (113.1 = P) is current



## POA Review and Tracking

Step 3 – Ensure existing uploaded POA (113.1 = P) is current

- ✓ Follow monthly scour report and LOS and QC report
- ✓ BRG Division is reviewing POA's developed prior to 2020



## Ensure existing uploaded POA is current

BRG Review POA prior to 2020

- BRG file query POA uploaded to AssetWise before 2020
- A total of 219 structures were found

| Row Labels         | Count of Asset Name |
|--------------------|---------------------|
| *02                | 24                  |
| *03                | 5                   |
| *04                | 5                   |
| *06                | 3                   |
| *08                | 2                   |
| *09                | 5                   |
| *10                | 4                   |
| *11                | 4                   |
| *12                | 3                   |
| *13                | 6                   |
| *25                | 2                   |
| <b>Grand Total</b> | <b>64</b>           |

Current status of reviewing (out of a total of 219 structures)



## Make sure existing uploaded POA is current

BRG is reviewing POA's prior to 2020

| B            | C                               | P               | Q           | R                         | S                              | T  |
|--------------|---------------------------------|-----------------|-------------|---------------------------|--------------------------------|--|
|              |                                 |                 |             | Have Updated POA Uploaded | Recommend Revisit Scour Coding |  |
| Parent Asset | Asset Name                      | Reviewed by BRG | Review Date | Y/N/(M)aybe/NA            | (Y/N/NA)                       | BRG-FO-GEO Comment   |
| District 02  | <a href="#">022200C02423003</a> | Y               | 2/23/2024   | M                         | Y                              | POA might be legit. Scour assessment is outdated. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up  |
| District 02  | <a href="#">022200C03726001</a> | Y               | 2/23/2024   | M                         | Y                              | POA might be legit. Scour assessment is outdated. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up  |
| District 02  | <a href="#">022200F00262001</a> | Y               | 2/26/2024   | M                         | Y                              | POA might be legit. Scour assessment is outdated. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up  |
| District 02  | <a href="#">022200M00455001</a> | Y               | 2/26/2024   | M                         | Y                              | POA might be legit. Scour assessment is outdated. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up  |
| District 02  | <a href="#">022200M00665002</a> | Y               | 2/26/2024   | M                         | Y                              | POA might be legit. Scour assessment is outdated. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up  |
| District 02  | <a href="#">022200P00360001</a> | Y               | 2/26/2024   | M                         | Y                              | POA might be legit. Scour assessment is outdated. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up  |
| District 02  | <a href="#">022200ZC2225001</a> | Y               | 2/26/2024   | M                         | Y                              | POA might be legit. Scour assessment is outdated. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up  |
| District 02  | <a href="#">022200ZS2737001</a> | Y               | 2/26/2024   | N/A                       | N                              | POA removed because the Scour rating has been upgraded. BRG-GEO switched coding (Item 113=8) reflecting the recent scour e       |
| District 02  | <a href="#">022200ZS2737002</a> | Y               | 2/26/2024   | N/A                       | N                              | POA removed because the Scour rating has been upgraded. BRG-GEO switched coding (Item 113=8) reflecting the recent scour e       |
| District 02  | <a href="#">022200ZU4000005</a> | Y               | 2/26/2024   | Y                         | N                              | POA and Scour evaluation are recently done.  |
| District 02  | <a href="#">022200ZU4000006</a> | Y               | 2/26/2024   | Y                         | N                              | POA and Scour evaluation are recently done.  |
| District 02  | <a href="#">022200ZW3345001</a> | Y               | 2/26/2024   | N/A                       | N                              | POA removed because the Scour rating has been upgraded. BRG-GEO switched coding (Item 113=8) reflecting the recent scour e       |
| District 02  | <a href="#">022200ZW3345002</a> | Y               | 2/26/2024   | N/A                       | N                              | POA removed because the Scour rating has been upgraded. BRG-GEO switched coding (Item 113=8) reflecting the recent scour e       |
| District 02  | <a href="#">022200ZW3345003</a> | Y               | 2/26/2024   | N/A                       | N                              | POA removed because the Scour rating has been upgraded. BRG-GEO switched coding (Item 113=8) reflecting the recent scour e       |
| District 02  | <a href="#">022200ZW3345004</a> | Y               | 2/26/2024   | M                         | Y                              | POA might be legit. Scour assessment is not found. Suggest to revisit scour coding with a new Scour Eval. BRG-GEO will follow up |
| District 03  | <a href="#">031690004406050</a> | Y               | 2/1/2024    | N                         | Y                              | POA is not legit. Scour Evaluation is not legit.   |
| District 03  | <a href="#">032440004305015</a> | Y               | 2/1/2024    | N/A                       | N/A                            | A new SSS and assessment have been upload in 2024. BRG-GEO revised coding to "5" based on new assessment                         |
| District 03  | <a href="#">032440004305016</a> | Y               | 2/1/2024    | N/A                       | N/A                            | A new SSS and assessment have been upload in 2024. BRG-GEO revised coding to "5" based on new assessment                         |
| District 03  | <a href="#">032440004306022</a> | Y               | 2/1/2024    | N                         | Y                              | POA is not legit. Scour Evaluation is not legit. Suggest to go for Scour Evaluation first. Item 113 should be able to be raised. |
| District 03  | <a href="#">032440177001001</a> | Y               | 2/1/2024    | N/A                       | N/A                            | A new SSS and assessment have been upload in 2024. BRG-GEO revised coding to "5" based on new assessment                         |
| District 04  | <a href="#">040060035703002</a> | Y               | 2/2/2024    | M                         | Y                              | POA is old 2010 but monitoring plan is current. Suggest to revisit scour coding with a more updated scour evaluation.            |
| District 04  | <a href="#">040590124302004</a> | Y               | 3/4/2024    | M                         | Y                              | POA was developed yr 2013. Scour Assessment are outdated. Suggest to revisit scour coding with a more updated scour evaluat      |

**District:**

- Review N and (M)aybe in Column R
- Revisit Scour Coding for Y in Column S



## In Summary

- ❑ POA's improve safety of the traveling public and minimize the potential for bridge failure
- ❑ POA is needed when Item 113 <4
- ❑ Follow monthly scour report, LOS, QC Folder, and BRG review for tracking POA update