Appendix D
Dredging Design Engineered Plan Drawings
LOWER PASSAIC RIVER
RIVER MILE 10.9
TIME CRITICAL REMOVAL ACTION

PROJECT SITE

DREDGING
DRAFT FINAL DESIGN
NOTES:
1. Grid Coordinate System: NAD 83
2. Landside Vertical Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM's Subcontractor GeOD Corporation
   Publication Date: 2007/11/14
5. Bathymetric Data Provided By AECOM's Subcontractor Gahagan & Bryant Associates
   Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated sediment and are not to be interpreted as the boundary of dredging.
NOTES:
1. Grid Coordinate System: NAD 83
2. Landside Vertical Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM’s Subcontractor GEOD Corporation
Publication Date: 2007/11/14
5. Bathymetric Data Provided By AECOM’s Subcontractor Gahagan & Bryant Associates
   Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated
   sediment and are not to be interpreted as the boundary of dredging
NOTES:
1. Sediment sampling locations and analytical data provided in River Mile 10.9 Characterization Program Summary, Lower Passaic River Study Area, CH2M HILL & AECOM, April 19, 2012
2. Removal Area Boundary shown is based on regulatory accepted limits of contaminated sediment and are not to be interpreted as the boundary of dredging.
NOTES:
1. Removal Area Boundary shown is based on regulatory accepted limits of contaminated sediment and are not to be interpreted as the boundary of dredging.
2. Other unknown utilities may exist that are not mapped.
3. 72" United Water pipeline location digitized from the UWJC 72in Watermains across Lower Passaic River drawings.
5. Pipeline is owned by the Passaic Valley Water Commission (PVWC).
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NOTES:
1. Grid Coordinate System: NAD 83
2. Landside Vertical Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided by AECOM's Subcontractor GEOD Corporation
   Publication Date: 20071114
5. Bathymetric Data Provided by AECOM's Subcontractor & Bryant Associates
   Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated
   sediment and are not to be interpreted as the boundary of dredging
7. Post-dredge elevations based on removing the top 2 feet of sediment in
   accordance with USEPA Administrative Settlement Agreement and
   Order on Consent for Removal Action, Docket No. 02-2012-2015 (June 2012)
8. See Technical Specification Section 31 23 24 - Dredging and Delivery for over/under/tolerance limits
**NOTES:**

1. Grid Coordinate System: NAD 83
2. Landside Vertical Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM’s Subcontractor GEOD Corporation
   - Publication Date: 20071114
5. Bathymetric Data Provided By AECOM’s Subcontractor & Bryant Associates
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7. Post dredge elevations based on removing the top 2 feet of sediment in accordance with USEPA Administrative Settlement Agreement and Order on Consent for Removal Action, Docket No. 02-2012-2015 (June 2012)
8. See Technical Specification Section 31 23 24 - Dredging and Delivery for over/dredge/tolerance limits
NOTES
1. Grid Coordinate System: NAD 83
2. Landside Vertical Datum: NGVD 29
3. Waterside Vertical Datum: NGVD 29
4. Topographical Data Provided By AECOM's Subcontractor GEOD Corporation
   Publication Date: 20071114
5. Bathymetric Data Provided By AECOM's Subcontractor Gahagan & Bryant Associates
   Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated
   sediment and are not to be interpreted as the boundary of dredging
7. Cross sections every 50 feet shown on Drawings C-7 to C-19
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on an average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on an average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections

MEAN HIGH WATER
MEAN LOW WATER

EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY

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1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on an average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on an average target
elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on MNGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target
elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections

EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: +3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections

EXISTING SEDIMENT SURFACE
POST DREDGING ELEVATION
REMOVAL AREA BOUNDARY
(INTERCEPT TO EXISTING GRADE)
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target
elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections

- REMOVAL AREA BOUNDARY
  (INTERCEPT TO EXISTING GRADE)
- MEAN HIGH WATER
- MEAN LOW WATER
- EXISTING SEDIMENT SURFACE
- POST DREDGING ELEVATION
- POINT DREDGING ELEVATION

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1. All elevations based on WGS 84 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on average target elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on MNGD 29 Datum
2. Belleville Mean High Water: 3.782 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target
elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
1. All elevations based on NGVD 29 Datum
2. Belleville Mean High Water: 3.786 Feet
   Belleville Mean Low Water: -1.811 Feet
3. Final dredge elevations based on a average target
elevation of minus 2 feet from existing sediment surface
4. See Drawing C-6 for location of cross sections
<table>
<thead>
<tr>
<th>Bridge Name</th>
<th>Mile</th>
<th>River</th>
<th>Bridge Type</th>
<th>Max. Horizontal</th>
<th>Max. Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rutgers (Rte 7) Bridge</td>
<td></td>
<td>River</td>
<td>Double leaf bascule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lyndhurst-Delaware Rail Bridge</td>
<td></td>
<td>Opening swing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DeJessa Park Avenue Bridge</td>
<td>11.65</td>
<td>Vertical</td>
<td>Lift deck</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rutherford Avenue (Rte 3) Bridge</td>
<td>11.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rutherford Avenue (Rte 3) Bridge</td>
<td>10.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rutherford Avenue (Rte 3) Bridge</td>
<td>8.53</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maximum vertical clearance is measured at low tide. If a lift bridge, vertical clearance in parenthesis refers to clearance when bridge is open.

NA, not applicable, since bridge was removed. -, data not available.

RM data was sourced from Table 2-5 of LRC report, for consistency (AECOM, 2011).
<table>
<thead>
<tr>
<th>Bridge Name</th>
<th>Bridge Type</th>
<th>River Mile</th>
<th>Max. Horizontal</th>
<th>Max. Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amtrak Dock Bridge</td>
<td>Fixed rail (decommissioned swing)</td>
<td>7.99</td>
<td>6.07</td>
<td>4.75</td>
</tr>
<tr>
<td>Fourth Ave Conrail Bridge</td>
<td>Single-leaf truss bascule (fixed open)</td>
<td>7.81</td>
<td>6.07</td>
<td>4.75</td>
</tr>
<tr>
<td>Clay Street Bridge (Central Ave)</td>
<td>Swing</td>
<td>7.74</td>
<td>5.83</td>
<td>3.75</td>
</tr>
<tr>
<td>Stickel Bridge (I-280)</td>
<td>Swing</td>
<td>7.51</td>
<td>5.61</td>
<td>3.50</td>
</tr>
<tr>
<td>Bridge Street Bridge</td>
<td>Draw</td>
<td>7.32</td>
<td>5.57</td>
<td>3.40</td>
</tr>
<tr>
<td>Penn RR at Center Street</td>
<td>Draw</td>
<td>7.18</td>
<td>5.41</td>
<td>3.30</td>
</tr>
<tr>
<td>Penn RR at Market Street</td>
<td>Lift deck</td>
<td>7.05</td>
<td>4.75</td>
<td>2.50</td>
</tr>
<tr>
<td>Jackson Street Bridge (Frank E. Rodgers Blvd S/C Rd 697)</td>
<td>Lift</td>
<td>7.00</td>
<td>4.75</td>
<td>2.50</td>
</tr>
<tr>
<td>Morristown Line RR Bridge / (Newark-Harrison)</td>
<td>Swing</td>
<td>6.89</td>
<td>4.37</td>
<td>1.90</td>
</tr>
<tr>
<td>Erie Swing Bridge</td>
<td>Swing</td>
<td>6.62</td>
<td>2.92</td>
<td>1.52</td>
</tr>
</tbody>
</table>

*Source: Lower Passaic River Commercial Navigation Analysis Rev 2 (USACE, 2010); Lower Resolution Coring Characterization Summary, Lower Passaic River Study Area RI/FS (AECOM, 2011).*

Maximum vertical clearance is measured at low tide. If a lift bridge, vertical clearance in parentheses refers to clearance when bridge is open. NA, not applicable, where zero maximum clearance was found.

RM data was sourced from Table 2-5 of LRC report, for consistency (AECOM, 2011).
<table>
<thead>
<tr>
<th>Bridge Name</th>
<th>Bridge Type</th>
<th>River Mile</th>
<th>Max. Horizontal</th>
<th>Max. Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>NJ Turnpike Bridge (I-95)</td>
<td>Fixed span</td>
<td>2.41</td>
<td>452</td>
<td>243</td>
</tr>
<tr>
<td>Pulaski Skyway (Rt 1 &amp; 9)</td>
<td>Swing</td>
<td>2.33</td>
<td>103</td>
<td>520</td>
</tr>
<tr>
<td>Lincoln Highway Bridge (US-1 Truck)</td>
<td>Lift deck</td>
<td>1.75</td>
<td>145</td>
<td>300</td>
</tr>
<tr>
<td>Central Railroad of NJ (not in use)</td>
<td>Lift (dismantled)</td>
<td>0.91</td>
<td>140</td>
<td>45 (140)</td>
</tr>
</tbody>
</table>


Maximum vertical clearance is measured at low tide. If a lift bridge, vertical clearance in parenthesis refers to clearance when bridge is open.

NA, not applicable, since bridge was removed. -, data not available.

RM data was sourced from Table 2-5 of LRC report, for consistency (AECOM, 2011).
NOTES
1. Grid Coordinate System: NAD 83
2. Landslide Vertical Datum: NGS 93
3. Waterline Vertical Datum: NGS 93
4. Topographical Data Provided By AECOM's Subcontractor GEOD Corporation
5. Bathymetric Data Provided By AECOM's Subcontractor Gahagan & Bryant Associates
   Single Beam Surveyed July 2011, Multi Beam Surveyed October 2011
6. Removal Area Boundary shown is based on regulatory accepted limits of contaminated
   sediment and are not to be interpreted as the boundary of dredging
7. See Technical Specification Section D1-45 18 Water Quality Monitoring and Control for
   water quality monitoring requirements