

## **Appendix E – Supporting Data**

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**Table E-1. Acres of Prime Farmland on Douglas and Nolichucky Tributary Reservoirs Parcels**

| Reservoir  | Parcel | Common Name                       | Total Acres in Parcel | Allocation           |               |               |               |
|------------|--------|-----------------------------------|-----------------------|----------------------|---------------|---------------|---------------|
|            |        |                                   |                       | Acres Prime Farmland | Alternative A | Alternative B | Alternative C |
| Douglas    | 1      | Dam Reservation                   | 579.4                 | 148.9                | 2             | 2             | 2             |
| Douglas    | 7      | Shoreline Access                  | 1.3                   | 0.9                  | 7             | 7             | 7             |
| Douglas    | 13     | Henderson Island Refuge           | 208.1                 | 47.7                 | 4             | 4             | 4             |
| Douglas    | 32     | Rankin Access                     | 2.3                   | 2.3                  | 6             | 6             | 6             |
| Douglas    | 33     | Rankin Bottoms Wildlife           | 16.7                  | 8.0                  | 4             | 4             | 4             |
| Douglas    | 44     | Dandridge Big Ramp                | 25.5                  | 6.5                  | 6             | 6             | 6             |
| Douglas    | 52     | Cattails Shoreline                | 111.7                 | 3.4                  | 6             | 4             | 4             |
| Douglas    | 54     | Saddle Dam 10                     | 121.9                 | 1.4                  | 2             | 2             | 2             |
| Douglas    | 61     | Saddle Dams 1-6 (Sevier Co. Park) | 284.8                 | 25.4                 | 2             | 2             | 2             |
| Nolichucky | 2      | Dam Reservation                   | 52.7                  | 13.1                 | 2             | 2             | 2             |
| Nolichucky | 3      | Golf Course                       | 48.9                  | 2.2                  | 4             | 4             | 4             |
| Nolichucky | 4      | Kinsler Park                      | 265.3                 | 17.3                 | 6             | 6             | 6             |
| Nolichucky | 5      | Richland Creek                    | 22.5                  | 3                    | 4             | 3             | 3             |
| Nolichucky | 8      | Mutton Creek                      | 62.0                  | 4.8                  | 4             | 3             | 3             |
| Nolichucky | 9      | Jones Bridge South                | 63.5                  | 34.3                 | 4             | 3             | 3             |
| Nolichucky | 11     | Jones Bridge North                | 43.3                  | 1.1                  | 4             | 3             | 3             |
| Nolichucky | 12     | Gasteiger Project                 | 38.0                  | 2.6                  | 4             | 4             | 4             |
| Nolichucky | 13     | Johnson Hollow                    | 3.5                   | 1.1                  | 4             | 4             | 4             |
| Nolichucky | 18     | Bird Island Shoreline             | 33.5                  | 12.7                 | 4             | 3             | 3             |
| Nolichucky | 19     | Johnson Island Shoreline          | 102.2                 | 55.1                 | 4             | 3             | 3             |
| Nolichucky | 20     | Duck Blind                        | 64.8                  | 4.1                  | 4             | 3             | 3             |
| Nolichucky | 21     | Vulcan                            | 3.4                   | 0.2                  | 5             | 5             | 5             |
| Nolichucky | 22     | Mud Creek                         | 80.7                  | 12.2                 | 4             | 3             | 3             |
| Nolichucky | 23     | Flag Branch                       | 94.7                  | 28.5                 | 4             | 3             | 3             |
| Nolichucky | 36     | Kiker 11                          | 12.3                  | 1.1                  | 6             | 6             | 4             |

**Table E-2. Nolichucky Reservoir Nolichucky River Flood Elevations**

| River Mile |    | 100-Year Flood <sup>1</sup> | 500-Year Flood <sup>1</sup> | Landmark            |
|------------|----|-----------------------------|-----------------------------|---------------------|
| 46.00      |    | 1260.3                      | 1266.3                      | Nolichucky Dam      |
| 46.19      |    | 1261.8                      | 1268.3                      |                     |
| 46.48      |    | 1262.7                      | 1269.5                      |                     |
| 47.02      |    | 1263.1                      | 1269.8                      |                     |
| 47.26      |    | 1263.7                      | 1270.6                      |                     |
| 47.75      |    | 1264.0                      | 1270.7                      |                     |
| 48.44      |    | 1265.5                      | 1272.6                      |                     |
| 48.75      |    | 1266.9                      | 1274.6                      |                     |
| 49.64      |    | 1268.1                      | 1275.8                      |                     |
| 50.10      |    | 1269.2                      | 1276.8                      |                     |
| 50.28      | D* | 1270.2                      | 1277.7                      | Bird Bridge         |
| 50.28      | U* | 1271.7                      | 1281.4                      |                     |
| 50.60      |    | 1273.3                      | 1283.4                      |                     |
| 51.05      |    | 1274.1                      | 1284.1                      |                     |
| 51.49      |    | 1276.6                      | 1286.4                      |                     |
| 51.91      |    | 1276.8                      | 1286.4                      |                     |
| 52.72      |    | 1278.3                      | 1288.1                      |                     |
| 53.16      |    | 1279.4                      | 1289.2                      |                     |
| 54.23      | D* | 1282.8                      | 1293.0                      | Jones Bridge        |
| 54.23      | U* | 1283.0                      | 1293.1                      |                     |
| 55.24      |    | 1286.9                      | 1296.3                      |                     |
| 55.68      |    | 1288.0                      | 1297.3                      |                     |
| 56.25      |    | 1290.7                      | 1300.4                      |                     |
| 56.69      |    | 1292.5                      | 1303.2                      |                     |
| 57.20      |    | 1294.1                      | 1304.2                      |                     |
| 58.08      |    | 1298.5                      | 1308.7                      |                     |
| 58.61      |    | 1302.2                      | 1313.3                      |                     |
| 58.95      |    | 1303.6                      | 1315.1                      |                     |
| 59.38      |    | 1305.0                      | 1316.1                      |                     |
| 59.90      |    | 1306.7                      | 1318.0                      |                     |
| 60.42      | D* | 1308.5                      | 1320.0                      | John Sevier Highway |
| 60.42      | U* | 1309.9                      | 1322.1                      |                     |
| 60.72      |    | 1310.6                      | 1322.6                      |                     |
| 61.28      |    | 1312.7                      | 1324.5                      |                     |
| 62.06      |    | 1317.3                      | 1329.2                      |                     |

<sup>1</sup>All elevations are National Geodetic Vertical Datum Model of 1929

\*Downstream and Upstream at Bridges

**Table E-3. Douglas Reservoir French Broad River Flood Profiles**

| River Mile | 100-Year Flood <sup>1</sup> | 500-Year Flood <sup>1</sup> | Landmark                                |
|------------|-----------------------------|-----------------------------|---|
| 32.30      | 1002.6                      | 1003.0                      | Douglas Dam                             |
| 33.27      | 1002.6                      | 1003.0                      | Flat Creek                              |
| 36.69      | 1002.6                      | 1003.0                      | McGuire Creek                           |
| 41.00      | 1002.6                      | 1003.0                      | Muddy Creek                             |
| 45.11      | 1002.6                      | 1003.0                      | State Route 92 - James D Hoskins Bridge |
| 46.20      | 1002.6                      | 1003.0                      | Rimmer Creek                            |
| 50.50      | 1002.6                      | 1003.0                      | Indian Creek                            |
| 51.10      | 1002.6                      | 1003.0                      | Moore Branch                            |
| 54.30      | 1002.6                      | 1003.0                      | Seahorn Creek                           |
| 54.36      | 1002.6                      | 1003.0                      | U.S. Highway 25 & 70 - Swann Bridge     |
| 54.51      | 1002.6                      | 1003.0                      | Interstate-40                           |
| 64.22      | 1002.6                      | 1003.0                      | U.S. Highway 25E - Walters Bridge       |
| 67.86      | 1002.6                      | 1003.0                      | Southern Railway                        |
| 67.90      | 1002.6                      | 1003.0                      | Leadvale Creek                          |
| 69.17      | 1002.6                      | 1003.0                      | Nolichucky River                        |
| 71.39      | 1002.6                      | 1003.0                      | Abandoned Bridge                        |
| 71.58      | 1002.6                      | 1003.0                      | Rankin Bridge                           |
| 71.77      | 1002.6                      | 1003.0                      |   |
| 72.17      | 1002.6                      | 1005.8                      |   |
| 72.20      | 1002.8                      | 1005.9                      |   |
| 72.40      | 1003.8                      | 1006.8                      |   |
| 72.50      | 1004.3                      | 1007.2                      |   |
| 72.52      | 1004.5                      | 1007.4                      |   |
| 72.63      | 1005.4                      | 1008.4                      |   |
| 73.32      | 1011.2                      | 1014.5                      |   |
| 73.80      | 1014.7                      | 1018.1                      | Pigeon River                            |
| 74.60      | 1020.4                      | 1024.0                      |   |
| 75.20      | 1022.5                      | 1026.7                      |   |

<sup>1</sup>All elevations are National Geodetic Vertical Datum Model of 1929

Douglas and Nolichucky Tributary Reservoirs Land Management Plan

**Table E-4. French Broad River Flood Profiles Downstream of Douglas Dam**

| River Mile |    | 100-Year Flood <sup>1</sup> |  | 500-Year Flood <sup>1</sup> |  | Landmark                    |
|------------|----|-----------------------------|--|-----------------------------|--|-----------------------------|
| 31.40      |    | 883.8                       |  | 892.1                       |  | Lower Limit of TVA Property |
| 31.74      | D* | 884.5                       |  | 892.7                       |  | Douglas Dam Road            |
| 31.74      | U* | 884.6                       |  | 892.9                       |  |                             |
| 32.10      |    | 885.3                       |  | 893.7                       |  |                             |
| 32.23      |    | 885.6                       |  | 894.1                       |  | Downstream of Douglas Dam   |

<sup>1</sup>All Elevations are National Geodetic Vertical Datum Model of 1929

\*Downstream and Upstream at Bridge

**Table E-5. TVA's Reservoir Ecological Health Ratings for Dissolved Oxygen, Sediment Quality, and Chlorophyll at Forebay and Midreservoir Monitoring Locations on Douglas Reservoir**

|                             | Monitoring Years |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
|-----------------------------|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
|                             | 1991             | 1992 | 1993 | 1994 | 1995 | 1997 | 1999 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 |   |
| <b>Douglas Forebay</b>      |                  |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| Dissolved Oxygen            | P                | P    | P    | P    | P    | P    | P    | P    | P    | P    | P    | P    | P    | P    | P |
| Chlorophyll                 | G                | F    | G    | G    | G    | F    | G    | F    | F    | P    | F    | G    | G    | G    | G |
| Sediment                    | G                | G    | G    | G    | G    | G    | F    | G    | NS   | G    | NS   | G    | NS   | G    | G |
| <b>Douglas Midreservoir</b> |                  |      |      |      |      |      |      |      |      |      |      |      |      |      |   |
| Dissolved Oxygen            | NS               | NS   | P    | P    | P    | F    | P    | P    | P    | P    | P    | P    | P    | P    | P |
| Chlorophyll                 | NS               | NS   | F    | G    | P    | P    | P    | F    | P    | P    | P    | P    | P    | P    | P |
| Sediment                    | NS               | NS   | F    | F    | F    | G    | F    | F    | NS   | F    | NS   | G    | NS   | G    | G |

\* = The rating summaries represent the typical rating for each indicator and may not reflect all the rating categories applied to a given indicator.

**Rating summary codes:** G = Good; F = Fair; P = Poor

NS = Not sampled

\*\* = The difference in reservoir benthic scoring methodology from 1990-1993 prevents a direct comparison to results from 1994-2007, and a difference in RFAI scoring methodology from 1990-1992 prevents a direct comparison to results from 1993-2007.

**Table E-6. Invasive Exotic Pest Plants Rank 1 – Severe Threat\***

| Common Name                        | Scientific Name  |
|------------------------------------|--|
| Air-potato                         | <i>Dioscorea oppositifolia L.</i>                              |
| Amur bush honeysuckle              | <i>Lonicera maackii (Rupr.) Maxim.</i>                         |
| Asian bittersweet                  | <i>Celastrus orbiculata Thunb.</i>                             |
| Autumn olive                       | <i>Elaeagnus umbellata Thunb.</i>                              |
| Bush honeysuckle                   | <i>Lonicera x bella Zabel</i>                                  |
| Camus Nepalgrass, Japanese grass   | <i>Microstegium vimineum (Trin.) A.</i>                        |
| Chinese privet                     | <i>Ligustrum sinense Lour.</i>                                 |
| Common privet                      | <i>Ligustrum vulgare L.</i>                                    |
| Common reed                        | <i>Phragmites australis (Cav.) Trin. ex Steud.</i>             |
| English ivy                        | <i>Hedera helix L.</i>   |
| Eurasian water milfoil             | <i>Myriophyllum spicatum L.</i>                                |
| Garlic-mustard                     | <i>Alliaria petiolata (Bieb.) Cavara &amp; Grande</i>          |
| January jasmine                    | <i>Lonicera fragrantissima Lindl. &amp; Paxton</i>             |
| Japanese honeysuckle               | <i>Lonicera japonica Thunb.</i>                                |
| Japanese knotweed, Japanese bamboo | <i>Polygonum cuspidatum Seib. &amp; Zucc</i>                   |
| Japanese spiraea                   | <i>Spiraea japonica L.f.</i>                                   |
| Johnson grass                      | <i>Sorghum halepense (L.) Pers.</i>                            |
| Kudzu                              | <i>Pueraria montana (Lour.) Merr.</i>                          |
| Mimosa                             | <i>Albizia julibrissin Durz.</i>                               |
| Morrow's bush honeysuckle          | <i>Lonicera morrowii A. Gray</i>                               |
| Multiflora rose                    | <i>Rosa multiflora Thunb.</i>                                  |
| Princess tree                      | <i>Paulownia tomentosa (Thunb.) Sieb. &amp; Zucc. ex Steud</i> |
| Purple loosestrife                 | <i>Lythrum salicaria L. [all varieties and cultivars]</i>      |
| Sericea lespedeza                  | <i>Lespedeza cuneata (Dum.-Cours.) G. Don</i>                  |
| Tartarian honeysuckle, twinsisters | <i>Lonicera tatarica L.</i>                                    |
| Thorny-olive                       | <i>Elaeagnus pungens Thunb.</i>                                |
| Tree of heaven                     | <i>Ailanthus altissima (Mill.) Swingle</i>                     |
| Tropical soda apple                | <i>Solanum viarum Dunal</i>                                    |
| Winter creeper                     | <i>Euonymus fortunei (Turcz.) Hand.-Mazz.</i>                  |

Source: Tennessee Exotic Plant Pest Council (TN-EPPC). 2001. *Invasive Exotic Pest Plants in Tennessee*. Retrieved from <<http://www.tneppc.org/>> (accessed September 23, 2008)

\* Rank 1 — Severe Threat: Exotic plant species that possess characteristics of invasive species and spread easily into native plant communities and displace native vegetation

**Table E-7. Invasive Exotic Pest Plants Rank 2 – Significant Threat\***

| Common Name                                   | Scientific Name                                    |
|---|--|
| Alligatorweed                                 | <i>Alternanthera philoxeroides</i> (Mart.) Griseb. |
| Asian spiderwort                              | <i>Murdannia keisak</i> (Hassk.) Hand.-Mazz.       |
| Bicolor lespedeza, shrubby bushclover         | <i>Lespedeza bicolor</i> Turcz.                    |
| Bull thistle                                  | <i>Cirsium vulgare</i> (Savi) Ten.                 |
| Bunchy knotweed, oriental lady's-thumb        | <i>Polygonum caespitosum</i> Blume                 |
| Burning bush                                  | <i>Euonymus alata</i> (Thunb.) Sieb.               |
| Canada thistle                                | <i>Cirsium arvense</i> L. (Scop.)                  |
| Chinese wisteria                              | <i>Wisteria sinensis</i> (Sims) DC.                |
| Coltsfoot                                     | <i>Tussilago farfara</i> L.                        |
| Common cocklebur, rough cocklebur             | <i>Xanthium strumarium</i> L.                      |
| Common mullein                                | <i>Verbascum thapsus</i> L.                        |
| Common periwinkle                             | <i>Vinca minor</i> L.                              |
| Crown vetch                                   | <i>Coronilla varia</i> L.                          |
| Curly pondweed                                | <i>Potamogeton crispus</i> L.                      |
| Cutleaf teasel                                | <i>Dipsacus laciniatus</i> L.                      |
| Dame's rocket                                 | <i>Hesperis matronalis</i> L.                      |
| Foxtail-millet                                | <i>Setaria italica</i> (L.) P. Beauv.              |
| Fuller's teasel                               | <i>Dipsacus fullonum</i> L.                        |
| Garden vetch                                  | <i>Vicia sativa</i> L.                             |
| Green millet                                  | <i>Setaria viridis</i> (L.) P. Beauv.              |
| Hairy jointgrass                              | <i>Arthraxon hispidus</i> (Thunb.) Makino          |
| Hayek watercress                              | <i>Rorippa nasturtium-aquaticum</i> (L.)           |
| Hydrilla, water thyme                         | <i>Hydrilla verticillata</i> (L.f.) Royle          |
| Japanese barberry                             | <i>Berberis thunbergii</i> DC.                     |
| Japanese bromegrass                           | <i>Bromus japonicus</i> Thunb. ex Murray           |
| Japanese privet                               | <i>Ligustrum japonicum</i> Thunb.                  |
| Leatherleaf clematis                          | <i>Clematis ternifolia</i> DC.                     |
| Meadow brome                                  | <i>Bromus commutatus</i> Schrad.                   |
| Meadow fescue                                 | <i>Festuca pratensis</i> Huds.                     |
| Moneywort, creeping Jenny                     | <i>Lysimachia nummularia</i> L.                    |
| Mugwort, common wormwood                      | <i>Artemisia vulgaris</i> L.                       |
| Musk thistle, nodding thistle                 | <i>Carduus nutans</i> L.                           |
| Nandina, sacred-bamboo                        | <i>Nandina domestica</i> Thunb.                    |
| Nodding foxtail-grass, Japanese bristle-grass | <i>Setaria faberi</i> R.A.W. Herrm.                |
| Oregon grape                                  | <i>Mahonia bealei</i> (Fortune) Carriere           |
| Parrot's feather, water milfoil               | <i>Myriophyllum aquaticum</i> (Vell.) Verdc.       |
| Poison hemlock                                | <i>Conium maculatum</i> L.                         |
| Rye brome                                     | <i>Bromus secalinus</i> L.                         |
| Spotted knapweed                              | <i>Centaurea biebersteinii</i> DC.                 |
| Spreading hedge-parsley                       | <i>Torilis arvensis</i> (Huds.) Link               |
| Tall fescue                                   | <i>Festuca arundinacea</i> Schreb.                 |
| Thatch bromegrass, cheat grass                | <i>Bromus tectorum</i> L.                          |
| White poplar                                  | <i>Populus alba</i> L.                             |
| White sweet clover                            | <i>Melilotus alba</i> Medik.                       |
| Wild carrot, Queen Anne's-lace                | <i>Daucus carota</i> L.                            |
| Wisteria                                      | <i>Wisteria floribunda</i> (Willd.) DC.            |
| Yellow foxtail, smooth millet                 | <i>Setaria pumila</i> (Poir.) Roem. & Schult.      |
| Yellow sweet clover                           | <i>Melilotus officinalis</i> (L.) Lam.             |
| Zebra grass, Chinese silver grass             | <i>Miscanthus sinensis</i> Andersson               |

Source: Tennessee Exotic Plant Pest Council (TN-EPPC). 2001. *Invasive Exotic Pest Plants in Tennessee*.Retrieved from <<http://www.tneppc.org/>> (accessed September 23, 2008)

\*Rank 2 — Significant Threat: Exotic plant species that possess characteristics of invasive species but are not presently considered to spread as easily into native plant communities as those species listed as Rank 1—Severe Threat

**Table E-8. Invasive Exotic Pest Plants Rank 3 –Lesser Threat\***

| <b>Common Name</b>                     | <b>Scientific Name</b>                                  |
|--|---|
| Bachelor's button, cornflower          | <i>Centaurea cyanus L.</i>                              |
| Balloonvine, love-in-a-puff            | <i>Cardiospermum halicacabum L.</i>                     |
| Brazilian elodea, Brazilian water-weed | <i>Egeria densa Planch.</i>                             |
| Bromegrass, rescue grass               | <i>Bromus catharticus Vahl</i>                          |
| California poppy                       | <i>Eschscholzia californica Cham.</i>                   |
| Chicory                                | <i>Cichorium intybus L.</i>                             |
| Chinaberry                             | <i>Melia azedarach L.</i>                               |
| Corn gromwell                          | <i>Lithospermum arvense (L.) I. M. Johnston</i>         |
| Field garlic                           | <i>Allium vineale L.</i>                                |
| Giant reed, elephant grass             | <i>Arundo donax L.</i>                                  |
| Gill-over-the-ground, ground ivy       | <i>Glechoma hederacea L.</i>                            |
| Hairy crabweed                         | <i>Fatoua villosa (Thunb.) Nakai</i>                    |
| Japanese clover                        | <i>Kummerowia striata (Thunb.) Schindl.</i>             |
| Korean clover                          | <i>Kummerowia stipulacea (Maxim.) Makino</i>            |
| Lady's thumb                           | <i>Polygonum persicaria L.</i>                          |
| Ox-eye daisy                           | <i>Chrysanthemum leucanthemum L.</i>                    |
| Pale-yellow iris                       | <i>Iris pseudacorus L.</i>                              |
| Paper mulberry                         | <i>Broussonetia papyrifera (L.) L'Her. ex Vent.</i>     |
| Puncturevine                           | <i>Tribulus terrestris L.</i>                           |
| Russian olive                          | <i>Elaeagnus angustifolia L.</i>                        |
| Sicklepod senna                        | <i>Senna obtusifolia (L.) H. S. Irwin &amp; Barneby</i> |
| Smooth bromegrass                      | <i>Bromus inermis Leyss.</i>                            |
| Spiny cocklebur                        | <i>Xanthium spinosum L.</i>                             |
| Star of Bethlehem                      | <i>Ornithogalum umbellatum L.</i>                       |
| Stinging nettle                        | <i>Urtica dioica L.</i>                                 |
| Wild parsnip                           | <i>Pastinaca sativa L.</i>                              |
| Wineberry                              | <i>Rubus phoenicolasius Maxim.</i>                      |
| Yellow goat's-beard                    | <i>Tragopogon dubius Scop.</i>                          |

Source: Tennessee Exotic Plant Pest Council (TN-EPPC). 2001. *Invasive Exotic Pest Plants in Tennessee*. Retrieved from <<http://www.tneppc.org/>> (accessed September 23, 2008)

\*Rank 3 — Lesser Threat: Exotic plant species that spread in or near disturbed areas and are not presently considered a threat to native plant communities

**Table E-9. Nonnative, Noninvasive Species Suitable for Erosion Control/Stabilization Activities**

| Common Name                      | Scientific Name   |
|----------------------------------|---|
| Annual ryegrass                  | <i>Lolium multiflorum</i>   |
| Browntop millet                  | <i>Panicum ramosum</i>  |
| Japanese millet                  | <i>Echinochloa esculenta</i>  |
| Winter wheat                     | <i>Triticum aestivum</i>  |
| Oats (spring variety)            | <i>Avena sativa</i>   |
| Orchardgrass                     | <i>Dactylis glomerata</i>   |
| Perennial ryegrass               | <i>Lolium perenne</i>   |
| Redtop                           | <i>Agrostis gigantea</i>  |
| Rye                              | <i>Secale cereal</i>  |
| Timothy                          | <i>Phleum pretense</i>  |
| Weeping lovegrass                | <i>Eragrostis curvula</i>   |
| Crimson, red, and ladino clovers | <i>Trifolium incarnatum</i> , <i>Trifolium pretense</i> , <i>Trifolium repens</i> |

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