

Appendix B

Datums and Elevations

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Several historical documents indicate that some of the gages and benchmarks in this region may not be accurate and that they are not all relative to the same datum. Therefore, the data used for this study was all related to the NAVD 88 datum using survey points that were determined using a Global Positioning System (GPS). The conversion from NGVD 29 datum to the adjusted local datum was originally established at the Tiger Cat Dam to be 1268.02; this conversion value was used to compute the adjusted local datum from the NAVD 88 elevation¹⁰. Using this system, the structures are all relative to the same datum and the conversion to the adjusted local datum is constant.

The following table lists the initial local datum elevation for various benchmarks as reported when installed and the adjusted local datum elevation that was assumed for this study:

| Benchmark Location | Name | Local Datum Elevation as reported when Installed | NAVD 88 Elevation | Adjusted Local Datum Elevation |
|-----------------------|-------|--------------------------------------------------|-------------------|--------------------------------|
| Tiger Cat Dam | 854B | 93.81 | 1361.85* | 93.83 |
| | 854C | 99.01 | 1367.03* | 99.01 |
| Lake Placid Dam | 879A | 102.26 | 1370.20 | 102.18 |
| | 879B | 93.52 | 1361.41 | 93.39 |
| Little Round Lake Dam | 1127C | 85.34 | 1353.09 | 85.07 |
| County Highway NN | 1127E | 82.56 | 1350.58 | 82.56 |

*NOTE: These elevations were obtained from WDNR documents.

Under these assumptions, the following table lists selected drainage system elevations in NAVD 88 and adjusted local datum:

| Structure | Description | NAVD 88 Elevation | Adjusted Local Datum Elevation |
|-----------------------|--------------------------------|-------------------|--------------------------------|
| Little Round Lake Dam | Sill in Center of East Opening | 1343.74 | 75.72 |
| | Sill in Center of West Opening | 1343.81 | 75.79 |
| County Highway NN | South Culvert Upstream Invert | 1342.26 | 74.24 |
| | North Culvert Upstream Invert | 1342.21 | 74.19 |

¹⁰ The conversion from NGVD29 to NAVD88 was obtained after the data was adjusted and the conversion established. Near Round Lake the conversion ranges from -0.07 to -0.10 feet (Corpscon software).

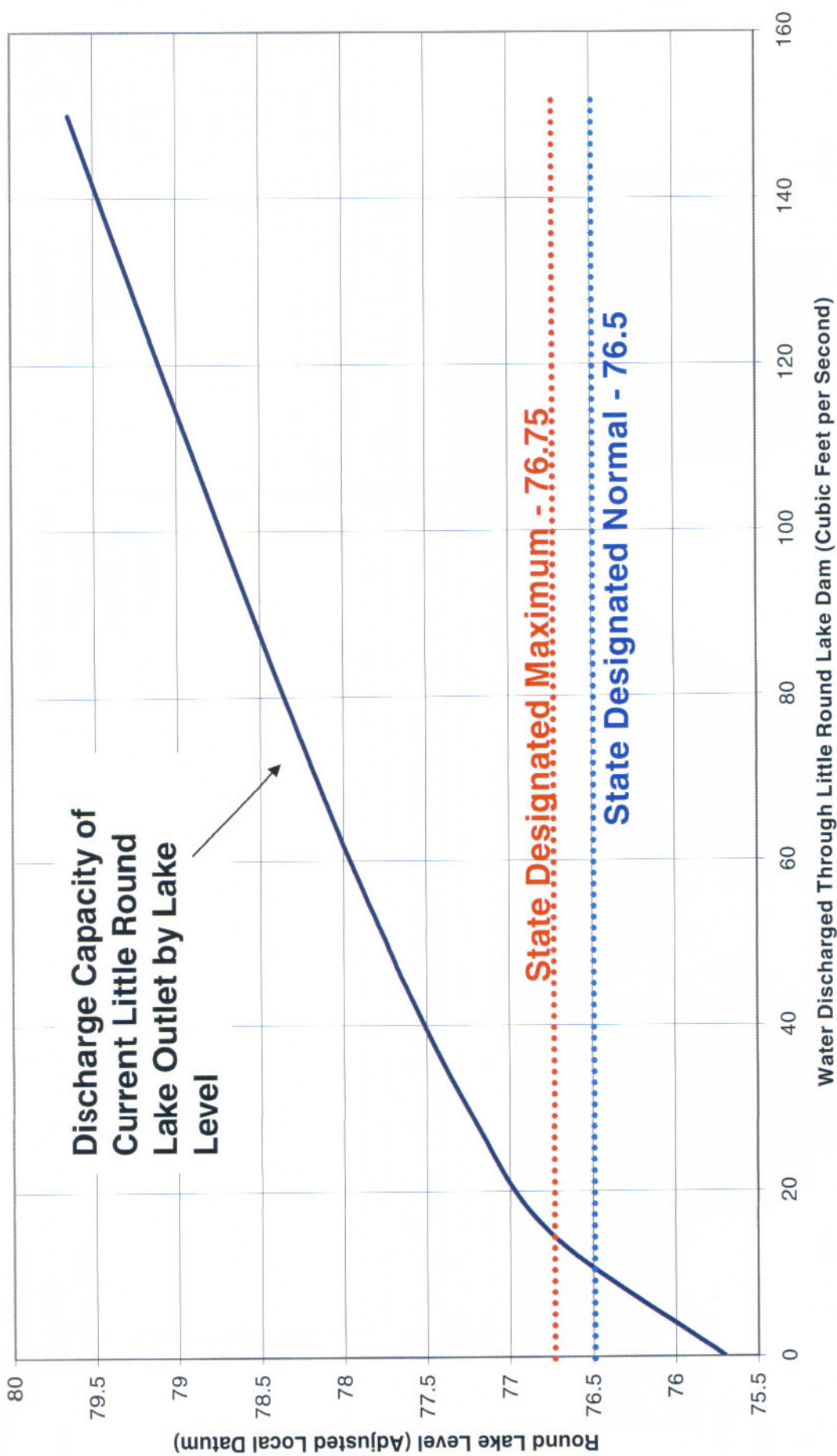


Figure 8
Round Lake Elevation Discharge Curve

NOTE: The datum used in this figure is explained in Section I.A.