3.0 Basin and Watershed Characteristics

3.1 Basin Characteristics

3.1.1 Lake Owasso

Lake Owasso covers an area of approximately 375 acres (MDNR) (Figure 3-1). The lake, which is located in the Cities of Roseville and Shoreview (Ramsey County), receives stormwater runoff from a watershed of approximately 3060 acres (including the lake surface area). The lake is located in the southwest quarter of Section 36, Township 30 N, Range 22 W.

Lake Owasso is located just upstream of Lake Wabasso, a 46.4-acre (MDNR) basin located northeast of Lake Owasso. The discharge from Lake Owasso is located on the northwest side of the lake and flows under North Owasso Boulevard, discharging into a wetland area on the southwest side of Lake Wabasso. The outlet structure of Lake Owasso consists of a concrete box with three 8-foot plate weirs, followed by two reinforced concrete arched pipe (See Appendix B). Discharge from Lake Owasso occurs when water levels are above 886.6 feet MSL; however, there is indication that ice build-up does limit the discharge from Lake Owasso during the winter months (Shoreview Public Works Director, personal communication, 1/18/2008). The location of the discharge from Lake Owasso is shown Figure 3-1.

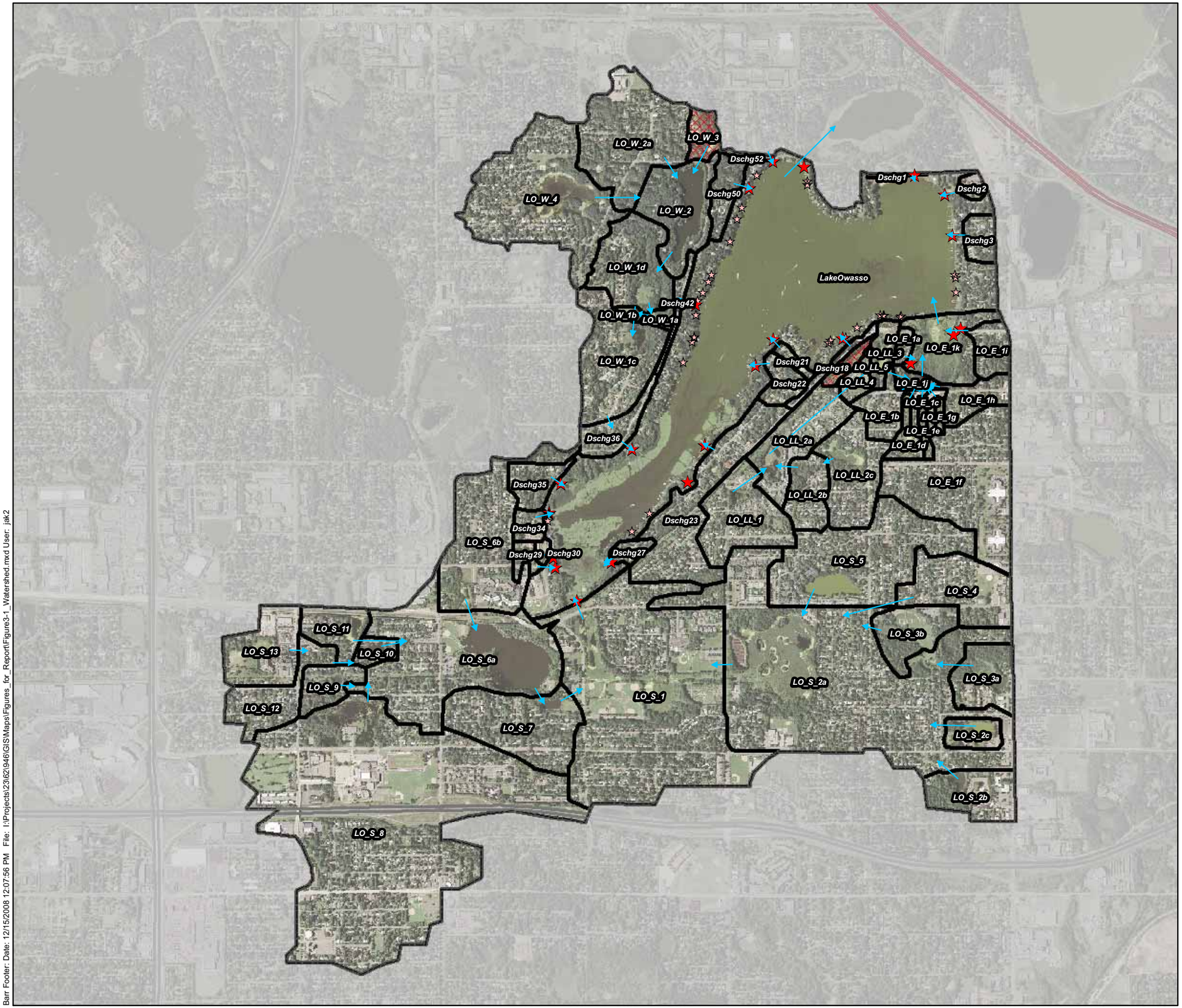
Lake Owasso is a deep lake with a maximum depth of 37.0 feet and a mean depth of 10.9 feet (Figure 3-2). The littoral zone (shallow area– generally less than 15-feet deep -- where light can penetrate and promote the growth of macrophytes) is estimated to be about 293 acres (or about 78 percent of the lake). Although much of the lake ranges from 5 to 10 feet in depth, there are three deep areas within the lake. There is a small deep pool, with a maximum depth of about 20 feet, located in the southwest corner of the lake. There is another larger pool about 27 feet deep in northeast corner of the lake. Finally, the largest deep pool is located in the northwest part of the lake and has a maximum depth of about 37 feet. Additional information on the morphometry of Lake Owasso is presented in Table 3-1.

Table 3-1 Lake Owasso Morphometry

Lake Characteristic	Lake Owasso
Lake MDNR ID	62-0056
Normal Water Level (NWL)	886.6
Surface Area (acres)	375
Mean Depth (feet)	10.9
Maximum Depth (feet)	37
Volume (below the NWL) (acre-feet)	4098.7
Thermal Stratification Pattern	Dimicitic
Watershed Area (acres)*	3060

*Includes surface area of lake

Lake Owasso was formed in glacial till when the most recent glaciers receded approximately 10,000 years ago. The area surrounding the lake is composed of different types of glacial deposits. Lake Owasso is considered a groundwater lake, meaning that the lake level represents the approximate groundwater table and it undergoes periods of recharge and seepage. The potentiometric gradient of the underlying aquifers is towards the southwest (Barr, 1991).



Barr Footer: Date: 12/15/2008 12:07:56 PM File: I:\Projects\23\62\946\GIS\Maps\Figures_for_Report\Figure3-1_Watershed.mxd User: jak2

Watershed Flow Direction

Watersheds

Subwatershed

Land Locked Subwatershed

Direct Discharges

City or County

Residental

Feet

1,750 0 1,750

N

Figure 3-1

LAKE OWASSO WATERSHED

Lake Owasso UAA
Grass Lake Watershed Management Organization

Bathymetry

Elevation (Depth)

- 851.6 MSL (35 feet)
- 856.6 MSL (30 feet)
- 861.6 MSL (25 feet)
- 866.6 MSL (20 feet)
- 871.6 MSL (15 feet)
- 876.6 MSL (10 feet)
- 881.6 MSL (5 feet)
- 886.6 MSL (0 feet)

Feet

750 0 750

N

Figure 3-2

LAKE OWASSO BATHYMETRY

Lake Owasso UAA
Grass Lake Watershed Management Organization

3.2 Watershed Characteristics

3.2.1 Land Use

There have been several studies of Lake Owasso completed in the past, and the watershed has been previously subdivided. For this study, the subwatersheds, as delineated in the *GLWMO Watershed Management Plan* (Barr, 2001), were used as a starting point. These subwatersheds were further refined, including delineation of the drainage areas contributing to each of the major discharge points into Lake Owasso, as identified by the discharge location surveys completed by the Cities of Shoreview and Roseville and digital storm sewer information provided by each of the cities(Figure 3-1).

Existing (2006) and full-development (2020) land use patterns within the watersheds were identified for the purpose of predicting changes in runoff volumes and annual phosphorus loads before and after development (Figure 3-3). Existing land use conditions were determined using GIS land use information from the *GLWMO Watershed Management Plan* (Barr, 2001) and verified (and adjusted as necessary) using 2006 aerial photography. Full-development land use information from the *GLWMO Watershed Management Plan* was also used for the year 2020. The Lake Owasso watershed is fully-developed and land use is not expected to change significantly. The existing and future land use conditions for the Lake Owasso subwatersheds are summarized in Tables 3-2 and 3-3, respectively.

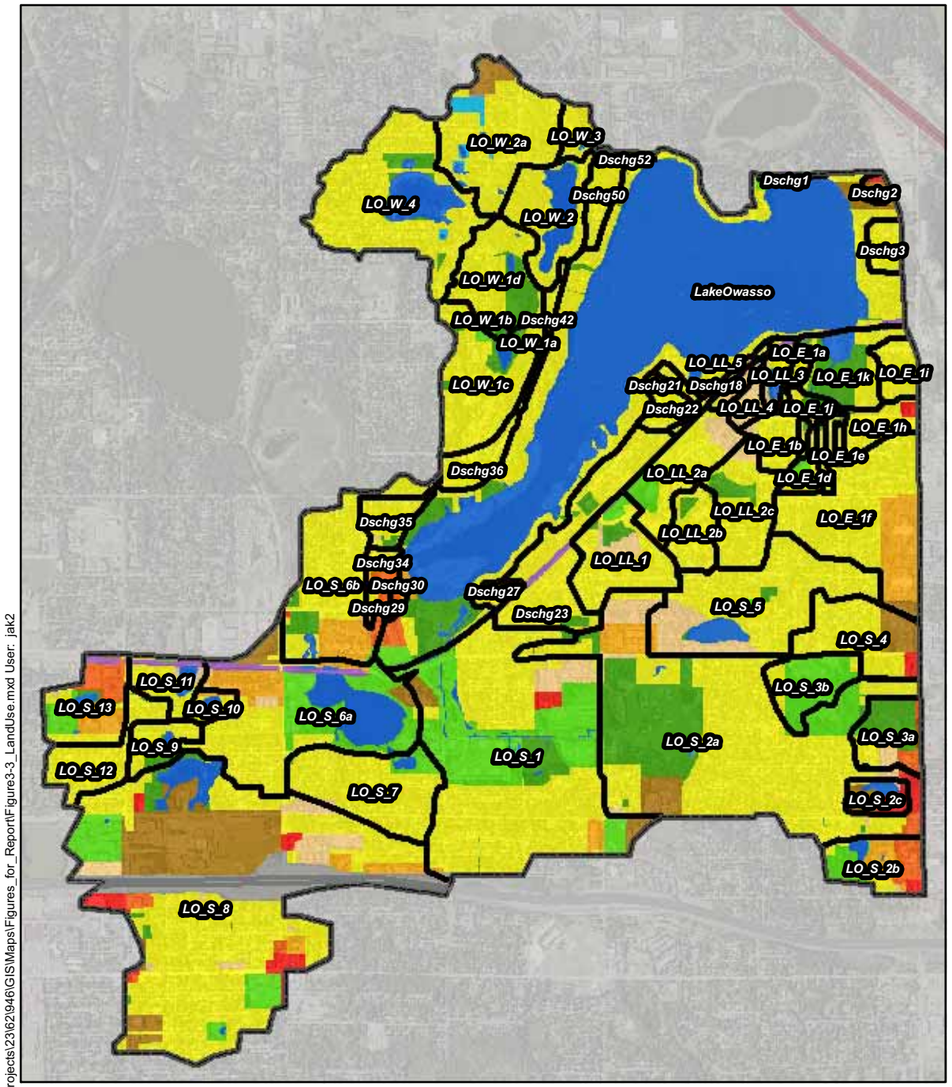
The Lake Owasso watershed covers approximately 3060 acres, including the surface area of the lake. The land use is predominantly residential. There is also a significant amount of water and wetland as well as developed park and open space. There is some commercial and office/industrial land use in the eastern portion of the watershed along Rice Street, as well as a small area in the far western portion of the watershed. Highway 36 runs east to west in the southern part of the watershed. Figure 3-4 summarizes the land use composition of the Lake Owasso watershed.

3.2.2 Soils

The infiltration capacity of soils affects the amount of direct runoff resulting from rainfall. Soils with a higher infiltration rate have a lower runoff potential. Conversely, soils with low infiltration rates produce high runoff volumes and high peak runoff rates. According to the Ramsey County Digital Soils map based on the Natural Resource Conservation Service (NRCS) Soil Survey, the underlying soils in the Lake Owasso watersheds are predominantly classified as hydrologic soil group (HSG) B, with moderate infiltration rates. The soils along the eastern side of the lake are classified as HSG A, characterized by high infiltration rates. Soils around wetland areas within the

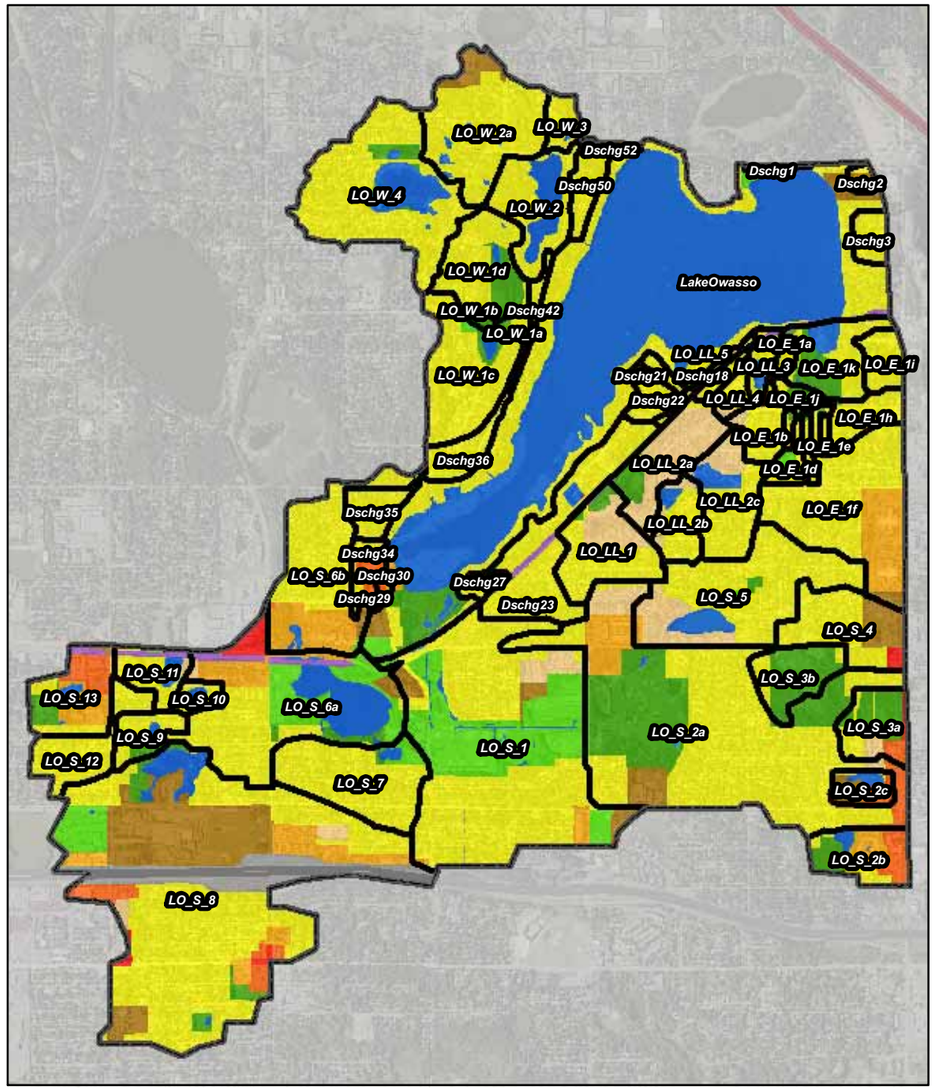
watershed typically have low to very low infiltration capacity. Figure 3-5 depicts the hydrologic soils group classification for soils within the Lake Owasso watersheds.

Existing (2006) Land Use



Source: 2001 GLWMO Watershed Management Plan, Modified to 2006 aerial photography

Full Development (Future) Land Use



Source: 2001 GLWMO Watershed Management Plan

Subwatershed

Land Use

- Commercial
- Developed Park
- Highway
- High-Density Residential
- Institutional
- Office/Industrial
- Low-Density Residential
- Medium-Density Residential
- Natural/Open Space
- Water
- Wetland
- Railroad

Feet
2,500 0 2,500

N

Figure 3-3

LAKE OWASSO WATERSHED
EXISTING AND FULL DEVELOPMENT
LAND USE

Lake Owasso UAA
Grass Lake Watershed Management Organization

Barr Footer: Date: 11/8/2007 8:35:14 AM File: I:\Projects\23\62\946\GIS\Maps\Figures_for_Report\Figure3-3_LandUse.mxd User: jak2

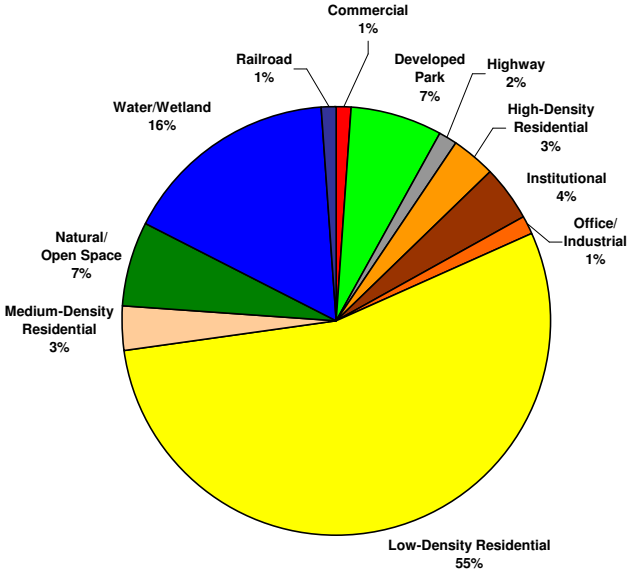
Table 3-2 Lake Owasso Watershed—Existing (2006) Land Use

Subwatershed	Commercial	Developed Park	Highway	High-Density Residential	Institutional	Office/ Industrial	Low-Density Residential	Medium-Density Residential	Natural/Open Space	Water/ Wetland	Railroad	TOTAL Acres
Dschg1	0.0	0.8	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	1.1
Dschg18	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	2.4	6.4
Dschg2	0.8	0.0	0.0	0.0	3.2	0.0	0.2	0.0	0.0	0.0	0.2	4.4
Dschg21	0.0	0.0	0.1	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	3.9
Dschg22	0.0	0.0	0.0	0.0	0.0	0.0	12.1	0.0	0.0	0.0	0.0	12.1
Dschg23	0.0	0.0	0.0	0.4	0.0	0.0	57.0	0.1	4.1	0.0	5.3	66.9
Dschg27	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.1	0.0	0.8	5.9
Dschg29	0.0	0.0	0.0	0.2	0.0	3.5	1.5	0.2	0.0	0.0	0.0	5.5
Dschg3	0.0	0.0	0.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0	0.0	10.8
Dschg30	0.0	0.0	0.0	0.6	0.0	1.7	0.0	0.0	0.2	0.0	0.0	2.6
Dschg34	0.0	0.0	0.0	0.0	0.0	2.6	4.9	0.0	0.0	0.0	0.0	7.5
Dschg35	0.0	0.0	0.0	0.0	0.0	0.0	13.4	0.4	1.6	0.0	0.0	15.4
Dschg36	0.0	0.0	0.0	0.0	0.0	0.0	16.8	0.0	0.1	0.0	0.0	16.8
Dschg42	0.0	0.0	0.0	0.0	0.0	0.0	6.6	0.0	0.2	0.0	0.0	6.7
Dschg50	0.0	0.0	0.0	0.0	0.0	0.0	14.0	0.1	0.5	0.0	0.0	14.6
Dschg52	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	2.5
LakeOwasso	0.1	5.3	0.8	2.1	4.8	4.3	113.9	0.0	26.1	383.8	4.7	545.9
LO_E_1a	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.5	0.0	0.0	4.3
LO_E_1b	0.0	0.0	0.0	0.0	0.0	0.0	15.2	1.9	0.0	0.0	0.0	17.1
LO_E_1c	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.5	0.0	0.0	2.4
LO_E_1d	0.0	3.2	0.0	0.0	0.0	0.0	6.2	0.0	0.4	0.0	0.0	9.8
LO_E_1e	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.5	0.0	0.0	4.4
LO_E_1f	0.0	0.0	0.0	25.5	2.6	0.0	70.1	0.0	0.8	0.0	0.0	99.1
LO_E_1g	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.3	0.0	0.0	2.5
LO_E_1h	1.7	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.8	0.1	0.0	17.5
LO_E_1i	0.0	0.0	0.0	0.0	0.0	0.0	14.6	0.0	0.0	0.0	0.0	14.6
LO_E_1j	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	3.6	0.5	0.0	5.9
LO_E_1k	0.0	0.0	0.0	0.0	0.0	0.0	12.9	0.0	15.4	5.0	2.2	35.5
LO_LL_1	0.0	2.5	0.0	0.0	0.0	0.0	34.3	5.4	3.4	0.0	1.4	47.0
LO_LL_2a	0.0	6.0	0.0	0.0	0.0	0.0	27.0	6.4	0.1	0.0	2.1	41.5
LO_LL_2b	0.0	0.0	0.0	0.0	0.0	0.0	20.6	0.0	1.6	0.0	0.0	22.2
LO_LL_2c	0.0	0.0	0.0	0.0	0.0	0.0	34.1	2.9	5.7	0.0	0.0	42.7
LO_LL_3	0.0	0.0	0.0	0.0	0.0	0.0	4.0	3.1	0.7	1.7	1.1	10.5
LO_LL_4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.2	0.0	0.0	0.0	8.2
LO_LL_5	0.0	0.0	0.0	0.0	0.0	0.0	0.5	3.5	0.0	0.2	1.5	5.8
LO_S_1	2.6	74.6	0.6	3.9	6.7	0.0	141.0	10.0	13.0	3.9	1.8	258.3
LO_S_10	0.0	0.0	0.0	1.0	0.0	0.0	5.1	0.2	0.0	1.8	0.0	8.1
LO_S_11	0.0	1.0	0.0	0.0	0.1	0.0	12.6	1.7	0.0	2.9	2.7	21.0
LO_S_12	0.0	0.0	0.0	0.1	0.0	0.0	31.5	0.1	0.3	0.0	0.0	32.0
LO_S_13	0.0	6.5	0.0	8.4	0.5	9.4	9.3	0.3	1.0	1.5	1.6	38.6
LO_S_2a	4.2	15.2	0.0	9.8	10.6	3.5	170.7	13.6	63.7	0.7	0.0	291.9
LO_S_2b	1.7	7.6	0.1	7.2	0.0	7.6	4.3	0.3	0.0	2.0	0.0	30.8
LO_S_2c	3.7	0.0	0.0	0.0	4.2	0.0	1.8	0.7	0.0	2.5	0.0	12.9
LO_S_3a	0.9	0.6	0.1	0.0	0.0	3.9	5.4	3.8	14.0	0.0	0.0	28.6
LO_S_3b	0.0	21.7	0.0	0.0	0.0	0.0	7.4	0.0	0.0	0.0	0.0	29.1
LO_S_4	2.6	0.0	0.0	0.0	9.6	0.0	34.7	0.0	0.0	0.0	0.0	46.8
LO_S_5	0.0	1.3	0.0	1.5	0.0	0.0	73.5	16.4	1.6	7.3	0.0	101.5
LO_S_6a	0.0	31.6	0.0	14.4	8.9	0.0	45.7	2.4	0.1	26.3	5.7	135.2
LO_S_6b	0.3	0.5	0.0	12.9	0.0	2.3	57.4	0.4	5.9	1.6	0.0	81.4
LO_S_7	0.0	5.4	0.0	0.0	0.0	0.0	55.6	0.7	0.2	1.4	0.0	63.2
LO_S_8	12.6	25.1	48.2	8.3	71.9	3.8	176.2	19.3	7.0	11.2	0.0	383.8
LO_S_9	0.0	0.0	0.0	0.0	0.0	0.0	13.7	0.0	2.5	1.1	0.0	17.3
LO_W_1a	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	1.3	0.0	0.0	4.0
LO_W_1b	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	2.3
LO_W_1c	0.0	1.5	0.0	0.0	0.0	0.0	51.2	0.0	5.2	1.9	0.0	59.8
LO_W_1d	0.0	0.0	0.0	0.0	0.0	0.0	34.2	0.0	10.7	1.2	0.0	46.2
LO_W_2	0.0	0.4	0.0	0.0	0.0	0.0	31.9	0.0	0.0	14.1	0.0	46.4
LO_W_2a	0.0	0.0	0.2	0.0	7.1	0.0	63.4	0.0	0.0	7.1	0.0	77.9
LO_W_3	0.0	0.0	0.0	0.0	0.0	0.0	10.4	0.0	0.0	0.4	0.0	10.8
LO_W_4	0.0	0.0	0.0	0.0	0.0	0.0	87.6	0.0	5.9	19.0	0.0	112.5
TOTAL Acres	31.2	211.8	50.0	96.4	130.3	42.6	1662.4	102.1	200.9	499.1	33.4	3060
%	1.0	6.9	1.6	3.2	4.3	1.4	54.3	3.3	6.6	16.3	1.1	100.0

Table 3-3 Lake Owasso Watershed—Future Land Use

Subwatershed	Commercial	Developed Park	Highway	High-Density Residential	Institutional	Office/ Industrial	Low-Density Residential	Medium-Density Residential	Natural/Open Space	Water/ Wetland	Railroad	TOTAL Acres
Dschg1	0.0	0.7	0.0	0.0	0.0	0.0	0.3	0.0	0.1	0.0	0.0	1.1
Dschg18	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	2.4	6.4
Dschg2	0.0	0.0	0.0	0.0	3.2	0.0	1.2	0.0	0.0	0.0	0.0	4.4
Dschg21	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.0	0.0	0.0	3.9
Dschg22	0.0	0.0	0.0	0.0	0.0	0.0	12.1	0.0	0.0	0.0	0.0	12.1
Dschg23	0.1	0.0	0.0	0.0	0.0	0.0	59.5	0.1	0.0	1.9	5.3	66.9
Dschg27	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	0.1	0.0	0.8	5.9
Dschg29	0.0	0.0	0.0	0.2	1.1	2.2	1.9	0.0	0.0	0.0	0.0	5.5
Dschg3	0.0	0.0	0.0	0.0	0.0	0.0	10.8	0.0	0.0	0.0	0.0	10.8
Dschg30	0.0	0.0	0.0	0.6	0.0	1.7	0.0	0.0	0.2	0.0	0.0	2.6
Dschg34	0.0	0.0	0.0	0.0	0.0	2.6	4.9	0.0	0.0	0.0	0.0	7.5
Dschg35	0.0	0.0	0.0	0.0	0.0	0.0	15.4	0.0	0.0	0.0	0.0	15.4
Dschg36	0.0	0.0	0.0	0.0	0.0	0.0	16.8	0.0	0.0	0.0	0.0	16.8
Dschg42	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	0.0	0.0	6.7
Dschg50	0.0	0.0	0.0	0.0	0.0	0.0	14.6	0.0	0.0	0.0	0.0	14.6
Dschg52	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	2.5
LakeOwasso	0.0	5.3	0.0	2.1	9.1	0.0	128.0	0.0	15.3	381.5	4.5	545.8
LO_E_1a	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.5	0.0	0.0	4.3
LO_E_1b	0.0	0.0	0.0	0.0	0.0	0.0	14.7	2.4	0.0	0.0	0.0	17.1
LO_E_1c	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0	0.5	0.0	0.0	2.4
LO_E_1d	0.0	3.2	0.0	0.0	0.0	0.0	6.2	0.0	0.4	0.0	0.0	9.8
LO_E_1e	0.0	0.0	0.0	0.0	0.0	0.0	3.9	0.0	0.5	0.0	0.0	4.4
LO_E_1f	0.0	0.0	0.0	26.8	2.7	0.0	69.0	0.0	0.6	0.0	0.0	99.1
LO_E_1g	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.3	0.0	0.0	2.5
LO_E_1h	0.0	0.0	0.0	0.0	0.0	0.0	16.8	0.0	0.6	0.1	0.0	17.5
LO_E_1i	0.0	0.0	0.0	0.0	0.0	0.0	14.6	0.0	0.0	0.0	0.0	14.6
LO_E_1j	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	3.6	0.5	0.0	5.9
LO_E_1k	0.0	0.0	0.0	0.0	0.0	0.0	16.1	0.0	12.2	5.0	2.2	35.5
LO_LL_1	0.0	0.0	0.0	0.0	0.0	0.0	28.1	14.6	2.9	0.0	1.4	47.0
LO_LL_2a	0.0	0.0	0.0	0.0	0.0	0.0	1.4	31.9	6.0	0.0	2.1	41.5
LO_LL_2b	0.0	0.0	0.0	0.0	0.0	0.0	15.2	4.7	0.1	2.3	0.0	22.2
LO_LL_2c	0.0	0.0	0.0	0.0	0.0	0.0	27.9	9.5	0.0	5.3	0.0	42.7
LO_LL_3	0.0	0.0	0.0	0.0	0.0	0.0	7.5	0.0	0.2	1.7	1.1	10.5
LO_LL_4	0.0	0.0	0.0	0.0	0.0	0.0	7.0	1.2	0.0	0.0	0.0	8.2
LO_LL_5	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.2	1.5	5.8
LO_S_1	0.0	79.9	0.4	4.6	9.9	0.0	148.5	8.8	0.2	3.9	1.8	258.0
LO_S_10	0.0	0.0	0.0	0.6	0.0	0.0	5.2	0.5	0.0	1.8	0.0	8.1
LO_S_11	0.0	0.9	0.0	0.0	0.0	0.0	13.3	1.2	0.0	2.9	2.7	21.0
LO_S_12	0.0	0.0	0.0	0.1	0.0	0.0	31.9	0.0	0.0	0.0	0.0	32.0
LO_S_13	0.0	0.0	0.0	10.6	0.7	9.4	9.2	0.0	5.7	1.5	1.6	38.6
LO_S_2a	0.0	1.9	0.0	17.0	10.7	7.5	169.1	12.2	72.9	0.7	0.0	291.9
LO_S_2b	0.0	0.0	0.0	7.5	0.0	8.6	5.7	0.0	7.0	2.0	0.0	30.8
LO_S_2c	0.0	0.0	0.0	0.0	4.2	4.0	2.2	0.0	0.0	2.5	0.0	12.9
LO_S_3a	1.4	0.0	0.0	0.0	0.0	3.3	6.8	3.8	13.3	0.0	0.0	28.6
LO_S_3b	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	21.7	0.0	0.0	29.1
LO_S_4	2.6	0.0	0.0	0.0	11.8	0.0	32.5	0.0	0.0	0.0	0.0	46.8
LO_S_5	0.0	1.3	0.0	2.1	0.0	0.0	71.9	17.3	1.3	7.5	0.0	101.5
LO_S_6a	7.1	27.2	0.0	14.2	3.2	0.0	46.0	1.3	4.2	26.3	5.7	135.2
LO_S_6b	0.3	0.5	0.0	22.1	2.1	0.3	54.2	0.0	0.3	1.6	0.0	81.4
LO_S_7	0.0	4.4	0.0	0.0	0.0	0.0	56.4	0.0	1.0	1.4	0.0	63.2
LO_S_8	4.1	15.0	46.3	25.5	75.0	12.4	179.0	5.3	9.9	11.2	0.0	383.7
LO_S_9	0.0	0.0	0.0	0.0	0.0	0.0	14.1	0.0	2.1	1.1	0.0	17.3
LO_W_1a	0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	1.3	0.0	0.0	4.0
LO_W_1b	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	2.3
LO_W_1c	0.0	1.4	0.0	0.0	0.0	0.0	53.7	0.0	2.8	1.9	0.0	59.8
LO_W_1d	0.0	0.0	0.0	0.0	0.0	0.0	34.3	0.0	10.6	1.2	0.0	46.2
LO_W_2	0.0	0.0	0.0	0.0	0.0	0.0	32.3	0.0	0.0	14.1	0.0	46.4
LO_W_2a	0.0	0.0	0.0	0.0	9.0	0.0	67.0	0.0	0.0	1.9	0.0	77.9
LO_W_3	0.0	0.0	0.0	0.0	0.0	0.0	10.4	0.0	0.0	0.4	0.0	10.8
LO_W_4	0.0	0.0	0.0	0.0	0.0	0.0	88.8	0.0	5.1	18.6	0.0	112.5
TOTAL Acres	15.5	142.4	46.8	134.1	142.7	52.0	1672.5	114.5	205.2	501.0	33.1	3060
%	0.5	4.7	1.5	4.4	4.7	1.7	54.7	3.7	6.7	16.4	1.1	100.0

Lake Owasso Watershed
Existing (2006) Land Use
Total Watershed Area = 3060 Acres



Lake Owasso Watershed
Full Development Land Use
Total Watershed Area = 3060 Acres

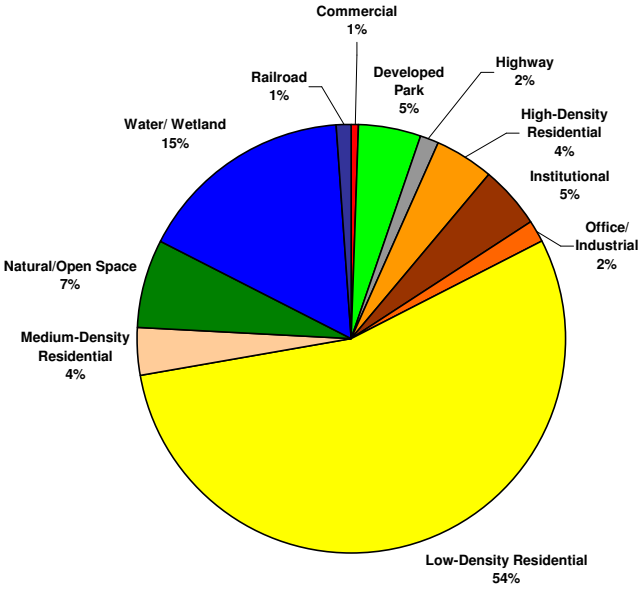
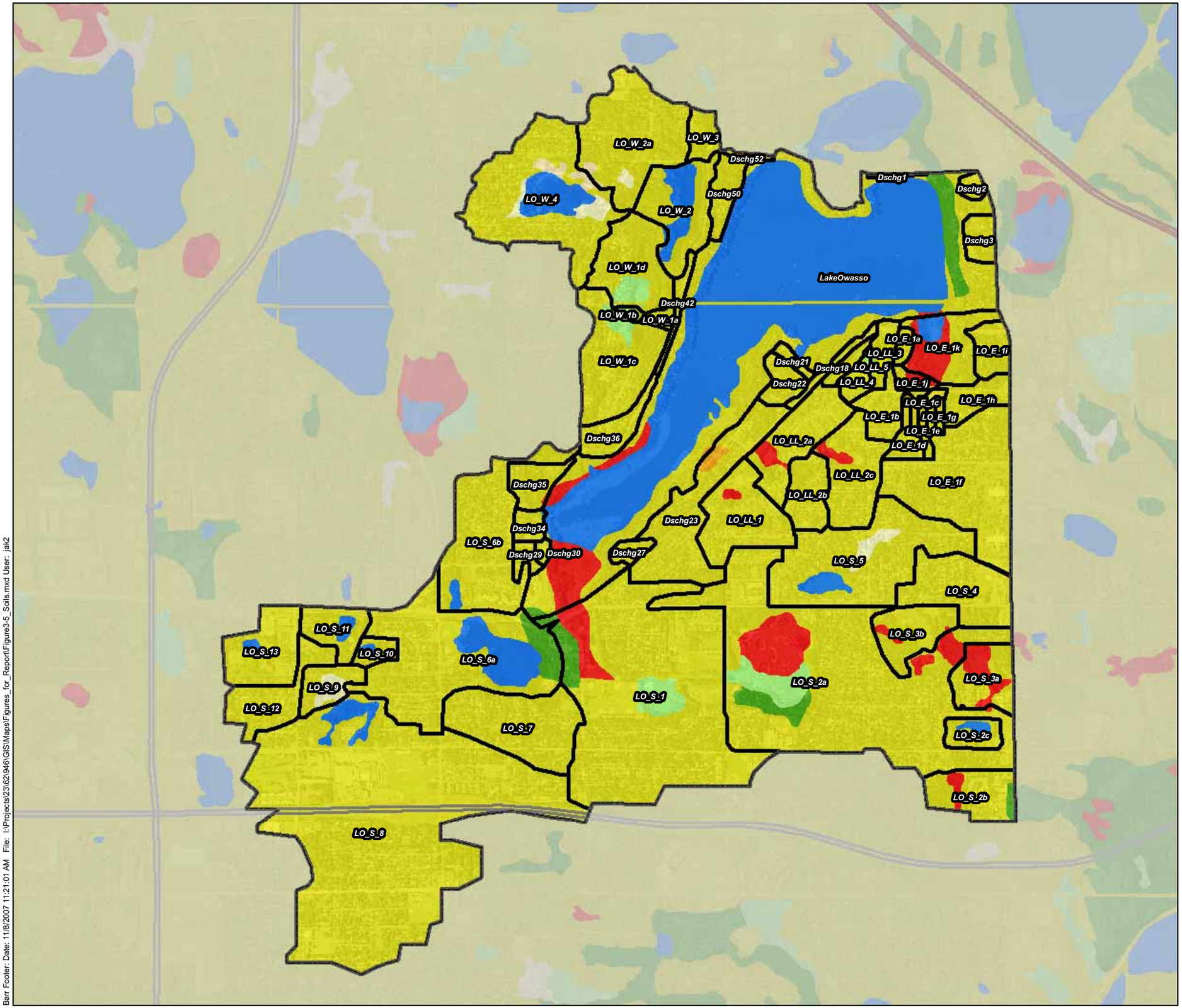


Figure 3-4
Lake Owasso Watershed
Existing (2006) and Full Development
Land Use Summary



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Subwatershed

Hydrologic Soil Group (HSG)

- A - High Infiltration Potential
- A/D - Very Low Infiltration Potential
- B - Moderate Infilatration Potential
- B/D - Very Low Infiltration Potential
- C - Low Infiltration Potential
- C/D - Very Low Infiltration Potential
- D - Very Low Infiltration Potential
- Water

Feet

1,750 0 1,750

N

Figure 3-5

LAKE OWASSO WATERSHED
SOIL INFILTRATION CAPACITY

Lake Owasso UAA
Grass Lake Watershed Management Organization