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August 3, 2016

To Whom It May Concern:

Central contracted with a firm to conduct a comprehensive study of lake rental rates. Key findings of the consultant include: (1) Central's current rate structure, based on five percent of the market value of a lot is typical for governmental agencies and utilities throughout the country, (2) that the current rental rates at Johnson Lake are well below what the market rate would be, and (3) the current fair market value of Johnson Lake lots are such that rental rates would be expected to increase substantially under the terms of the current leases.

Notwithstanding the above, the report was developed for informational purposes only, to provide information on how rental rates for lakefront properties are typically set by governmental agencies and utilities, and to provide current market information. The report does not determine what the rental rates at Johnson Lake will be. The Board is still considering, and has made no decisions, about any possible changes to the current leases or current rate-setting process.

Sincerely,

A handwritten signature in black ink that reads "Don Kraus". The signature is written in a cursive, flowing style.

Don Kraus, P.E.
General Manager

Johnson Lake

Lake Lot Lease Rate Valuation Analysis

**August
2016**

**Report Prepared for: The Central Nebraska
Public Power and Irrigation District**

**Bioeconomics, Inc.
Missoula, Montana
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EXECUTIVE SUMMARY

Overview and Objectives

The Central Nebraska Public Power and Irrigation District (CNPPID) retained Bioeconomics, Inc. of Missoula, MT in order to prepare an analysis to identify fair market lease rates for CNPPID-owned recreational lots surrounding Johnson Lake in Nebraska. This report presents the data examined, methods used, analytical findings, and recommendations of Bioeconomics, Inc. as to the fair market lease rates for the Johnson Lake lots.

Current annual lease fees for lake lots at Johnson Lake are based on 5% of the appraised value of the lots, with reappraisals every 10 years. In the case of a current Tier 1 lot lease, the lot value accepted and approved by CNPPID is \$45,000 and the associated annual lease fee is \$2,250. The current fee is based on an appraisal done in 2007, and the most recent appraisal (2015) has estimated a much higher average Tier 1 lot value. The next appraisal date for Johnson Lake lease lots is March 1, 2017, with new fees being phased in over the three-year period beginning with 2018 assessments.

The following analysis evaluates Johnson Lake lease rates in three ways: 1) by examining lease rates currently found at comparable sites; 2) by using data on Johnson Lake lease transfers to estimate the average fair market value Johnson Lake Tier 1 lots; and 3) by estimating the implied fair market annual lease rate and associated fee for those leases by using the same data on Johnson Lake lease transfers.

Evidence from Comparable Lease Settings and Existing Studies

Lease contract terms at Johnson Lake specify an annual lease payment of 5% of the appraised value of the lake lot. Before examining data specific to the Johnson Lake leases, we reviewed a wide selection of lease examples and studies of lease terms from around the U.S. to determine how the lease terms at Johnson Lake compared to “typical” lease terms found in other settings.

A combination of factors has led to a great deal of interest and research in recent years into determining the appropriate fair market lease value of recreational/residential lease lots. While relatively few in relation to the whole real estate market, these lots are found in a number of settings involving federal, state, and (as in the case of CNPPID) utility owned-lands. Many lots have been developed on lakeshores for the obvious reason that these sites have substantial scenic and recreational value.

Since the mid-1990s, a number of studies have examined the issue of defining the appropriate fair market value of these leases. Perhaps the most exhaustive of these was completed by Knipe & Knipe (1998) for the state of Idaho. In their report, the authors examined examples from Federal (USFS), State, corporate, and private leases. Knipe & Knipe concluded based on the preponderance of the evidence that an Idaho trust land cabin lot should have a market lease rate of about 6% of appraised

lot value. This conclusion and rate was in the range of rates suggested by a myriad of other studies as well as actual market examples (e.g. Bioeconomics, Inc. 2015). A separate review sponsored by Idaho (Cook and O’Laughlin 2008) also found a range of comparable rates from 3.5% to 9%, with all but one estimate being 5% or greater.

Table 1 shows a number of examples of similar lease rates presented in the literature as well as currently set by federal and state statute for recreational lot leases, and by utilities. The examples in the table vary on the high estimate side, ranging up to 13%. However, aside from the Minnesota state land lakefront lot example, minimum effective rates are generally in the 3.5% to 6% range.

TABLE 1. TYPICAL RECREATIONAL LOT LEASE RATES FROM THE LITERATURE, STATUTE, AND MARKET EXAMPLE

Setting / Study	Effective Rate (annual)	Basis
USFS	Originally 5%. After 2014, lease changed to tier system, indexed to inflation.	Pre-2014, explicitly appraised fair market (fee-simple) value ^b
California	9%	Appraised fair market value
Idaho Trust Lands	4% of past 10 years average value—program in place to sell cottage lots.	Appraised fair market value
Minnesota Trust Lands	9% in general but 2% for lakeshore lots	Appraised fair market value
Minnesota Power Leases	2.5% + taxes (1.05% average) = 3.55%	Appraised fair market value
Idaho State Parks	3.5%	Appraised fair market value
Maloney Lake (NE)	5% (Phase-in over 15 year period) ^d	Appraised fair market value
Harlan County Lake (NE)	Flat Fee	\$2,000-\$2,100 annually for trailer space
Shadehill Reservoir (SD) market rent survey ^a	Flat Fee based on comparable sites	\$2,100 annually for cabin site or trailer space (6-7 month occupancy)
Ohio Trust Land	Minimum 10%	Appraised fair market value
Alabama Power (Lake Martin)	4%	Appraised fair market value –annual CPI adjustment
Bois Forte Band of Chippewa (MN)	2% for Tribal members; 7% non-members	Appraised fair market value
Heart Butte Reservoir (SD) market rent survey ^a	Flat Fee based on comparable sites	\$2,350 annually for cabin site (6-7 month occupancy)
Muskingum Watershed Conservation Dist. (OH)	5%	Appraised fair market value
Glendo Reservoir (WY) ^a	5%	Fair market value indexed for inflation (6-7 month occupancy)
Alcoa Reservoir (WY) ^a	5%	Fair market value indexed for inflation (6-7 month occupancy)
Guernsey Reservoir (WY) ^a	5%	Fair market value indexed for inflation (6-7 month occupancy)
Northwestern Lake (OR) ^c	6%	Appraised fair market. 5% annual increase. (\$7,300/yr for lakefront in 2010)

^a No Year-round occupancy. Use limited generally to 6-7 months. ^b All land/lot appraisal examples utilized fee-simple appraisals. ^c In 2010 Northwestern Reservoir was drained after dam removal. Leases were rewritten to reflect change in waterfront. ^d Lease rates at Mahoney are currently being raised (for a Tier 1A lot) from \$500 to \$3,200 over a 15-year period.

While lease rates and terms vary considerably from site to site, based on a review of a wide selection of lease settings and broad-ranging reviews of comparable lease terms, the current contract rates at Johnson Lake of 5% of fair market (fee simple) lot value are well within the typical range of terms seen in other areas. Further, the 5% of market rate terms are consistent with or below the large majority of settings where lease fees are based on a percentage of fair market lot value.

Evidence from Johnson Lake Lease Transfers

A substantial number of Johnson Lake lots have been sold (their leases transferred to new owners) in recent years. We looked at this data in two complementary ways: 1) using district lot appraisals, we estimated the full fair-market value of Johnson Lake lots under an assumption of a constant 5% annual lease fee, and 2) using the CNPPID-accepted lot values, we estimated the implied value placed on the annual lease rate (percentage of lot value assessed per year).

Fair Market Lot Value Implied from CNPPID Appraisals

In order to calculate lease fees and comply with the lease contract, the District has commissioned periodic lot appraisals. The original appraisal commissioned by CNPPID (Harris, 1994) clearly outlined the intent of the District to determine the fee simple value of the lease lots (land without improvements). While the comparable lot sales examined by Harris included both sales of leased lots and private (deeded) lots, at the time of the 1994 appraisal there were no lease fees charged at Johnson Lake, and thus no substantive difference between leasehold value and fee simple value. Due to the difficulties associated with identification of sales of recently sold lake lots comparable to those on Johnson Lake, subsequent appraisers have since at least 2000 relied exclusively on the sales of vacant or teardown lease transfers as their comparable sales. The appraisal reports define the property rights being appraised as either “fee simple” or “leased fee.” These terms are not entirely correct, as what is being transferred is not fee simple title to the land or the leased fee value to the District, but rather the assumed right to continue leasing the lot from CNPPID (leasehold rights).

Since the 2000 appraisal, the reported appraised Johnson Lake lot value has actually been only the leasehold portion of the total fee simple value. As lease fees increased since that time the divergence between leasehold value of the lots and fee simple value has grown. It should be noted that to the extent it was possible to determine, we found no other instances in the examples shown in Table 1 where the fair market value used as a basis for lease fee setting was not based on a fee simple appraisal.

Between 2002 through 2015 there have been 50 transfers of leases at Johnson Lake of vacant or teardown lots. In nearly all of these transfers (47 out of 50) the price paid to take over the lease was at least as much as the accepted value of the lot.

Substantial sales prices for lease transfers implies that CNPPID is charging contract lease fees that are below fair market value and these lower-than-market fees make the Johnson Lake leases more

affordable for individuals who do not happen to hold a lease at Johnson Lake and would like to. These individuals (who purchase an existing lessee's leasehold value in a lease) are being charged a premium to obtain the leases. In other words, new leaseholders end up paying market value for their newly acquired Johnson Lake leases, but a good share of the total payment over time goes to the current (selling) leaseholders (in the form of the lease assignment sales price) rather than to the CNPPID.

Based on the relationship outlined in the Lease Agreement where the annual lease fee is set at 5% of the fair market value of the lot, a generalized estimate of the average market value of a Tier 1 lot can be estimated from the appraised value of the transfers and current annual lease values. In the case of a (for instance) recent Tier 1 transfer, the appraised transfer value was (based on the 2007 appraisal) \$61,400 and the annual lease fee for the years of comparable leased sales examined in the appraisal was \$1,000. Within the field of real estate appraisal, the relationship between full fair market value of the fee simple ownership rights for a lot (fee simple value) and the leasehold value and leased fee value is defined as (Appraisal Institute 2001)

$$\text{Fee Simple Value} = \text{Leasehold Value} + \text{Lease Fee Value}$$

As noted, leasehold value is the value appraised in recent Johnson Lake appraisals.

The second factor in the equation (leased fee value) is the base value of the lot calculated from the annual lease fee (\$1,000 in the example) and the lease percentage (5%).

$$\text{Leased Fee Value} = \frac{\text{Annual Lease Fee}}{5\%}$$

For the case of an average Tier 1 lot in 2016 (based on 2015 appraisal values), the fair market value of the Tier 1 lot (the actual fee simple land value) is estimated as

$$\text{2016 Market Value of Average Tier 1 Lot} = \$86,600 + \frac{\$2,250}{5\%} = \$131,600$$

Based on data from 2002-2015 lease transfers at Johnson Lake, assuming a constant 5% annual lease rate on the fair market lot value, we estimate the 2016 fair market value of an average Johnson Lake Tier 1 lot at \$131,600.

Fair Market Implied Lease Rate from Lease Transfers

The previous section estimated the implied fair market value of Tier 1 lots at Johnson Lake under the assumption that the annual lease rate is set at the current 5%. An alternative way of looking at the values revealed by the data on lease transfers is to estimate the fair market annual lease rate (and associated Tier 1 annual lease fee) under the assumption that lot values are set at the levels accepted by CNPPID in recent years.

The financial details of the 50 vacant lot or teardown lease transfers at Johnson Lake between 2002 and 2015 combined with an implicit lease rate estimation equation (Duffield 1992) were used to estimate the fair market rental rate and annual fee implied by each transaction. A second set of Johnson Lake lease transfer data from the Dawson County, NE Assessor's Office was also analyzed to determine the fair market annual lease rate and fee implied from the sales/transfers of Johnson Lake lease properties. Evidence from lot transfers (both vacant/teardown transfers reported by the CNPPID and developed site transfers reported by Dawson County) show a willingness to pay even higher annual lease fees for Tier 1 lots (between \$6,300 and \$7,300).

Both the implied fair market lease fees from the CNPPID vacant/teardown data (\$7,300) and the Dawson County sales data (\$6,300) are significantly higher than the current \$2,250 lease fee assess for Johnson Lake Tier 1 lot leases.

Summary of Alternative Estimated Tier 1 Fair Market Lease Fees

A review and analysis of the history of lease rates at Johnson Lake and the specifics of rate setting, appraisal methods, and recent vacant or teardown lot transfer sales shows that lease fees at Johnson Lake have been and are currently set substantially below full-market value for the leases.

In recent years, sales of vacant/teardown leases have been for substantial and increasing prices. This trend in lot lease sale prices is fueled by substantial demand for the leases combined with below-market lease fees. The current annual fee for Johnson Lake Tier 1 lots is \$2,250. This is based on the Board of Directors of the CNPPID adopting a lot value (\$45,000) that was roughly 73% of the 2007 appraised value. However, the 2007 appraised Tier 1 lot value only included the leasehold value of the lot and was approximately \$20,000 less than the estimated full (fee simple) value of the lot. Therefore the annual lease fee of \$2,250 was approximately 55% of a lease fee based on 5% of the fee simple (fair market) value of the lots. Accordingly, we estimate the current (based on 2007 appraisal) fair market annual lease fee for Johnson Lake Tier 1 lots is \$4,070.

Evidence from lot transfers (both vacant/teardown transfers reported by the CNPPID and developed site transfers reported by Dawson County) show a willingness to pay even higher annual lease fees for Tier 1 lots (between \$6,300 and \$7,300).

Based on the fair market lease fees for Tier 1 lots from the estimated fee simple average lot value, and the implied values from lease transfers, we estimate that current (based on 2007 appraisal) Tier 1 annual fees are currently set at a level between 30% and 55% of fair market value.

Recommendations

It is unambiguous from the available data that current rates are (and rates for at least the past 10 years have been) significantly lower than what fair market rates at Johnson Lake would be. This is underscored by the fact that there is essentially zero vacancy of lease lots at the lake.¹

The purpose of this analysis is to assist the CNPPID in determining the fair market lease rate for Johnson Lake lots based on the recent 2015 lot appraisal and other available data. The 2015 appraisal estimated that the average leasehold value of Tier 1 transfers was \$86,600. This implies that the fee simple value of these lots is on average \$131,600. Based on the Johnson Lake Lease contract language, annual Tier 1 lease payments are to be set at 5% of the fee simple value, or \$6,580 per year (Table 2).

TABLE 2. COMPARISON OF ALTERNATIVE ESTIMATES OF MARKET VALUE OF JOHNSON LAKE TIER 1 LEASE RATES BASED ON 2015 APPRAISED LOT VALUES.

	Estimate Basis	Lot Value	Annual Lease Rate	Annual Tier 1 Fee
1	Assessment based on 2015 appraisal calculated <u>actual total</u> lot value (fee simple)	131,600	5%	\$6,580

Considering the data on historical Johnson Lake lot lease rates, appraisals, lot transfers, vacancy rates, and examples from comparable settings, we conclude that:

- 1. The fair market value of a Johnson Lake Tier 1 lot is approximately \$131,000 (2015 value);*
- 2. Considering the characteristics of Johnson Lake leases as compared to a wide range of other lease settings, the standard 5% of fair market appraised value annual lease fee is an appropriate lease percentage;*
- 3. Based on the estimated average Tier 1 fair market (fee simple) value of Johnson Lake lots, along with additional supporting evidence from Lease transfers and leases in comparable settings, the fair market annual Tier 1 lease fee is estimated to be in the range of \$6,300 to \$7,300.*

¹ Personal Communication, Jim Brown, CNPPID. June 8, 2016.

1.0 INTRODUCTION AND OBJECTIVES

The Central Nebraska Public Power and Irrigation District (CNPPID) retained Bioeconomics, Inc. of Missoula, MT in order to prepare an analysis and associated report examining the issue of setting fair market lease rates for CNPPID-owned recreational lots surrounding Johnson Lake in Nebraska. This report presents the data examined, methods used, analytical findings, and recommendations of Bioeconomics, Inc. as to the fair market lease rates for the Johnson Lake lots. The Statement of Work for the Project specifies this analysis:

- Review similar lease situations in the surrounding region;
- Compare similar situations (i.e. residential leased lots surrounding a lake);
- Review similarities and differences in lease characteristics;
- In addition to the bulk of the report, provide a detailed executive summary, representative graphics, and calculations to interpret the findings of the analysis.

The following analysis evaluates Johnson Lake lease rates in three ways: 1) by examining lease rates currently found at comparable sites; 2) by using data on Johnson Lake lease transfers to estimate the average fair market value Johnson Lake Tier 1 lots; and 3) by estimating the implied fair market annual lease rate, and associated annual fee for those leases by using the same data on Johnson Lake lease transfers. The next appraisal date for Johnson Lake lease lots is March 1, 2017, with new fees being phased in over the three-year period beginning with 2018 assessments.

1.1 Organization of Report

The Johnson Lake lease rate report is organized as follows:

- Section 2 describes the geographic and historical setting of Johnson Lake, the CNPPID, and the District's lake lot leasing program;
- Section 3 provides a discussion of the basis of lease rate setting and applications to Johnson Lake, and outlines the specifics of the Johnson Lake leases, including past appraisal values, leasing, and lease rate history;
- Section 4 examines data specific to Johnson Lake on lake lot transfers and vacancy rates/demand to empirically derive the appropriate full-market lease rate;
- Section 5 provides summary conclusions and recommendations.

2.0 BACKGROUND AND SETTING

This section provides a brief description of the Central Nebraska Public Power and Irrigation District (CNPPID) and Johnson Lake as they relate to the issue of lake lot leases.

2.1 Central Nebraska Public Power and Irrigation District

The CNPPID's website provides a concise description of the origin and current operations of the District:

The Central Nebraska Public Power and Irrigation District is a political subdivision of the State of Nebraska organized under public power and irrigation district laws of Nebraska passed in 1933. Central was created to enable the people of south-central Nebraska to develop the state's irrigation and electric power potential.

Central delivers irrigation water to more than 113,000 acres on the south side of the Platte River between North Platte and Minden and also provides supplemental water from Lake McConaughy (Central's main storage reservoir) to irrigation projects serving more than 110,000 acres along the North Platte and Platte Rivers.

Central generates electricity for homes, farms and industry at four hydroplants, one at Kingsley Dam and three on Central's Supply Canal.

Recreation is another benefit of Central's hydro-irrigation project. Nebraskans and visiting vacationers enjoy the excellent fishing, boating, swimming, camping and other recreational opportunities provided by Lake McConaughy, Lake Ogallala, Johnson Lake and many other small lakes along the Supply Canal.

Central's system of canals and laterals also provides groundwater recharge that helps stabilize groundwater supplies for irrigation, municipal and industrial uses.

The project also provides habitat for many species of fish and wildlife, a result of Central's active role in creating and preserving habitat in the Platte River Valley.

...Central's lakes also provide benefits to owners of approximately 1,100 private homes and cabins which are situated on District property around McConaughy, Jeffrey, Midway, Plum Creek and Johnson lakes. (<http://www.CNPPID.com>)

The District is governed by a 12-member board of directors elected from Gosper, Phelps, Kearney, Keith, Lincoln, and Dawson counties. Directors are elected to serve six-year terms. This Board of Directors has authority related to determining the key parameters affecting the lease fees for lake lots at Johnson and other District lakes.

The Johnson Lake area is located in central Nebraska on the Dawson-Gosper County line. Johnson Lake was created as part of a power and irrigation development of the CNPPID. Water to fill the lake has been diverted from the Platte River. Johnson Lake is surrounded by agricultural land, and the homes and businesses surrounding Johnson Lake constitute a community separate from any other established town in the area.

2.2 Johnson Lake Setting and Lease Characteristics

Johnson Lake serves as the regulating reservoir for the Johnson No. 1 and Johnson No. 2 hydroplants, which are one and six miles, respectively, downstream from the lake. The lake fills what was originally a natural depression area when construction began in 1939. Johnson Lake covers about 2,500 surface acres and is one of the most popular recreational lakes in central Nebraska.

Cabin development at Johnson Lake began with a few small structures, but by the late 1960s the 11-mile shoreline was lined with lots and structures, both modest and large. Johnson Lake also features a swimming beach, public boat ramps, “Hike and Bike” trail, concessionaires, and a nearby 18-hole public golf course.

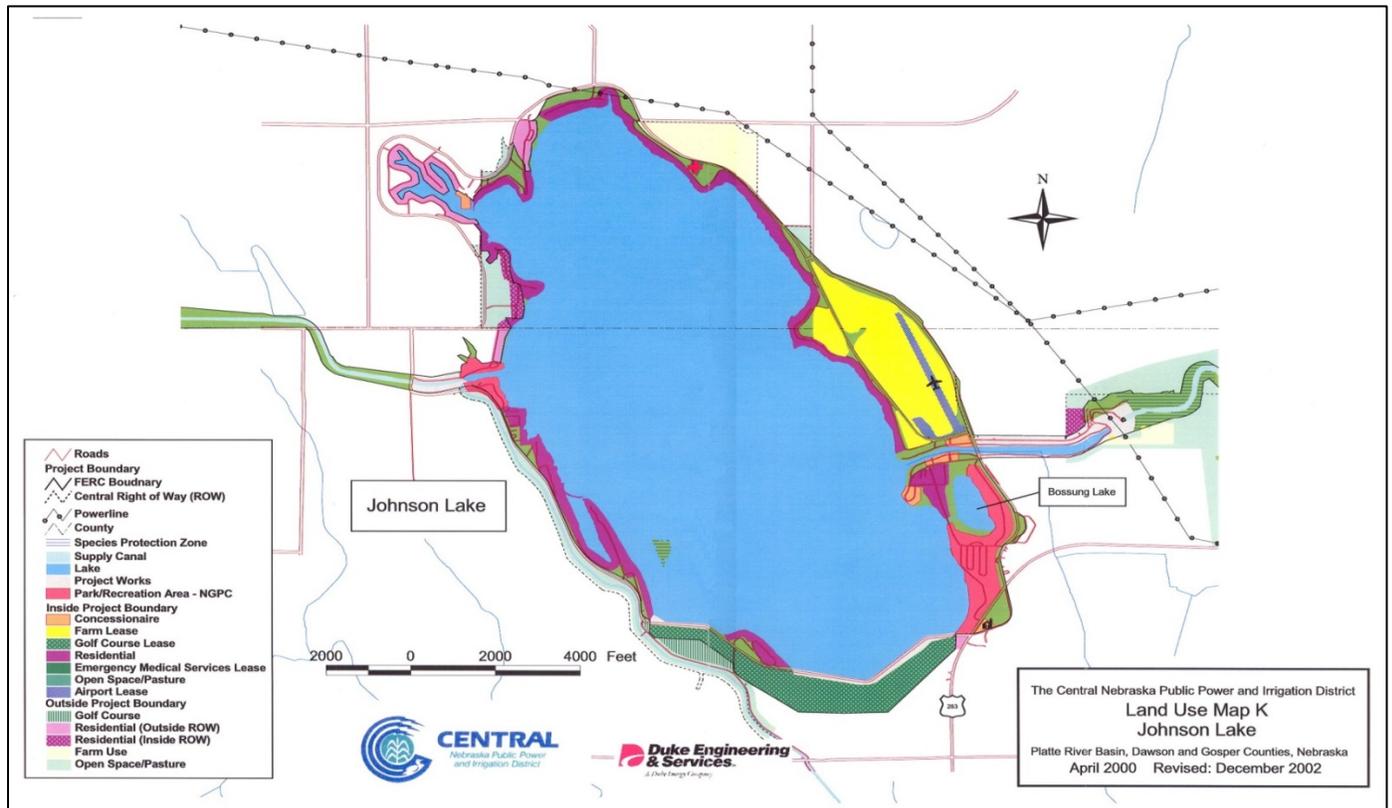


FIGURE 1. MAP OF JOHNSON LAKE AND LAND USES SURROUNDING THE LAKE (SOURCE: CNPPID.COM)

The CNPPID currently manages a total of 649 lake lots for lease at Johnson Lake (Table 3). For purposes of valuation and lease fee setting, the District currently (2015) categorizes these lots into five tiers. By far, the largest share of lots at the lake are classified as Tier 1, or lots that front the main body of Johnson Lake water (Figure 2). For lease fee setting purposes, lots falling into Tiers 2-5 are assessed lower fees.

TABLE 3. DISTRIBUTION OF CNPPID JOHNSON LAKE LOTS BY ASSIGNED TIER.

Lot Tier	Number of Johnson Lake Lots	Percent of Lots
1	485	75%
2	65	10%
3	3	<1%
4	89	14%
5	7	1%
Total Lots	649	100%

The classification of the tiers at Johnson Lake was performed by Frank C. Vetter, Real Estate Administrator and Daniel G. Ward, Drafting Supervisor of Central Nebraska Public Power and Irrigation District, and Dan Niemoth, President and Phyllis Byrns, Secretary of Johnson Lake Development, Inc. Norm Hoveling, Board of Director member, of Bullhead Point assisted with the Bullhead Point area. The inspection date was September 15, 1998. Tim W. Anderson, Public Information Officer of Central Nebraska Public Power and Irrigation District provided additional assistance with this process.

The following tiers were valued based on location, access to water, size of the lot, and view of the lake:

Tier 1 – Lots that front the waters of the main body of water known as Johnson Lake.

Tier 2 – Lots that have access to Johnson Lake but front water in what is commonly referred to as a cove or bay and which have limited view of the main body of Johnson Lake.

Tier 3 – Lots that have access to water but the access is extremely limited during normal lake elevation or lots that have access to water but the size is only adequate for a single wide trailer.

Tier 4 – Lots with no water access, size adequate for a residential home.

Tier 5 – Lots with no water access, size inadequate for a residential home, but suitable for a single wide trailer.

This classification is intended as an initial classification and shall not limit the establishment of additional tiers or modification of the criteria for the initial tiers. Exhibit A attached provides a listing of the classification for all lots at Johnson Lake.

FIGURE 2. ORIGINAL CLASSIFICATION CRITERIA FOR JOHNSON LAKE LOTS

As they comprise 75% of all Johnson Lake lots, those lots assigned to Tier 1 form the cornerstone of appraised value and associated annual lease fees. Appraisers have often described the market value of tier 2-5 lots as a percentage of the appraised value of Tier 1 lots. As the most prevalent and highest valued lots, Tier 1 lots and their associated lease fees are the primary focus of this analysis.

Figure 3 shows the distribution of lake frontage (in feet) for Johnson Lake Tier 1 lots. The mean (average) lake frontage is 60.7 feet, and frontages range from a low of 13 feet to a high of 666 feet. Similarly, Johnson Lake Tier 1 lots have a range of areas (square footage). The mean lot area is 9,770 sq. ft., and lot sizes range from 4,400 sq. ft. to 42,500 sq. ft.

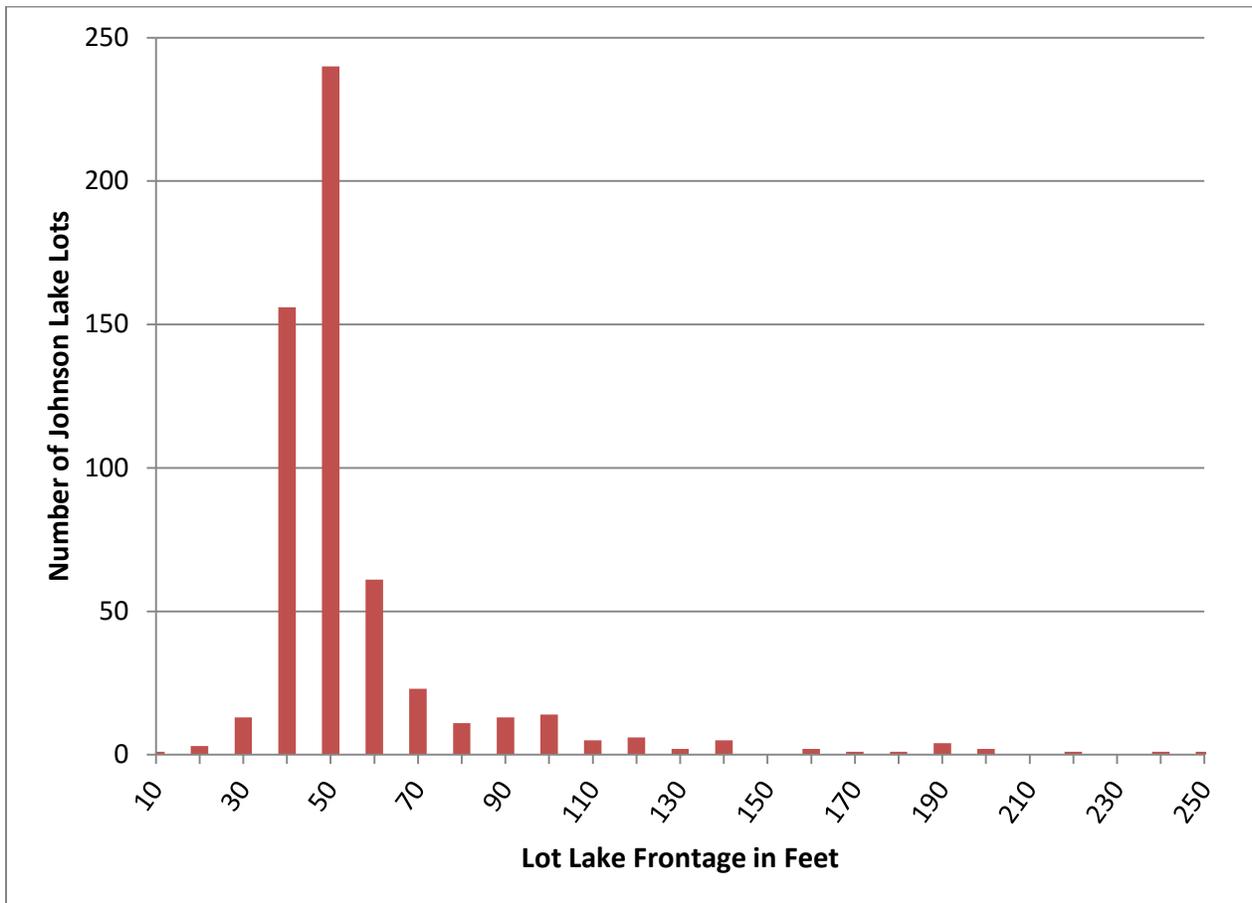


FIGURE 3. DISTRIBUTION OF JOHNSON TIER 1 LAKE LOTS BY FEET OF LAKE FRONTAGE (FRONTAGE IS REPORTED IN RANGES (E.G. 40-50 FEET), AND A SMALL NUMBER OF LOTS WITH GREATER THAN 250 FEET OF FRONTAGE ARE NOT SHOWN IN THE GRAPH).

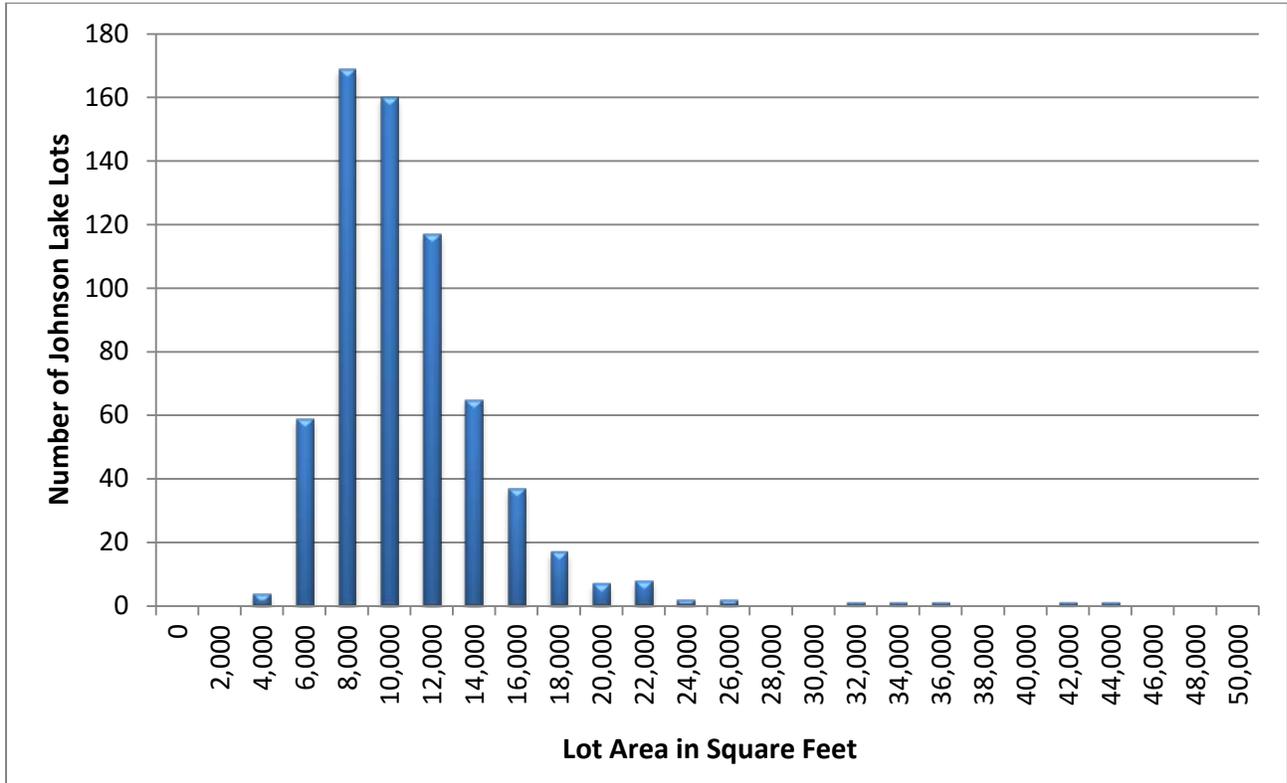


FIGURE 4. DISTRIBUTION OF JOHNSON LAKE LOTS BY TOTAL AREA (SQUARE FEET). AREA IS REPORTED IN RANGES (E.G. 8,000 TO 9,000 SQUARE FEET).

2.3 Statement of Study Objectives

Current annual lease fees for lake lots at Johnson Lake are based on 5% of the appraised value of the lots (Appendix A). In the case of a current Tier 1 lot lease, the lot value adopted by CNPPID is \$45,000 and the associated annual lease fee is \$2,250. The current fee is based on an appraisal done in 2007, and the most recent appraisal (2015) has estimated a much higher average Tier 1 lot value. New appraisals are conducted every 10 years. The next appraisal date for Johnson Lake lease lots is March 1, 2017, with new fees being phased in over the three-year period beginning with 2018 assessments.

The following analysis draws on the history of rate-setting at Johnson Lake, examples from other lake lease settings, and information on lease transfers at Johnson Lake to provide information to CNPPID on the likely current fair market lease rate for lots at Johnson Lake.

3.0 BASIS OF SETTING LAKE LOT LEASE FEES: JOHNSON LAKE AND COMPARABLE SETTINGS.

The question of what is a fair rental value for a Johnson Lake recreational lot lease appears straightforward. However, how this question is answered is dependent on the underlying definition of the word “fair.” Within some contexts fair is defined as the “full market value” of a lease, or the level yielding the highest amount of lease revenue to the lessor. In recent cases of state school trust lands in Idaho and Montana lawsuits have led state trust officials to significantly raise lease rates to comply (or more closely comply) with the state constitutional mandates for leases to be at full market value. These increases have led to significant jumps in annual lease bills for lots on some highly desirable lake lots in the states.

Another definition of a “fair” lease rate might be interpreted as being consistent with rates in other comparable areas, particularly nearby areas. From an economic theory perspective, setting rates based on nearby comparable sites may or may not result in full market rates, depending of the availability of comparable sites and how rates are set at those sites. When comparing lease rates, however, it is important to denominate rates in comparable terms.

A difficulty with lease rate setting in the case of cabin sites on leased land arises from a number of unique aspects of those leases.

1. Cabins/houses sitting on leased lots (such as at Johnson Lake) is a relatively unusual setting within the context of the larger retail lease market.
2. The split ownership nature of many lot leases and the improvements on them can somewhat (or greatly) restrict the efficient operation of the rental market of the lease.
3. In the case of Johnson Lake (and some other similar regional settings), having one entity (such as the CNPPID) own all lease lots on a lake’s shoreline complicates the accurate appraisal of the value of those lots.²

While house or business leases are common in the larger rental/lease market, there are only a relatively small number of settings where land is owned by either a public or quasi-public entity and that land is leased to someone who builds improvements on the lot. Due to the growing issue of appropriately valuing leased lots, there have been a number of recent analyses which have reviewed and compared lease rates across similar settings. This analysis provides such a review as well.

² At Johnson Lake, there are three developments that lie just outside of CNPPID’s property boundary. At these areas, there are varying width strips of District-owned shoreline property which are then either leased or have access provided at no fee due to preexisting agreements.

3.1 Two Approaches to Setting Lease Fees

Direct appraisal of lease value using comparable lease examples

When a home is appraised for sale, the general procedure is for the appraiser to compile a detailed list of the characteristics and amenities of the home and then search for comparable homes that have sold in the recent past. The characteristics of the home being appraised and those that have recently sold are compared and adjustments are made to the values of the recently sold comparable properties to arrive at a best opinion of the current market value of the home being appraised.

The process of home appraisal is easiest when there are many very similar recently sold properties to make comparisons with. However, appraisal becomes much more difficult, and more speculative, when there are few (or no) nearby comparable sales.

In the case of directly appraising the value of a lease (the annual lease charge), an appraiser would likewise search for nearby comparable lease situations and appraise the subject lease (such as a Tier 1 Johnson Lake Lot lease) based on comparable nearby similar leases. Unfortunately, it is very difficult to find comparable lease settings where: 1) the lease cost for the land is separable from that for any improvements; 2) the location, amenities, and setting (lake front footage, for example) are truly comparable; and 3) the land owner is truly a private entity making revenue-maximizing pricing decisions within the lease market.

Because of the difficulty of finding comparable lease examples for use in direct lease amount appraisal, most public or quasi-public landowners with leased recreational or residential lots rely on direct appraisal of the value of the lot itself (exclusive of any improvements) in setting annual lease fees. Once the value of the underlying lot is estimated, decisions related to lease setting focus on the choice of an appropriate lease rate, defined as the percentage of the lot (land) value that is charged annually as a lease fee.

Appraisal of the lot and application of an appropriate annual lease rate

The second, more common, method of appraisal to help in setting of lake lot lease amounts is appraisal of the bare land lots themselves. Ideally, this type of appraisal would use the same methodology as valuation of, for instance, residential homes. Within the context of litigation surrounding the setting of lease rates for cabin lots situated on school trust lands, the lease “rate” has generally been defined as the percentage of the appraised market value of the lot itself (without any improvements). The appraised value of the lot is generally assumed to reflect the true market value of the lot, and the debate over what the fair “lease value” is has centered on what percentage of that appraised value should be assessed each year as a lease rate.

Standard market appraisals of homes and the validity of those appraisals rests on the underlying assumption that the home sale market is an efficiently operating one and the prices of recently sold properties represent the full-market value that a profit-maximizing seller would demand for their homes. This underlying assumption may or may not be true in the cases of leased lots for cabins or residences. In settings of school trust land cabin sites in Idaho and Montana, there are many trust

land lots that are interspersed with privately owned lots on several lakes in the states. This setting makes appraising and valuing the state lots much easier as there are generally a number of recent sales of privately owned similar lots in the near vicinity.

In the case of Johnson Lake, however, all shoreline is owned by CNPPID. In some cases this shoreline is leased as part of a lot lease. In others, it is leased as lake access to adjacent privately owned lots. In the case of Pelican Bay, access to CNPPID shoreline from privately owned lots is allowed without lease fee based on a historical agreement. Because there are no private lots with deeded lakefront on Johnson Lake, any search for truly comparable lot values must look at sites not located on Johnson Lake, and ideally privately owned (not owned by an agency such as CNPPID or another state or county agency) so that revenue maximization by the owner is less likely to be constrained by history or public (agency) policy.

3.2 Data and Analysis of Parallel Examples from other Federal and State Settings

Lease contract terms at Johnson Lake specify an annual lease payment of 5% of the appraised value of the lake lots. Before examining data specific to the Johnson Lake leases, we reviewed a wide selection of lease examples and studies of lease terms from around the U.S. to determine how the lease terms at Johnson Lake compared to “typical” lease terms found in other settings.

A combination of factors has led to a great deal of interest and research in recent years into determining the appropriate fair market value of recreational lease lots. While relatively rare, these lots are seen in a number of settings involving federal and state lands, and (as in the case of CNPPID) utility/district-owned lands. Many lots have been developed on lakeshores for the obvious reason that these sites have substantial scenic and recreational value.

Prior to the 1990s, leases at these sites were generally priced extremely low and drew little attention. However, as many areas grew in population and water-based recreation become more popular, the value of many lease lots rose dramatically. Appraisals from cycle to cycle for some lake lots were seeing 50-100% increases in lot value. The result was that policy and statutes often dictated commensurate increases in annual lease fees. In many areas these lake lots had originally been leased by middle class families who had built very modest structures on them. Faced with rapidly rising lease fees due to dramatic lot value increases, more and more tenants were forced to transfer their leases and sell their improvements. Ownership of lake leases in areas such as Flathead Lake in Montana or Payette and Priest Lakes in Idaho shifted from middle class recreational use to more high-income luxury lots. With this shift has come understandable resistance from tenants and challenges to increased lease fees.

Since the mid-1990s, a number of studies have examined the issue of defining the appropriate fair market value of these leases. A 2015 study by Bioeconomics for the State of Montana reviewed a number of analyses of market lease rates for recreational lease lots (Bioeconomics, 2015). Perhaps the most exhaustive of these was completed by Knipe & Knipe (1998) for the state of Idaho. In their report, the authors examined examples from Federal (USFS), State, corporate, and private leases.

Knipe & Knipe concluded based on the preponderance of the evidence that an Idaho trust land cabin lot should have a market lease rate of about 6% of appraised lot value. This conclusion and rate was in the range of rates suggested by a myriad of other studies as well as actual market examples.

The Knipe & Knipe report suggested a number of lease characteristics that might influence whether a lease in a certain situation should have a higher or lower annual lease rate (Table 4).

TABLE 4. LEASE CHARACTERISTICS INFLUENCING ANNUAL LEASE RATE (KNIPE & KNIPE 2008).

Lease Characteristics	Typical Lease Parameters Found in Comparable Lease Agreements	Relationship of Johnson Lake Leases to Typical Terms
Lessor Motivations	An entity leasing land with a public relations motivation may set their rates below market value, where an entity concerned with profit maximization would not.	CNPPID seeks fair market lease rates
Property Taxes	Typically, lessees pay property taxes on improvements, but who is responsible for taxes on the land itself is more variable, and must be considered when determining the effective rent for the lessee.	Lessees pay land taxes
Use	The vast majority of leases examined are single recreational residential use, and generally allow year-round use.	Typical
Lease Terms	Lease terms vary, from 25-year leases to leases with rolling-out clauses. This variation in terms seems to align with variation in lessor motivations, and does not appear to correlate with rate differences.	Typical
Lease Rate Changes	Virtually all lease amounts were adjusted annually, generally either by CPI or re-appraisal.	Ten-year re-appraisal, no annual adjustment; 3-year phase-in.
Utilities Available	Generally lessees own and maintain septic and water systems—the only lessors who indicated they provided or guaranteed a specific utility were power companies.	Typical
Year-Round Accessibility	Access varies between comparables. Although access is generally year-round by agreement, some locations may be seasonally restricted due to natural conditions.	Year-round
Lessee’s Right to Expand or Rebuild Improvements	Generally modifications to improvements require lessor oversight and approval—the extent to which said oversight is required varies.	Typical
Renewal	All leases reviewed give lessees the first right of refusal.	Typical
Normal Expiration with Renewal Rights to Improvements	Generally, leases require lessees to remove improvements and restore condition or have ownership revert to the lessor, but in practice ownership of improvements is almost always transferred to the next lessee.	Typical
Landscape	Generally changes to the landscape are allowed with approval.	Typical
Ability to Mortgage	Lessees are not allowed to subordinate the lessor’s interest to a mortgage, but are generally permitted to secure mortgage financing against improvements.	Typical

Johnson Lake lessees incur a number of either periodic or one-time expenses related to maintaining their leased lots. The typical lot lease requires the lessee to own and maintain well and septic systems. The fees for these services paid by Johnson Lake lessees to the SIDs are consistent with this general practice in comparable sites. Other expenses are either minor in terms of total lease costs (such as tree trimming) or are discretionary expenses made to protect the lot and investments in lot improvements (such as shoreline protection). These expenses are not atypical of costs and requirements at comparable lease settings. Johnson Lake lessees pay property taxes on the value of the leased lot as well as on any improvements to the lot. While not uncommon, in the majority of cases examined the lessee only was responsible for taxes on improvements, and not the underlying lot. On a balance, the Johnson Lake leases have restrictions and terms that are typically found in comparable lease settings. Based on these factors, there is no reason to conclude that lease fee rates (% of fair market lot value) should be substantially different from those rates found Table 5, below.

Table 5 shows a number of examples of similar lease rates presented in the literature as well as currently set by federal and state statute, and by utilities, for recreational lot leases. It is important to note that each example in the table has its own unique characteristics, making direct comparisons across examples difficult. For example, in Minnesota, while the general rate for trust land lot leases is 9% of appraised value, the state legislature passed a law capping the rate at 2% of lakefront lots. A second example from Minnesota comes from shore-land recreational lots leased by Minnesota Power as cabin sites.³ The Minnesota Power leases have a lease fee of 2.5% of full-market value of the lot, plus all property taxes. In Minnesota, the median property tax rate is 1.05%, so the average effective rate for these leases is in the range of 3.55%.

The examples in the table vary on the high estimate side, ranging up to 13%. However, aside from the Minnesota state land lakefront lot example, minimum rates are generally in the 3.5% to 6% range. As noted, a complete comparison of generally comparable recreational lot leases to Johnson Lake leases goes beyond simply comparing annual lease rates, as the terms and conditions of the leases can also be very different.

The case of Lake Maloney (owned by NPPD) is one where while a recent appraisal has required a very significant lease fee increase (from \$500/year to \$2,250 to \$3,250/year). This increase, however, is being phased-in over a very long 15 year period. At the end of this phase-in, a new appraisal will be obtained. Therefore, while lease fees at Maloney are set at 5% of fair market lot value, in practical terms lease fees charged and paid lag many years behind actual fair market rates due to the long phase-in period adopted by NPPD.

³ A discussion of the Minnesota Power leasing program can be found at www.shorelandtraditions.com

TABLE 5. TYPICAL RECREATIONAL LOT LEASE RATES FROM THE LITERATURE, STATUTE, AND MARKET EXAMPLE

Setting / Study	Effective Rate (annual)	Basis
USFS	Originally 5%. After 2014, lease changed to tier system, indexed to inflation.	Pre-2014, explicitly appraised fair market (fee-simple) value ^b
California	9%	Appraised fair market value
Idaho Trust Lands	4% of past 10 years average value—program in place to sell cottage lots.	Appraised fair market value
Minnesota Trust Lands	9% in general but 2% for lakeshore lots	Appraised fair market value
Minnesota Power Leases	2.5% + taxes (1.05% average) = 3.55%	Appraised fair market value
Idaho State Parks	3.5%	Appraised fair market value
Maloney Lake (NE)	5% with 15-year phase in period for 2015 appraised values	Appraised fair market value
Harlan County Lake (NE)	Flat Fee	\$2,000-\$2,100 annually for trailer space
Shadehill Reservoir (SD) market rent survey ^a	Flat Fee based on comparable sites	\$2,100 annually for cabin site or trailer space (6-7 month occupancy)
Ohio Trust Land	Minimum 10%	Appraised fair market value
Alabama Power (Lake Martin)	4%	Appraised fair market value
Bois Forte Band of Chippewa (MN)	2% for Tribal members; 7% non-members	Appraised fair market value
Heart Butte Reservoir (SD) market rent survey ^a	Flat Fee based on comparable sites	\$2,350 annually for cabin site (6-7 month occupancy)
Muskingum Watershed Conservation Dist. (OH)	5%	Appraised fair market value
Glendo Reservoir (WY) ^a	5%	Fair market value indexed for inflation (6-7 month occupancy)
Alcoa Reservoir (WY) ^a	5%	Fair market value indexed for inflation (6-7 month occupancy)
Guernsey Reservoir (WY) ^a	5%	Fair market value indexed for inflation (6-7 month occupancy)
Northwestern Lake (OR) ^c	6%	Appraised fair market. 5% annual increase. (\$7,300/yr for lakefront in 2010)

^a No Year-round occupancy. Use limited generally to 6-7 months. ^b All land/lot appraisal examples utilized fee-simple appraisals. ^c In 2010 Northwestern Reservoir was drained after dam removal. Leases were rewritten to reflect change in waterfront.

While lease rates and terms vary considerably from site to site, based on a review of a wide selection of lease settings and broad-ranging reviews of comparable lease terms the current contract rates at Johnson Lake of 5% of fair market lot value are well within the typical range of terms seen in other areas. Further, the 5% of market rate terms are consistent with or below the large majority of settings where lease fees are based on a percentage of lot value.

3.3 Review of Lease Rate Setting methods at Alternative Sites

While the majority of residential/recreational lot leases we have reviewed use a defined percentage of the appraised land value to set lease fees, there are several other methods employed for lease fee setting. Additionally, lease sites often employ a combination of lease fee setting rules which reflect the realities of the leasing history of different sites.

Table 6 shows a range of methods for setting lease fees that we have found in our review of lake lot lease sites. As noted in the table, the most common method of fee setting is to determine the appraised value of the lots and then charge an annual fee of a certain percent of that value. This method (used at Johnson Lake) is appealing for a number of reasons: it is based in a solid land appraisal; the annual lease percentage can be compared to a wide variety of similar situations throughout the country; and the calculation is intuitive and easy to compute.

TABLE 6. DIFFERENT LEASE FEE SETTING METHODS REVIEWED.

Fee Setting Method	Description	Example of where used
% of land value	Contract language generally describes a defined % of the appraised value of the land with land reappraisals periodically. Phase in periods for rate adjustments are often used.	Johnson Lake; State Trust land cabin-site leases in MT, ID; Muskingum Watershed Conservancy District (OH)
% of land value indexed for inflation	Use of a base year appraised lot value, and then indexing the fee (% x lot value) using a price index in future years.	Glendo, Alcova, and Guernsey Reservoirs
Cost of Operation	Set lease fee at a level that covers the current and anticipated costs of operating and maintaining the site	Council Grove City Lake, Kansas
Preferential Rates based on lessee	Using different rates for different groups of lessees (exp. Different lease rates for Tribal members and non-members)	MN Chippewa Tribe: Lake Vermillion; Net Lake
Preferential Rates based on Grandfathered status	Having two rate structures for those leaseholders with leases dating before a set date, and another structure for more recent lessees	Muskingum Watershed Conservancy District (OH)
<i>Ad Hoc</i>	Fees are set based on historical fees and some judgement of what an appropriate increase might be.	Numerous, e.g. St. Louis County, MN

Other methods of lease fee calculation include relying on an appraised lot value and annual lease percentage, but then indexing this lease fee using some variant of the Consumer Price Index. This method has been adopted at several central Wyoming reservoirs (Glendo, Alcova, and Guernsey) to

avoid the lease shock that can occur when periodic lot appraisals show dramatic jumps in lot values. The use of a CPI index allows the lease fees to rise in a more gradual manner.⁴

An example of setting lease fees at a level to cover the costs of operating and managing the site comes from cabin sites at Council Grove City Lake in Kansas. In 2011, the Council Grove City Council considered implementing a 400% increase in fees for a typical lake lot (from about \$550 to \$2,400/yr) to reflect the current value of the lots and demand for homes there.⁵ After negotiations with lessees, a more modest increase to \$1,200 over three years was written into contracts. These contracts explicitly note that the lease fee is based on

... historical expenses incurred by the City, related to the Council Grove City Lake Park, and for matters that directly and specifically benefit the residential lots... (Council Grove City Lake Park Ground Lease Agreement)

The lease explicitly ties future annual fees to costs incurred by the city in managing the lake properties.

Some lot lease settings have tiered, or preferential, lease structures. The most common example is in “grandfathering” low lease fees to lessees whose agreements pre-date a certain year. This situation occurs in the case of the 1200+ lake lots leased by the Muskingum Watershed Conservancy District in Ohio (MWCD). The MWCD utilizes a rate-setting goal of 5% of the appraised lot value for all new and recent leases, but lessees who hold leases from 2000 or before have a much lower rate that is locked in for as long as they hold the lease.⁶

A final “catch-all” category of lease fee setting is “*ad hoc*” fee setting. In these cases rates are based not on a target rate of return or costs of operation, but rather on judgment of what is “fair” by the managing agency.

3.4 Process of Lease Fee Determination

The examples from Table 6 show that most lease fee setting begins with an understanding of the goal or objective of the leasing agency. In some instances this is clearly defined by statute. In the case of recreational lease lots on school trust lands in MT and ID, the state codes of the two states require that the lots be leased to maximize returns to the school trust. The practical application of this mandate involved requiring periodic appraisals of lots and application of an agreed-upon annual percentage lease rate. As appraised value has increased, debate on appropriate rates to maximize returns to the trusts has centered on the profit-maximizing annual percentage lease rate.

⁴ Personal Communication, Dick O’Hearn, Natrona County Parks Director. Natrona County, WY. May 24, 2016.

⁵ “Council Grove lake view may cost more” Wichita Eagle May 11, 2011.

⁶ Personal Communication, Peggy May, Muskingum Watershed Conservancy District, Cottage Site Leasing Program, June 15, 2016.

In other instances the objective of lease setting is more complex. In the case of Council Grove Lake, the City Council decided to set their goal at covering costs of operation. This implied lease rate is likely substantially below full-market rates that most lessees would be willing and able to pay.

Why not just look at fees at nearby lakes to set Johnson Lake lease fees?

Most rigorous studies of recreational lease fees have focused not on the absolute amount of the fees in different settings, but on the appropriate percentage of appraised value for rate setting (Knipe & Knipe 1998; DNRC 2009; Bioeconomics 2015). The reason these studies have focused on the annual percentage lease fee is that the estimated value of properly appraised lots already controls for nearly all differences across lease settings. That is, the appraised value (to a greater or lesser extent) controls for access, amount of lake frontage, location, desirability of site, size of site, and demand for lots in the area.

If direct comparisons of lease fees at alternative sites are made, it is extremely difficult to control for differences across lease locations in order to accurately compare lease fees. Table 7 shows a sample comparison developed by CNPPID between annual lease characteristics at Johnson Lake and two other lease settings. As is evident from the table, it is impossible to reach a conclusion about the appropriate level of Johnson Lake lease fees based only on direct comparisons of widely different lease settings. Fees for Johnson Tier 1 lots are comparable to Glendo A fees, but Glendo only allows 6 month occupancy whereas Johnson allows year-round. The sites also differ in terms of size of structure allowed, amenities, and taxes. The difficulty in comparing Johnson and Glendo leases is also present to a greater or lesser extent in most direct comparisons between sites. This difficulty is made even greater by the relative scarcity of truly comparable lease sites in the region. Annual fees at different sites also are often based on historical fee levels being recently adjusted to reflect the economic realities of the current value and demand for the lease sites. Given the difficulty in identifying comparable settings and making the necessary valuation adjustments to compensate for differences across settings, the alternative use of properly appraised lot (land) values as a basis for lease fee setting provides a solid, consistent framework for both lease rate discussions and justification of fees.

TABLE 7. CNPPID SAMPLE COMPARISON OF LEASE CHARACTERISTICS (SOURCE, CNPPID).

Site	Lease	Size	Usage	Provided Amenities	Lake-front	Taxes	Opportunity for Boat Dock/Slip
Johnson Tier 1	\$2,230	Varies	Year Round	5 months Trash*	Yes	Cabin and Leasehold Interest	Yes
Johnson Tier 4	\$450	Varies	Year Round	5 months Trash	No	Cabin and Leasehold Interest	No
Glendo A	\$2,740	500 – 700 sq ft cabin	6 months max.	None provided	Yes	Cabin only	Additional Charge at Marina
Glendo B	\$1,920	500 – 700 sq ft cabin	6 months max.	None provided	No	Cabin only	Additional Charge at Marina
North Shore Marina – Harlan County	\$2,100	3000 sq ft Lot	Year Round	Sewer, water, and trash included	No	Cabin and Leasehold Interest	Additional Charge at Marina
Patterson Harbor - Harlan County	\$1,900	3000 sq ft Lot	Year Round	Sewer, water, and trash included	No	Cabin and Leasehold Interest	Additional Charge at Marina

* CNPPID reinvests certain dollars in the community. Currently this includes mowing and 5 months of trash collection. What amenities are provided is subject to change.

Because of the limitations of finding directly comparable lease settings, the most widely accepted method of setting lease fees for recreational lots remains to be based in applying an annual lease rate to an appraised lot value.

Determining the Annual Percentage of Lot Value Rate

Once the fair market value of the lease lots is determined, the only decision remaining is to set the appropriate annual lease rate, or percentage of lot value. While many different rates are employed in practice throughout the U.S., by far the most commonly adopted value has been 5% of fair market value. This value has been historically used by many Federal land management agencies, state agencies, utilities, and other resource management entities. A rate of 5% has also appropriately been used in Johnson Lake lease contracts.

One significant factor that impacts the annual lease cost at Johnson Lake, which is not reflected explicitly in the 5% rate, is taxes on the lots themselves. In the case of most Federal and state lot lease programs, lessees only pay taxes on their improvements to the lot, and not on the land beneath them. In the case of many utility lease programs (such as with CNPPID) the lessees pay taxes on the value of the lots as well as on the improvements. This additional tax represents a significant increase in the base 5% rate CNPPID charges lessees. In the case of Gosper County, the tax rate on the lot is

1.98%⁷. Therefore, the effective lease rate for Johnson Lake lessees within Gosper County is about 7% of fair market lot value. While 7% is certainly substantially more than 5%, lot transfer data from Gosper County for 2014 and 2015 (Section 4.1) shows that based on prices paid for leases, buyers valued those leases at a rate of between 10% and 13.5%-even more than the 7% effective rate they were paying (Table 14).

3.5 How Lease Fees have been Historically Set at Johnson Lake

The effort to establish a market-grounded basis for lease fee setting at Johnson Lake has faced many of the obstacles discussed above. Specifically, there are no privately owned lots with privately owned and deeded lake frontage on the lake to look at for comparable valuations, as all lake frontage lots are owned and leased by CNPPID. While there are some nearby lake lot lease settings, these examples also have many of the same limitations as those of the Johnson Lake lots.

Since at least 1994, the CNPPID has hired appraisers to estimate the “market value” of Johnson Lake lots exclusive of any improvements. These valuations have typically been given as a market value for the different defined “tiers” of lots, with a distinct value assigned to each tier. The appraised values from the three most recent appraisal cycles are shown in Table 8 (Appendix B).

TABLE 8. JOHNSON LAKE CNPPID APPRAISED LOT VALUES BY TIER

	2000 Appraised Value	2007 Appraised Value	2015 Appraised Value
Tier 1	\$44,900	\$61,400	\$86,600
Tier 2	\$23,000	\$24,560	\$60,620
Tier 3		\$12,280	\$43,300
Tier 4	\$10,000	\$12,280	\$8,660
Tier 5		\$3,070	\$4,330

While the appraisers offer their best opinion of the value of the lake lots, the CNPPID reviews this appraisal as well as any counter appraisals in accepting and approving the final lot value for lease-setting purposes. This accepted and approved value has been substantially below the CNPPID appraised lot value in past years. For instance, while the 2000 appraisal estimated the average Tier 1 lot to be valued at \$44,900, the CNPPID accepted a value of \$20,000 for lease purposes, with annual lease fees being 5% of the adopted value (\$20,000). Similarly, in 2007 the CNPPID appraised value was estimated at \$61,400 and the CNPPID accepted a value for lease calculation of \$45,000. At the current annual lease rate of 5% the annual lease fee for a Tier 1 lot is \$2,250.

⁷ Personal Communication, Cheryl Taft, Gosper County Assessor.

Defining the Base Value of a Johnson Lake Lot

The current lease contract language for a Tier 1 lot on Johnson Lake specifies that the annual lease amount due to the district is calculated as,

4.1.5 For and during the remaining lease years of the term hereof, the Tenant shall pay to the District an annual rental the amount of which shall be equivalent to five percent (5%) of the fair market value of an average First Tier Lot...

The contract further specifies that “fair market value” shall be determined by,

4.2.1 The District shall hire an independent certified appraiser and the appraiser so hired by the District shall determine the fair market value of an average First Tier Lot.

As noted, in order to calculate leases and comply with the lease contract, the District has commissioned lot appraisals. The original appraisal commissioned by CNPPID (Harris, 1994) clearly outlined the intent of the District to determine the fee simple value of the lease lots (land without improvements). While the comparable lot sales examined by Harris included both sales of leased lots and private (deeded) lots, at the time of the 1994 appraisal there were no lease fees charged at Johnson Lake, and thus no substantive difference between leasehold value and fee simple value. Due to the difficulties associated with identification of sales of recently sold lake lots comparable to those on Johnson Lake, subsequent appraisers have since at least 2000 relied exclusively on the sales of vacant or teardown⁸ lease transfers as their comparable sales. While the appraisal reports have all utilized a consistent method of examining vacant or teardown lease transfers as “comparable sales,” the appraisal reports have varied as to how the property rights being appraised are defined. Both the 2000 and 2007 appraisal reports define the property rights as “fee simple.” With the instituting of annual lease fees charged by the District at Johnson Lake, this description was not entirely correct, as what was being transferred was not fee simple title to the land, but rather only the assumed right to continue leasing the lot from CNPPID (leasehold rights), and not the “leased fee” rights represented by the annual lease fees paid to the District. The 2015 appraisal more accurately describes the appraised property rights as “leased fee,” but even this does not capture the nature of what right is transferred in these comparable sales.

In looking at prices charged for transfers of leases in the case of Johnson Lake vacant lots or teardowns, it is clear that there is no ownership transfer of the actual physical lot, which remains in the ownership of CNPPID. Rather the “property” being transferred is the right to lease the lot from CNPPID, or the leasehold right.

⁸ A teardown transfer is one where the new lot tenant intends to remove most or all improvements that were previously on the property and add their own improvements. These cases are treated as equivalent to transfers of vacant lots as there is no value to any existing improvements to the new tenant.

Interpretation of the Value of Lease Transfers within Economic Theory

While the past appraisal documents commissioned by the CNPPID have contained data on lease transfer sales used as comparable examples, the CNPPID also supplied Bioeconomics with a comprehensive list of transfers since 2002. This list included both developed lot transfers and transfers of vacant or “teardown” lots. In all, from 2002 through 2015 there have been 50 transfers of leases of vacant or teardown lots (Table 9). As can be seen from the reported lease transfers, in nearly all transfers (47 out of 50) the price paid to take over the lease is at least as much as the assessed value of the lot as accepted by CNPPID.

From an economic theory standpoint this is difficult to understand. A parallel example might be the case of someone interested in renting a house for \$1,000 a month. The house is appraised at \$200,000, and the owner says “if you give me \$200,000, I will lease the house to you for \$1,000 per month.” Of course, no one would expect to both pay the full value for a house whose title they were not even buying, and then pay rent as well to live in the house. People expect that they either buy a property outright, or lease the property for a monthly or annual fee, but not both.

The data from Table 9, however, suggests that people interested in leasing lots at Johnson Lake from CNPPID are willing to both pay the previous tenant the full value of the lot *and* pay CNPPID the annual lease fee.

When someone decides to buy an existing lease from someone else at Johnson Lake, from an economic decision-making perspective they consider both the cost of buying the lease from the previous tenant and the annual lease fee that will need to be paid to the CNPPID. The value of the lease to the potential purchaser is the sales price for the transfer plus the net present value of the stream of future lease payments to CNPPID. In the case where CNPPID annual lease fees were \$0, we would expect the price of the lease transfer to rise proportionately. Conversely, if CNPPID were setting lease fees at fair market value we would expect that people would be willing to pay very little to take over the lease of a vacant lot. In essence the sale price for the lot leases and the annual lease amount are two parts of the same value—the value of owning the right to lease the lot at expected annual lease rates. The difference is who is capturing that value. In the Johnson Lake case, the value of these leases is being split between the CNPPID and the tenants. From the perspective of economic theory, there is one clear conclusion from the data in Table 9: for the period 2002-2015 lease fees for Tier 1 Johnson Lake lots have been set substantially below fair market levels, and as a result tenants selling leases have been able to capture some of that value through substantial transfer (sales) fees for the leases.

TABLE 9. CNPPID TRANSFERS OF VACANT OR TEARDOWN LEASE LOTS (2002-2015)

Year	Sale Price	Tier	Land Prices (Sale Year CNPPID Set Market Value)	Sale Price/Sale Year Value	Sale Price > CNPPID Market Value?
2002	\$ 52,000	1	20,000	2.600	YES
2002	\$ 295,000	1	20,000	14.750	YES
2003	\$ 47,500	1	20,000	2.375	YES
2003	\$ 60,000	1	20,000	3.000	YES
2003	\$ 125,000	1	20,000	6.250	YES
2004	\$ 78,500	1	20,000	3.925	YES
2005	\$ 74,000	1	20,000	3.700	YES
2005	\$ 51,500	1	20,000	2.575	YES
2005	\$ 55,000	1	20,000	2.750	YES
2006	\$ 37,500	1	20,000	1.875	YES
2006	\$ 84,000	1	20,000	4.200	YES
2006	\$ 17,500	1	20,000	0.875	NO
2007	\$ 62,000	1	20,000	3.100	YES
2008	\$ 44,000	1	28,333	1.553	YES
2008	\$ 40,000	1	28,333	1.412	YES
2008	\$ 58,000	1	28,333	2.047	YES
2008	\$ 62,500	1	28,333	2.206	YES
2008	\$ 49,900	1	28,333	1.761	YES
2008	\$ 40,000	1	28,333	1.412	YES
2008	\$ 100,000	1	28,333	3.529	YES
2009	\$ 90,000	1	36,667	2.455	YES
2010	\$ 51,000	1	45,000	1.133	YES
2010	\$ 45,000	1	45,000	1.000	NO
2011	\$ 54,500	1	45,000	1.211	YES
2011	\$ 70,000	1	45,000	1.556	YES
2011	\$ 70,000	1	45,000	1.556	YES
2011	\$ 25,000	1	45,000	0.556	NO
2012	\$ 125,000	1	45,000	2.778	YES
2012	\$ 190,000	1	45,000	4.222	YES
2012	\$ 80,000	1	45,000	1.778	YES
2012	\$ 120,000	1	45,000	2.667	YES
2012	\$ 117,500	1	45,000	2.611	YES
2013	\$ 150,000	1	45,000	3.333	YES
2013	\$ 112,500	1	45,000	2.500	YES
2013	\$ 120,000	1	45,000	2.667	YES
2013	\$ 80,000	1	45,000	1.778	YES
2015	\$ 226,000	1	45,000	5.022	YES

Year	Sale Price	Tier	Land Prices (Sale Year CNPPID Set Market Value)	Sale Price/Sale Year Value	Sale Price > CNPPID Market Value?
2015	\$ 145,000	1	45,000	3.222	YES
2004	\$ 26,000	2	8,000	3.250	YES
2004	\$ 78,500	2	8,000	9.813	YES
2011	\$ 48,000	2	18,000	2.667	YES
2011	\$ 77,000	2	18,000	4.278	YES
2011	\$ 95,000	2	18,000	5.278	YES
2014	\$ 72,000	2	24,560	2.932	YES
2002	\$ 30,000	4	4,000	7.500	YES
2003	\$ 20,000	4	4,000	5.000	YES
2012	\$ 55,000	4	9,000	6.111	YES
2014	\$ 35,000	4	9,000	3.889	YES
2014	\$ 22,000	4	9,000	2.444	YES
2015	\$ 39,000	4	9,000	4.333	YES

As discussed, the appraised lot values from the 2000-2015 appraisal reports for Johnson Lake lots do not reflect the fair market value for the actual land (lots), but rather are estimates of the leasehold value for the average Tier 1 lot that is not reflected in the annual lease fee.

Substantial sales prices for lease transfers means that the CNPPID policy of below market contract rents make the Johnson Lake leases more financially attractive to individuals who do not happen to hold a lease at Johnson Lake, and would like to. These individuals (who purchase an existing lessee's leasehold value in a lease) are being charged a premium to obtain the leases. In other words, new leaseholders end up paying market value for their newly acquired Johnson Lake leases, but a good share of the total payment over time goes to the current (selling) leaseholders (in the form of the lease assignment sales price) rather than to the CNPPID.

Put another way, tenants recognize that Johnson Lake is a desirable setting with a constrained supply of lots available. They also value the annual lease for a typical lot substantially higher than is currently charged by CNPPID. Therefore, when one tenant decides to sell either a vacant or a teardown lot (or a developed lot for that matter) they are able to attach a substantial price or value to that transfer, and there is a willing market to pay that price.

Based on the relationship outlined in the Lease Agreement that the annual lease fee is set at 5% of the market value of the lot, a generalized estimate of the average market value of a Tier 1 lot can be estimated from the appraised value of the transfers and current annual lease values. In the case of a (for instance) recent-year transfer, the appraised transfer value was (based on the 2007 appraisal) \$61,400 and the annual lease fee for the years of comparable leased sales examined in the appraisal was \$1,000. If the calculation of the lease fee is set at

$$\text{Annual Lease Fee} = \text{Market Value of lot} * 5\%$$

Then by extension, the market value is

$$\text{Market Value of lot} = \frac{\text{Annual Lease Fee}}{5\%}$$

However, we know from the substantial transfer prices for lots that the annual lease fee does not capture the fair market value of the lease, we must add the appraised value of those transfers to the equation above in order to estimate the fair market value of the lots.

$$\text{Market Value of lot} = \text{Appraised value of Average Transfer} + \frac{\text{Annual Lease Fee}}{5\%}$$

For the case of an average Tier 1 transfer in recent (2010-2015) years, the fair market value of the Tier 1 lot (the actual fee simple land value) is estimated as

$$\text{Recent Year Market Value of Average Tier 1 Lot} = \$61,400 + \frac{\$1,000}{5\%} = \$81,400$$

One complicating factor in estimating lot market values using the appraised value of Johnson Lake lot transfers lies in how those appraised values are derived. The appraisers rely on prices paid for vacant lot transfers and those prices are directly impacted by the lot values adopted by CNPPID, which are in turn based on similarly-derived earlier lot appraisal values. In essence there is a circular feedback loop where market values from previous years largely determine market values for the current year. There is no easy solution to avoiding this confounding situation while Johnson Lake appraisals are based on recent transfer prices for Johnson Lake leases.

2016 Value of a Tier 1 Johnson Lake Lot

The mathematical relationships in the preceding section can also be applied to the 2015 appraisal value and the annual lease rates that value was based on. The 2015 appraisal sets the average Tier 1 lot transfer value at \$86,600. As shown, this is the value of the transfer of the lease (leasehold value), and to arrive at the fair market estimated value of the lot (fee simple value), we must add in the component of lease value represented by annual lease payments to CNPPID. Therefore, the 2016 average estimated Johnson Lake Tier 1 lot market value is

$$\text{2016 Market Value of Average Tier 1 Lot} = \$86,600 + \frac{\$2,250}{5\%} = \$131,600$$

Clearly an estimated value of \$131,600 for a Tier 1 Johnson Lake lot is substantially higher than values estimated by the 2015 appraisal. This is due to the fact that the appraisals are only capturing a portion of the value of the lease and underlying lot value—that portion not captured by the annual lease fee.

A point of comparison is the appraised values for Johnson Lake lots by Gosper County.⁹ The Gosper County assessed lot values (Table 10) range from a low of \$70,000 to a high of \$190,000. These values are also based on the prices of Johnson Lake lease transfers, and thus have the same shortcomings as the CNPPID appraisals in regard to not capturing the full value of the underlying lots. One thing Gosper County does do is classify lots based on the linear feet of shoreline. While the large majority of Johnson Lake Tier 1 lots fall into the lowest category (less than 59 ft.), the county recognizes that lot leases with more lake frontage typically sell for substantially more.

TABLE 10. GOSPER COUNTY, NE ASSESSED LOT VALUES FOR JOHNSON LAKE

Lake Frontage	Lakefront	Low Water Lakefront	Bay Area
less than 59 ft	\$88,000	\$80,000	\$70,000
60 - 67.9 ft	\$102,000	\$95,000	\$84,000
68 - 85 ft	\$123,000	\$110,000	\$84,000
86 - 150 ft	\$180,000	\$160,000	\$144,000
over 150 ft	\$190,000		

A second individual point of evidence of the fair market value for Tier 1 lots comes from a recent (2015) sale of a deeded (not leased) lot on Johnson Lake. While privately owned lots on the lake are few, sales of these lots do happen occasionally. The lot which sold had lake frontage and, while vacant, had some associated infrastructure on the lot. Even assuming that a significant portion of the sales price was for existing infrastructure, the sales price for this lot “per foot of lakefront” was consistent with the estimated 2016 average value for a Tier 1 Johnson Lake lot of \$131,600.¹⁰

Based on the previous analysis, the CNPPID currently sets the market value of Tier 1 lots on Johnson Lake substantially below what might reasonably be considered the actual fair market value of the lots as revealed by lease transfer data and current lease fees. Fair market lease fees (in the context of the Johnson Lake lease language) are a function of both the market value of the lot and the 5% lease rate. Additionally, because lease sales prices are tied directly to expectations about future annual lease fees, there is a direct link between market value of the lots (lease transfers) and annual lease rates. For this reason any adjustment to market value must also include a close consideration of the appropriate lease percentage of market value.

⁹ Personal communication, Cheryl Taft, Gosper County Assessor. June 3, 2016.

¹⁰ Personal communication, Jim Brown, CNPPID. July 11, 2016.

4.0 ESTIMATION OF JOHNSON LAKE LEASE VALUE FROM LEASE TRANSFER DATA

Just as sales prices for transfers of vacant or teardown Johnson Lake lease lots can be used to inform estimation of the fee simple value of the lots (as discussed in the previous section), these lease transfer prices can also be analyzed to estimate how much in excess of the 5% annual lease rate leaseholders would be willing to pay for their leases as demonstrated by how much they were willing to pay another leaseholder to take over their lease.

4.1 Data and Analysis of Johnson Lake Site Transfers

Over the past two decades several researchers have adopted or endorsed an empirical model developed for estimating the implicit (revealed) market lease rate for a lot based on lease transfer prices (Duffield 1993, Knipe & Knipe 1998, Anderson & Watson 2010, Bioeconomics 2015). The economic model derives an estimate of the market lease rate for cabin sites when leases and their improvements are transferred/sold from the relationship between the leasehold value¹¹ associated with the sales and the appraised value of a given sample of leased cabin site lots. This statistical relationship was defined in Duffield's "Model 1" as

$$\text{Model 1} \quad i = R_0 \left(1 - \frac{L}{V}\right)^{-1}$$

Where:

- L = leasehold value
- R₀ = contract rental rate (5% at Johnson Lake)
- V = appraised lot value
- i = capitalization rate and market rental rate

Model 1, above, assumes that the capitalization rate (*i*) is equal to the market rental rate. Duffield also presented another model (Model 2) wherein the capitalization rate and market rental rate were not assumed to be equal. This model is defined as

$$\text{Model 2} \quad R_m = i \left(\frac{L}{V}\right) + R_0$$

Where:

- R_m = market rental rate
- i = capitalization rate

¹¹ Leasehold Value is defined as the sales price for the lease and associated improvements to the lot minus the appraised values of the improvements.

For Model 2, the capitalization rate may be a function of the consumer rate of time preference. As a proxy for i we use the year-specific average annual 30-year mortgage rate in the following analysis.

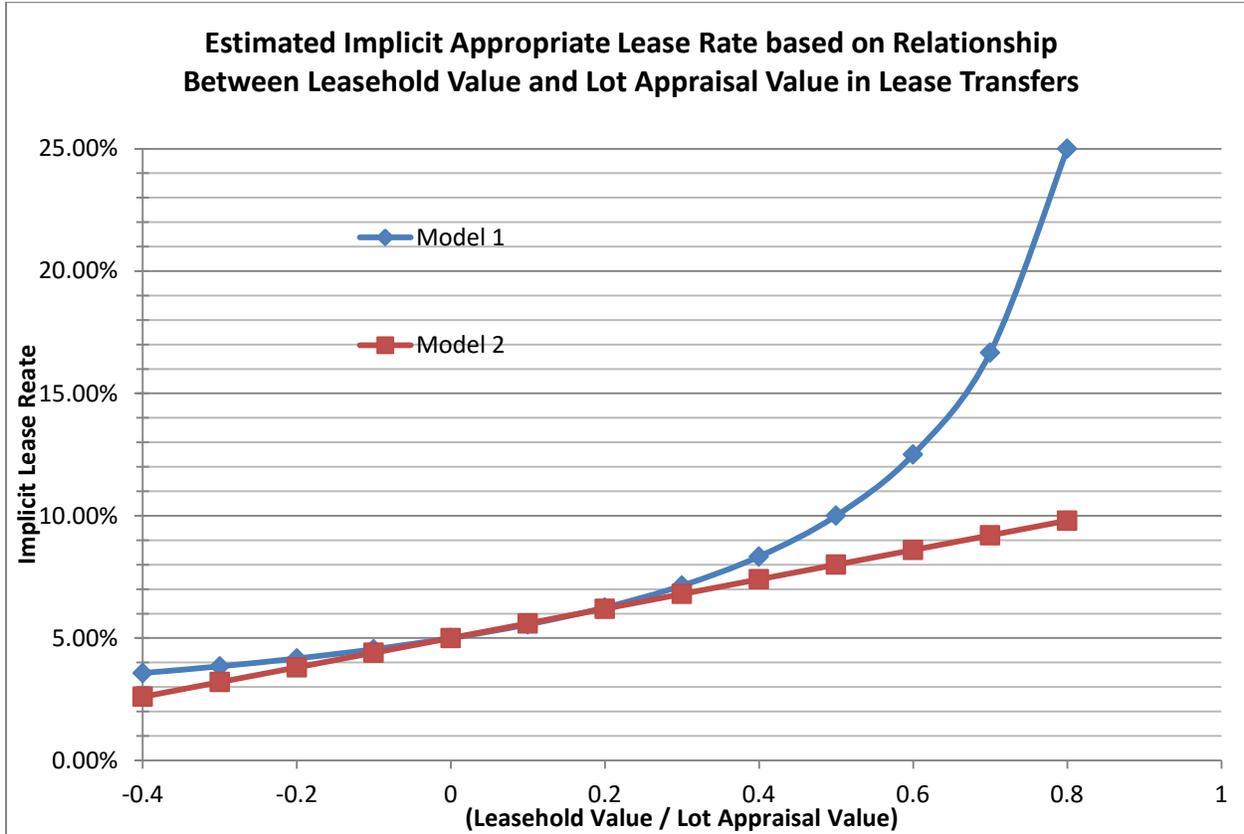


FIGURE 5. PLOT OF IMPLIED LEASE RATES FROM LEASEHOLD VALUE AND LOT VALUE DATA FOR DUFFIELD MODELS 1 AND 2

Figure 5 shows a plot of the implied values of i and R_m from Model 1 and Model 2 respectively for a range of L/V values from hypothetical lot transfer data. As can be seen from the plot of the functions, within a range of L/V ratios from about -0.1^{12} to 0.4 the implied market rental rates from the models are nearly identical. The greatest divergence between the two models is seen in L/V values above 0.5, where Model 1 implies much higher market rental rates than Model 2. Since nearly all of the Johnson Lake vacant/teardown transfers had L/V ratios over 1, in the following analysis of transfer data we use Model 2 as presenting the most conservative results. This choice has

¹² Negative L/V ratios occur when lots are transferred (sold) for less than the value of any improvements. In the case of the Johnson Lake vacant/teardown lease transfers, improvement values are assumed to be zero in all cases, thus no transfers have an L/V value that is less than zero.

the effect of conservatively estimating the implied market rental rate for transactions with high leasehold values relative to the appraised lot value.

Table 11 details all vacant/teardown Johnson Lake transfers of cabin site leases reported by CNPPID from 2002 to the present. The financial details of these transactions combined with the Model 2 estimation equation were used to estimate the fair market rental rate implied by each transaction. The transaction/transfer data for Johnson Lake cabin site leases from 2002 to 2015 suggests that over the entire period average full-market lease rates were in the range of 18%. There is, however, significant difference in average lease rates by year over this period.

TABLE 11. JOHNSON LAKE VACANT LOT AND TEARDOWN TRANSFER DATA: 2002-2015

Year	Sale Price	Tier	Land Prices (Sale Year CNPPID Values)	Sale Price/Sale Year Value	Implied Rental Value @ Sale Year Value
2002	\$ 52,000	1	20,000	2.600	20.2%
2002	\$ 295,000	1	20,000	14.750	90.9%
2003	\$ 47,500	1	20,000	2.375	18.8%
2003	\$ 60,000	1	20,000	3.000	22.5%
2003	\$ 125,000	1	20,000	6.250	41.4%
2004	\$ 78,500	1	20,000	3.925	27.9%
2005	\$ 74,000	1	20,000	3.700	26.7%
2005	\$ 51,500	1	20,000	2.575	20.1%
2005	\$ 55,000	1	20,000	2.750	21.1%
2006	\$ 37,500	1	20,000	1.875	17.0%
2006	\$ 84,000	1	20,000	4.200	31.9%
2006	\$ 17,500	1	20,000	0.875	10.6%
2007	\$ 62,000	1	20,000	3.100	24.6%
2008	\$ 44,000	1	28,333	1.553	14.4%
2008	\$ 40,000	1	28,333	1.412	13.5%
2008	\$ 58,000	1	28,333	2.047	17.3%
2008	\$ 62,500	1	28,333	2.206	18.3%
2008	\$ 49,900	1	28,333	1.761	15.6%
2008	\$ 40,000	1	28,333	1.412	13.5%
2008	\$ 100,000	1	28,333	3.529	26.3%
2009	\$ 90,000	1	36,667	2.455	17.4%
2010	\$ 51,000	1	45,000	1.133	10.3%
2010	\$ 45,000	1	45,000	1.000	9.7%

Year	Sale Price	Tier	Land Prices (Sale Year CNPPID Values)	Sale Price/Sale Year Value	Implied Rental Value @ Sale Year Value
2011	\$ 54,500	1	45,000	1.211	10.4%
2011	\$ 70,000	1	45,000	1.556	11.9%
2011	\$ 70,000	1	45,000	1.556	11.9%
2011	\$ 25,000	1	45,000	0.556	7.5%
2012	\$ 125,000	1	45,000	2.778	15.2%
2012	\$ 190,000	1	45,000	4.222	20.4%
2012	\$ 80,000	1	45,000	1.778	11.5%
2012	\$ 120,000	1	45,000	2.667	14.8%
2012	\$ 117,500	1	45,000	2.611	14.6%
2013	\$ 150,000	1	45,000	3.333	18.3%
2013	\$ 112,500	1	45,000	2.500	14.9%
2013	\$ 120,000	1	45,000	2.667	15.6%
2013	\$ 80,000	1	45,000	1.778	12.1%
2015	\$ 226,000	1	45,000	5.022	23.4%
2015	\$ 145,000	1	45,000	3.222	16.8%
2004	\$ 26,000	2	8,000	3.250	24.0%
2004	\$ 78,500	2	8,000	9.813	62.3%
2011	\$ 48,000	2	18,000	2.667	16.9%
2011	\$ 77,000	2	18,000	4.278	24.0%
2011	\$ 95,000	2	18,000	5.278	28.5%
2014	\$ 72,000	2	24,560	2.932	17.2%
2002	\$ 30,000	4	4,000	7.500	48.7%
2003	\$ 20,000	4	4,000	5.000	34.1%
2012	\$ 55,000	4	9,000	6.111	27.4%
2014	\$ 35,000	4	9,000	3.889	21.2%
2014	\$ 22,000	4	9,000	2.444	15.2%
2015	\$ 39,000	4	9,000	4.333	20.9%

Table 12 and Figure 6 show the average implicit full-market lease rates derived from the Johnson Lake vacant/teardown transfer data by year. Prior to 2008, average implied market lease rates were generally in the 20-25% range. The last four years (2011-15) have seen somewhat lower implicit market lease rates in the 15-17% range.

TABLE 12. AVERAGE IMPLIED FAIR MARKET LEASE RATES AT JOHNSON LAKE, BY YEAR

Year	Average of Implied Rental Value at Sale Year CNPPID Set Lot Value
2002	20.2%
2003	20.7%
2004	25.9%
2005	22.6%
2006	19.9%
2007	24.6%
2008	17.0%
2009	17.4%
2010	10.0%
2011	15.9%
2012	17.3%
2013	15.2%
2015	17.9%

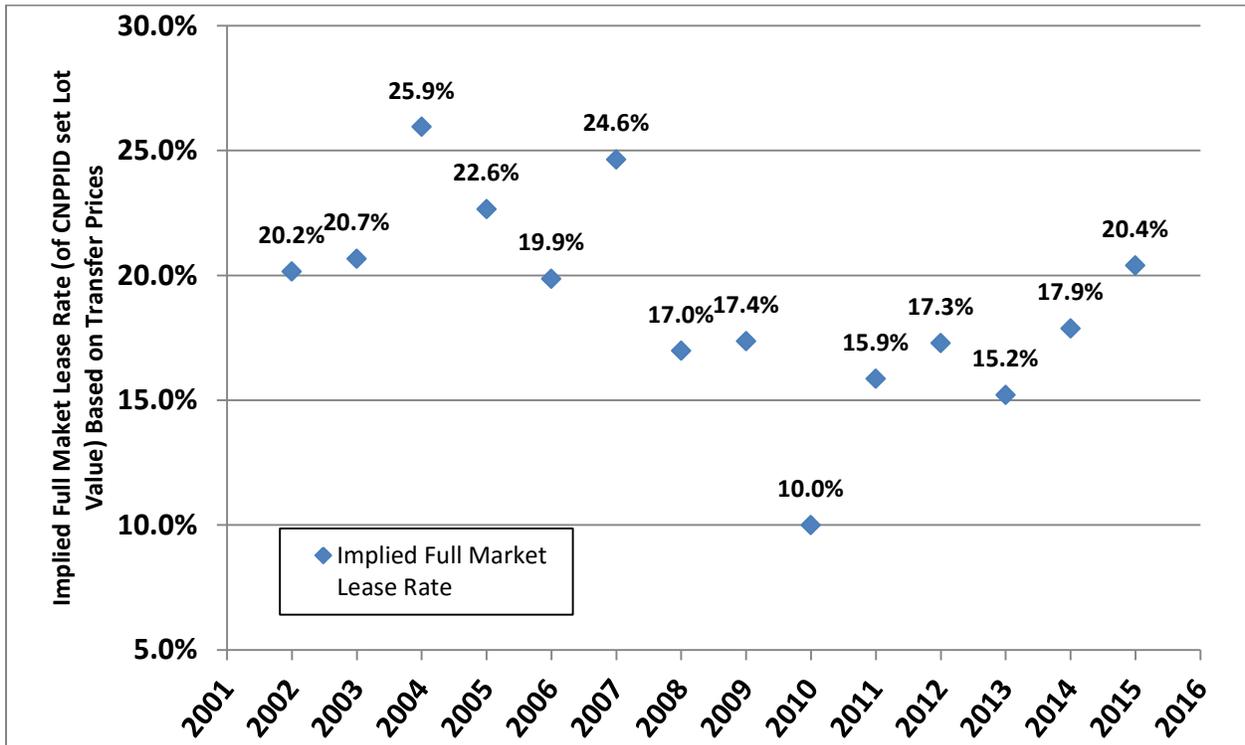


FIGURE 6. AVERAGE ANNUAL IMPLIED JOHNSON LAKE FAIR MARKET LEASE RATES: 2002-2015

A second set of Johnson Lake transfer data which can be used to estimate the implicit full-market lease rate for the lots comes from the Dawson County, NE Assessor’s Office. Dawson County uses the same methodology as CNPPID in assessing the value of lots at Johnson Lake—relying on the price of existing lease transfers as proxy for comparable lot sales. Table 13 shows the Dawson County records on Johnson Lake lease transfer sales within the county for the years 2014-2015. These sales differ from the vacant/teardown lease sales discussed earlier in that the Dawson County lots in the table were sold with improvements (which were separately appraised). The Dawson transfers also have higher land (lot) values than the CNPPID transfers shown earlier. This is because Dawson County does not adjust the appraised lot values downward, as is done in the case where CNPPID adopts a value below their initial appraisal. As was the case in Table 11, the final column of Table 13 shows the implied fair market annual lease rate calculated from the relationship between the leaseholder value and the lot value for each transfer.

Overall, the implied fair market lease rates from the Dawson data range from 8.1 to 37.4%. Excluding the three clear high-end outlier values from the table shows an average value of 11.7% for the 2014-15 period.

TABLE 13. GOSPER COUNTY JOHNSON LAKE TRANSFER DATA AND IMPLIED FAIR MARKET LEASE RATES, 2014-2015 (SOURCE: GOSPER COUNTY ASSESSOR’S OFFICE)

YEAR	SALE DATE	LAND VALUE	IMPROVEMENTS	PRICE	Leasehold Value/Land Value	Implied Fair Market Lease Rate
2014	4/15/2014	65,000	367,000	440,000	1.12	9.68%
2014	5/29/2014	65,000	251,800	325,000	1.13	9.69%
2014	6/13/2014	65,000	93,495	345,000	3.87	21.13%
2014	10/22/2014	55,000	216,875	285,000	1.24	10.16%
2014	11/14/2014	20,000	20,140	125,000	5.24	26.86%
2014	3/24/2014	55,000	156,562	216,550	1.09	9.55%
2015	4/15/2015	67,785	86,775	210,000	1.82	11.68%
2015	1/9/2015	74,765	138,010	265,000	1.70	11.24%
2015	6/5/2015	71,200	123,330	280,000	2.20	13.08%
2015	7/9/2015	55,000	118,600	215,450	1.76	11.47%
2015	8/4/2015	72,255	173,880	435,000	3.61	18.27%
2015	8/26/2015	65,000	164,600	220,000	0.85	8.13%
2015	8/28/2015	55,000	108,690	222,500	2.07	12.60%
2015	8/31/2015	27,049	181,451	420,000	8.82	37.40%
2015	9/21/2015	55,000	115,105	285,000	3.09	16.35%
2015	9/30/2015	65,000	140,560	242,500	1.57	10.76%

There are many reasons for the calculated implicit lease rates to vary substantially from transfer to transfer. Differences in the bargaining skills of the parties involved, the immediacy of the motivation of the buyer and the seller to complete the transaction, the depth of the market, expectations, and uncertainty associated with future appraisal values and lease fees all lead to variation in final transaction prices and associated implicit lease rates. Because of the natural variation in observed individual transactions, we examined the two groups of transactions in order to estimate mean implicit lease rates across multiple transactions and the associated variation in these estimated means (Table 14). Because mean value can be influenced by outlier values in relatively small samples, we have excluded obvious high-end outliers of the L/V ratio from the calculation of average lease rates.

The transaction/transfer data for CNPPID leases from 2002 to 2015 have a mean implicit lease rate of 18.1% (95% C.I. 16.3% to 19.7%). Based on a Dawson County Johnson Lake transfers from 2014-15 we estimate the full-market lease rate for CNPPID cabin site leases to range from 10.0% to 13.5% of full appraised value, with a mean of 11.8%. The analysis of implicit lease rates assumes that for both vacant and teardown CNPPID lot transfers the value of improvements transferred is zero. However, in some cases there may be some unquantified residual value of improvements such as outbuildings that are retained, or SID payments previously made. For this reason, in the calculation of implied annual lease fees we use the lower 95% confidence interval of the implicit lease rate in order to provide a additionally conservative interpretation of the full market lease rates implied by the CNPPID transfer data.

TABLE 14. ESTIMATED IMPLICIT FULL-MARKET LEASE RATES, BY SOURCE OF TRANSFER DATA.

Source of Transfer Data	Sample Size (number of transfers)	Mean Implicit Full-Market Lease Rate	Lower 95% C.I. of Mean^a	Upper 95% C.I. of Mean
CNPPID Tear-Down and Vacant transfers (based on sale year appraised land value) (excludes 5 highest L/V ratio sales)	45	18.1%	16.3%	19.7%
Dawson County Assessor's Office (2014-15 Johnson Lake Sales, excluding the 3 highest L/V ratio sales)	13	11.8%	10.0%	13.5%

^a "C.I." indicates confidence interval. Specifically, the 95% C.I. is the interval which we would expect any observed value of an implicit full market lease rate to fall 95% of the time.

The differences between the CNPPID and the Dawson County estimates (18.1% vs. 11.8%) is largely due to the different base lot values used in the implicit lease rate calculations. Additional difference is due to variations in the characteristics of the lot leases sold in each sample.

Clearly, both the implied fair market lease rates from the CNPPID vacant/teardown data and the Dawson County sales data are significantly higher than the 5% lease rate specified in the Johnson Lake lot lease contracts. The Dawson County average rate for 2014-15 (11.8%) is not outside rates cited in the literature (Bioeconomics 2015, Knipe & Knipe 1998, DNRC 2009) either in absolute terms or in consideration of the appraised values of lots not incorporating all of the lot value. The CNPPID vacant/teardown average rate of 18.1% is very high in comparison to examples of lease rates cited in past studies and the literature. This however, is likely due to a number of clear issues with how Johnson Lake lots are appraised and valued for lease purposes and buyer expectations about future lease fee levels.

The clear conclusion from the available data is that based on leaseholder willingness to pay to buy Johnson Lake leases, the current combination of the CNPPID-set lot value and the 5% annual lease rate results in an annual lease fee to CNPPID that is substantially below what would be considered a full-market lease value.

5.0 FINDINGS, RECOMMENDATIONS, AND STUDY LIMITATIONS

5.1 Study Findings

A review and analysis of the history of lease rates at Johnson Lake and the specifics of rate setting, appraisal methods, and recent vacant or teardown lot transfer sales shows that lease fees at Johnson Lake have been and are currently set substantially below full-market value for the leases.

In recent years, sales of vacant/teardown leases have been for substantial and increasing prices. This trend in lot lease sale prices is fueled by substantial demand for the leases combined with below market lease fees and the expectation among buyers that lease fees will remain below market levels. Table 15 shows a comparison of the calculation of annual Tier 1 lease fees based on several analysis methods. Line 1 shows the current annual fee for Tier 1 lots (\$2,250). This is based on the Board of Directors of the CNPPID accepting a lot value that was roughly 73% of the 2007 appraised value.

TABLE 15. COMPARISON OF ALTERNATIVE ESTIMATES OF MARKET VALUE OF CURRENT JOHNSON LAKE TIER 1 LEASE RATES.

	Estimate Basis	Lot Value	Annual Lease Rate	Annual Tier 1 Fee
1	<i>Current (2007 appraisal) Tier 1 Lease fee</i>	<i>45,000</i>	<i>5%</i>	<i>\$2,250</i>
2	Assessment based on full 2007 <u>appraised</u> Tier 1 value	61,400	5%	\$3,070
3	Assessment based on 2007 appraisal calculated <u>actual total</u> lot value (fee simple)	81,400	5%	\$4,070
4	Assessment based on lower bound (95% CI) implied lease rates from vacant/teardown transfers	45,000	16.30%	\$7,335
5	Assessment based on 2014-15 Dawson County Transfers and County lot values and lower bound (95% CI) implied fair market lease rate	63,286	10%	\$6,329
6	Average of Fair market value estimates (lines 3,4, and 5)			\$5,911

As was discussed above, however, the 2007 appraised Tier 1 lot value only included the leasehold value of the lot and was approximately \$20,000 less than the estimated full (fee simple) value of the

lot. Therefore the annual lease fee of \$2,250 was approximately 55% of a lease fee based on 5% of the fee simple (fair market) value of the lots.

Evidence from lot transfers (both vacant/teardown transfers reported by the CNPPID and developed site transfers reported by Dawson County) show a willingness to pay even higher annual lease fees for Tier 1 lots (between \$6,300 and \$7,300).

Based on the fair market lease fees for Tier 1 lots from the estimated fee simple average lot value and the imputed values from lease transfers, we estimate that current Tier 1 annual fees are currently set between 30% and 55% of fair market value.

It is unambiguous from the available data that current rates (and rates for at least the past 10 years) are significantly lower than what fair market rates at Johnson Lake would be. This finding is underscored by the fact that there is essentially zero vacancy of lease lots at the lake.¹³

The purpose of this analysis is to assist the CNPPID in determining the fair market lease rate for Johnson Lake lots based on the recent 2015 lot appraisal and other available data. The 2015 appraisal estimated that the leasehold value of Tier 1 transfers was \$86,600. This implies that the fee simple value of these lots is on average \$131,600. Based on the Johnson Lake lease contract language, annual Tier 1 lease payments are to be set at 5% of the fee simple value, or \$6,580 per year (Table 16).

TABLE 16. COMPARISON OF ALTERNATIVE ESTIMATES OF MARKET VALUE OF JOHNSON LAKE TIER 1 LEASE RATES BASED ON 2015 APPRAISED LOT VALUES

	Estimate Basis	Lot Value	Annual Lease Rate	Annual Tier 1 Fee
1	Assessment based on 2015 appraisal calculated <u>actual total</u> lot value (fee simple)	131,600	5%	\$6,580

There is a relationship between the extent to which lease fees are undervalued and the prices buyers are willing to pay for the leasehold interest (lease only—no improvements) in a Johnson lake lot lease. The more lease rates are underpriced, the more buyers are willing to pay to purchase leases. A corollary to this relationship is the fact that the leasehold value of a lot lease to a current owner is inversely related to the annual lease fee. If lease fees were to suddenly increase dramatically, the “value” of the leasehold interest of current lessees would fall by some degree. However the lease terms are explicitly laid out in the District lease contract, and there is no promise by the District that lease fees will remain at well below market levels. Therefore, those purchasing leases made investment decisions based on their own assumptions about future lease rates rather than any assurances from the District.

¹³ Personal Communication, Jim Brown, CNPPID. June 8, 2016.

Recommendation

Considering the data on historical Johnson Lake lot lease rates, appraisals, lot transfers, vacancy rates, and examples from comparable settings, we conclude that:

1. The average fair market fee simple value of a Johnson Lake Tier 1 lot is approximately \$131,000 (2015 value);
2. Considering the characteristics of Johnson Lake leases as compared to a wide range of other lease settings, the standard 5% of fair market appraised value annual lease fee is an appropriate lease percentage;
3. Based on the estimated average Tier 1 fair market (fee simple) value of Johnson Lake lots, along with additional supporting evidence from lease transfers and leases in comparable settings, the fair market annual Tier 1 lease fee is estimated to be in the range of \$6,300 to \$7,300.

QUALIFICATIONS

This report was developed by Bioeconomics, Inc. The principals in this firm include Dr. John Duffield (Yale PhD. Economics 1974), Chris Neher (MA Economics, University of Montana 1989), and Dr. David Patterson (University of Iowa, PhD. Statistics, 1983). This research team's area of specialization within natural resource economics is in the valuation of the services provided by market and nonmarket resources. Their prior most closely related work includes a suite of fair market value studies undertaken for the then, MT Department of State Lands in the early 1990s, including grazing leases, cropland, cabin rentals and recreation use. That work has since been relied on by the courts in several landmark cases, for example relating to cabin leases in Montana Supreme Court cases that have come to be known as *Montrust I*, and *Montrust II*.

Duffield and Neher also updated the 1990s lease fee studies for the State of Montana in 2011 and 2015 (Grazing and Cabin site leases). Neher served as an expert witness for the State of Idaho 2015-2016 Grazing Fee review Board. This research team also recently completed a study for Montana DNRC to develop methodologies to assess an annual lease fee, whereby State Trust Lands may be utilized for recreational purposes

Other closely related work includes serving as the economics expert witness for the Montana Attorney General in *PPL Montana, LLC v. State of Montana*. In that case the district court relied on Dr. Duffield's theory and findings of facts with respect to the fair market rental for hydropower use of state trust lands. Other related work includes assisting the Montana Natural Resource Damage Program over the last 20 years in valuation of foregone recreation values and groundwater services in the context of the Clark Fork Superfund cases (*Montana v. Arco*) as well as similar issues recently resolved (2008) concerning the Mike Horse Dam and E. Helena smelter, all of which resulted in significant settlements for the state. In addition to their work for the State of Montana, Bioeconomics has and continues to work for many other clients including other state agencies, numerous Tribes, and the Federal land management agencies including the National Park Service, Bureau of Indian Affairs, US Fish and Wildlife Service, United States Geological Survey, US Forest Service, and the National Oceanic and Atmospheric Administration.

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APPENDIX A: JOHNSON LAKE TIER I LEASE AGREEMENT

APPENDIX B: 2000-2015 JOHNSON LAKE LOT APPRAISAL
SUMMARIES