Parks & Recreation Facility Costs Calculation - "Facility Unit Service Capacity" vs. "Square Footage"

I. Introduction:

The Parks & Recreation industry had long attempted to determine facility room and/or park space costs. The methodologies employed by an agency can vary widely (if one is put in use at all) when calculating either rental or program facility use costs for programs/courses that take place at a park or recreation facility. Most often an agency will use the total square footage (or acres) calculation. A better, and even more accurate, method is to determine a ***Facility Unit Service Capacity*** cost.

This article will discuss two (2) viewpoints of calculating facility/park cost –current methods or *Square Footage* and future methods or *Facility Unit Service Capacity.*

II. Current Methodology:

A. **What is the Square Footage calculation?**

   i. Simply put, the square footage calculation for a facility takes the total facility cost and divides it by the total square footage of a facility (or acres for a park). For example, the total cost to operate a facility is $1,000,000.00 and the total square footage of a recreation center is 50,000 sq. ft. From this calculation we then get the square footage cost to be $20.00 a square foot. Then, if, say a multipurpose room is 1000 sq. ft., the cost is $20,000.00 a year to operate this specific room. How the per hour cost is determined can vary but essentially you can divide the $20,000 by the number of hours the room is open or booked (rented or used for a program or course) a year. (Note – if your agency is using the square footage calculation, minimally you should use booked hours over open time hours for better accuracy.) For example, if the room is booked for 500 hours in a year, then the hourly costs would be $40.00 per hour. There are of course other methods or ways to get to the final cost using square footage. The above is just one example.

B. **What are the concerns with this type of calculation?**

   i. **Non-programmed or Non-public spaces** – if your agency were to use the square footage calculation, you should account (delete from the total) for the square footage that is non-programmed or non-public. For example, hallways, closets, offices, mechanical rooms, etc. square footage should be ***eliminated*** from the total square footage before you divide it by the total costs.

   ii. **Booked time vs. Open Time costs** – as hinted to above, most often an agency will use the Open Time of a facility space to divide the room costs to get an hourly cost. If the square footage calculation is used, then for more accurate costs, it is better to use

the number of hours the facility space is Booked. This will then give a more accurate hourly cost then just using the Open Times of the facility space.

iii. **Usage Level of Space** – what the square footage facility cost calculation does not account for is the number of users in a space. Why is this important? Because the more users, or heaviness of use, can determine the amount or level of costs to maintain the space. For example, a pool per square foot cost much more than a multipurpose room to maintain.

iv. **Activity Use of Space** – what the square footage facility cost calculation does not account for is the type of activity in a space. As with the Usage Level of a space, the type of activity that uses the space effects the maintain level as well. For example, premier soccer fields versus practice soccer fields.

C. **Is the Square Footage calculation outdated?**

i. The parks and recreation industry is being held more and more accountable as to determining costs to offer services – think cost recovery modeling. While the square footage calculation can assist getting to a number that helps reflect total costs to operate or offer services, it lacks any refinement at getting to a better or more reflective per hour cost. None of the functional variables listed above are considered in the calculation thus misrepresenting the final per hour cost. It is time the parks and recreation industry had a more accurate and functional method for determining per hour facility costs.

III. The Future:

Before we jump right into the Facility Unit Service Capacity calculation, let's first discuss some nomenclature of a facility.

A. **What is a Facility Unit?**

i. To employ the Facility Unit Service Capacity calculation, your agency will first want to break down all your facility spaces into the smallest, divisible, usable space within a facility or down to a "Facility Unit" level. To further explain what a Facility Unit is, we will first look at some facility nomenclature that defines all the spaces within a facility or park. This nomenclature has been used widely in the parks and recreation industry and accounts for all aspects of facility space where services (rentals, programs, events) take place.

ii. Example **Facility Nomenclature – hierarchical format, high to low:**

1. Facility Category = Recreation Centers, Outdoor Pools, Sport Complexes
2. Facility Service Area = North Recreation Center, South Recreation Center, North Pool, South Pool, North Soccer Field, South Soccer Field (Facility Service Area should be tied to expenses)
3. Facility Type = Multi-purpose Room, Pool, Specialized Room, Sports Fields
4. Facility Activity Area = Gym, Lap, Climbing Wall, Soccer Field
5. **Facility Unit** = 1/2 Gym, Lane, Wall, Field

6. Facility Unit Count = number of Units (Units are the smallest divisible usable space)

For a visual representation of the above, see Table 1 below:

Table 1 - **Hierarchical Representation for Facility Breakdown**

Hierarchical Representation for Facility Breakdown		
Facility Category =	Recreation Centers, Outdoor Pools, Sport Complexes	**Highest Level**
Facility Service Area =	North Recreation Center, South Recreation Center, North Pool, South Pool, North Soccer Field, South Soccer Field	
Facility Type =	Multi-purpose Room, Pool, Specialized Room, Sports Fields	
Facility Activity Area =	Gym, Lap, Climbing Wall, Soccer Field	
Facility Unit =	1/2 Gym, Lane, Wall, Field	
Facility Unit Count =	Number of Units	**Lowest level**

iii. As can been seen by the table above, by breaking down your facilities into a hierarchical representation, this will help determine all the "Facility Units" within a specific facility.

iv. To reinforce the concept of what a Facility Unit is, it is the smallest, divisible, usable space within a facility. For example, if there is an eight (8) lane lap pool, each lane is a Facility Unit, or if there is a full gym but your agency uses or rents ½ of the gym, then ½ gym is the Facility Unit.

B. **So what exactly is "Facility Unit Service Capacity"?**

i. Facility Unit Service Capacity can be defined as "the number of people a Facility Unit can hold at either the activity size (Facility Unit is a Soccer Field - Facility Unit Service Capacity = **22** for 11 people per team) or instruction capacity (Learn to Swim course in a Facility Unit of a Leisure Pool Pod – Facility Unit Service Capacity = **4** people due to instruction level). This is *not* fire code capacity but "who you charge" to use the facility."

ii. Determining the Facility Unit Service Capacity itself can be a whole separate project for your agency. To assist in this endeavor, below are a few aspects to keep in mind, listed in descending order:

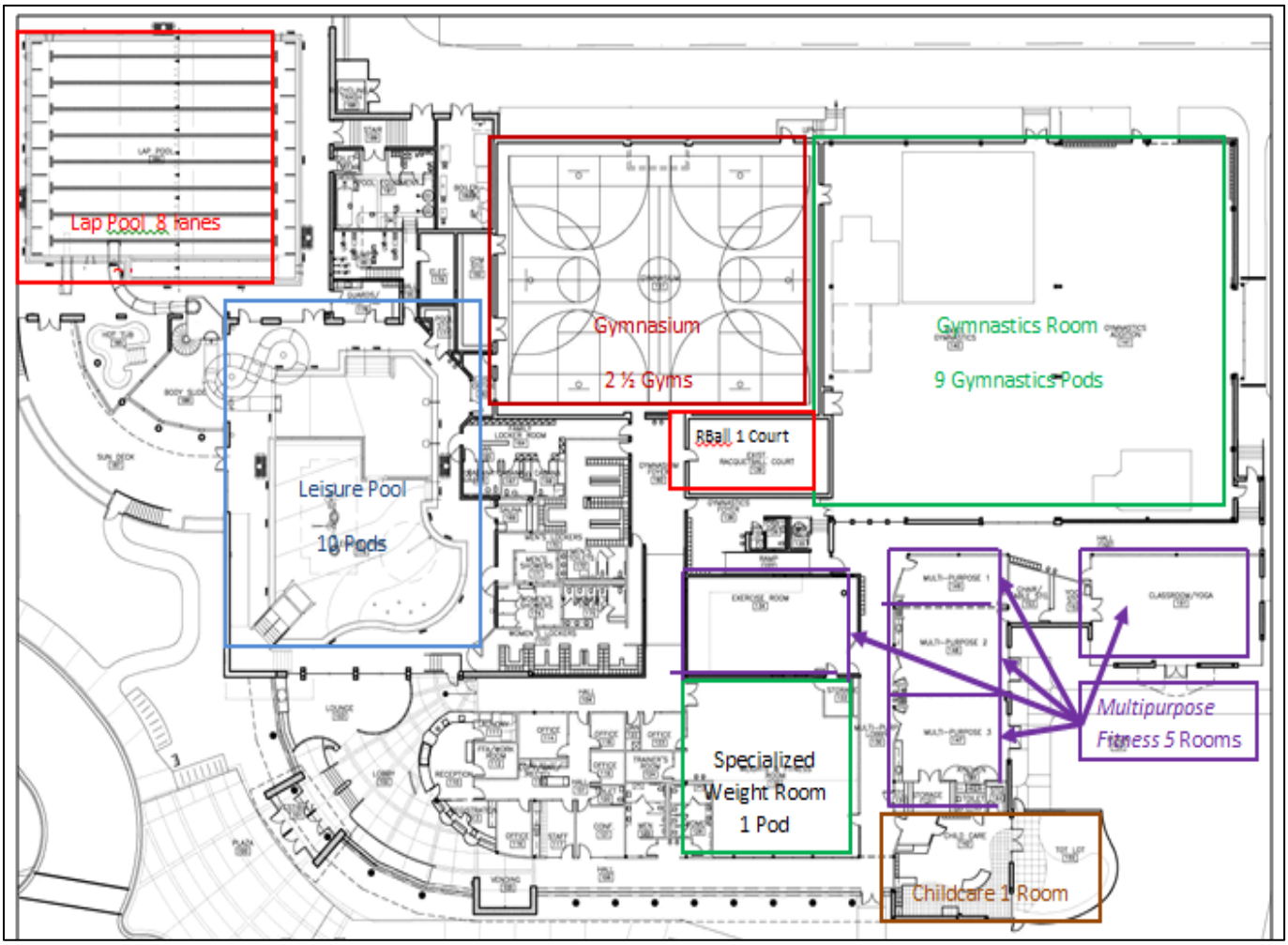
1. Type of activity using the Facility Unit
2. Instruction level of the service using the Facility Unit
3. Maintenance/Custodian level needed for Facility Unit
4. Default to the type of activity the uses the Facility Unit the most

iii. So how would this all look in a sample recreation center? The table below (along with Graphic 1 – a visual representation of the data below) is an example of both the hierarchical breakdown ***with*** sample Facility Unit Service Capacity's.

Table 2 - Sample breakdown of a facility with Facility Unit Service Capacity

Facility Category	Facility Service Area	Facility Type	Facility Activity Area	Facility Unit	Facility Unit Count	Facility Unit Service Capacity
Centers	North Recreation Center	Multipurpose	Child Care Room	Room	1	10
Centers	North Recreation Center	Multipurpose	Fitness	Room	5	20
Centers	North Recreation Center	Specialized Facility	Gymnastics Room	Pod	9	8
Centers	North Recreation Center	Specialized Facility	Weight Room	Pod Wt Rm	1	10
Centers	North Recreation Center	Sports Complex	Gymnasium	Half Gym	2	10
Centers	North Recreation Center	Sports Complex	Racquetball	Court	1	2
Centers	North Recreation Center	Swimming Pool	Lap	Lane	8	8
Centers	North Recreation Center	Swimming Pool	Leisure	Pod Leisure	10	10

Graphic 1 – Visual Representation of Recreation Center Breakdown (See Table 2)



C. What is the Facility Unit Service Capacity calculation?

i. After first understanding what a Facility Unit is and what the Facility Unit Service Capacity is, we can now look at what the Facility Unit Service Capacity calculation is for determining per hour facility costs. Before we get too far into the calculation, we will first need to get some historical data.

ii. Historical Data needed for the Facility Unit Service Capacity calculation:

1. The first step is to create the facility breakdown to the Facility Unit level (see above)
2. Using the example from above, we will now need
    a. The total number of facility units or Facility Unit Count by each Facility Unit
    b. The Facility Unit Service Capacity by each Facility Unit
    c. The number of Hours Open per Day by each Facility Unit (a caveat here is to determine the hours "used" and not necessarily "open")
    d. The number of Days Open per Year by each Facility Unit
    e. The total cost to operate the entire facility for one year

iii. Now the fun part… the calculation. (If you wish, you can jump to Table 3 to see a visual representation of the calculation step by step.) After you have gathered the data on each Facility Unit, we can now start to calculate:

1. Step 1 – Find the Per Unit Usage Hours
    a. Multiply the Hours Open per Day by Days Open per Year
2. Step 2 – Find the All Units Usage Hours
    b. Multiply the Per Unit Usage Hours by the Facility Unit Count
3. Step 3 – Find the Total Facility Unit Service Capacity Usage Hours
    c. Multiply the Facility Unit Service Capacity by the All Units Usage Hours
4. Step 4 – Find the % of Facility Unit Usage Hours (% of the whole)
    d. First, find the total of the Total Facility Unit Service Capacity Usage Hours
    e. Second, divide the Total Facility Unit Service Capacity Usage Hours by the total of the Total Facility Unit Service Capacity Usage Hours. This will be a percentage (total will equal 100%).
5. Step 5 – What is the Total Cost of the Facility?
6. Step 6 – Find the Facility Unit Total Cost
    f. Using the percentage from Step 4.e, multiply this percent by the Total Cost of the facility. This will give you the Total Cost of the Facility Units based on Facility Unit Service Capacity.
7. Step 7 – Find the Facility Unit Total Cost per Facility Unit
    g. Divide the Facility Unit Total Cost in Step 6 by the Facility Unit Count
8. Step 8 – Find the Facility Unit Total Per Hour Cost
    h. Using the data from Step 7, divide the Facility Unit Total Cost per Facility Unit by Per Unit Usage Hours.
9. Step 9 – Find the Facility Unit Total Cost per Facility Unit per Hour per Person

i. Using the data from Step 8, divide the Facility Unit Total Per Hour Cost by Facility Unit Service Capacity

   a. *Note – This dollar amount will be the same for all Facility Units and this is a good thing. This data gives you a baseline as to determine what it costs each person per hour to use any part of your facility. This data can be used across the board in rental costing, program facility use costing, and even membership/daily drop-in costing.*

   b. Table 3 represents a visual view of the Facility Unit Service Capacity calculation.

Table 3 – Visual Representation of the Facility Unit Service Capacity Calculation

(Note: The Facility Category is omitted in the example below)

Facility Service Area	Facility Type	Facility Activity Area	Facility Unit	Facility Unit Count	Facility Unit Service Capacity	Facility Unit Hours Open per Day	Facility Unit Days Open per Year
North Recreation Center	Multipurpose	Child Care Room	Room	1	10	4.5	352
North Recreation Center	Multipurpose	Fitness	Room	5	20	4	352
North Recreation Center	Specialized Facility	Gymnastics Room	Pod Gymnastics	9	8	6	352
North Recreation Center	Specialized Facility	Weight Room	Pod Wt Rm	1	10	13	352
North Recreation Center	Sports Complex	Gymnasium	Half Gym	2	10	14	352
North Recreation Center	Sports Complex	Racquetball	Court	1	2	14	352
North Recreation Center	Swimming Pool	Lap	Lane	8	8	13	352
North Recreation Center	Swimming Pool	Leisure	Pod Leisure	10	10	13	352
				Step 1	**Step 2**	**Step 3**	**Step 4**
Facility Service Area	**Facility Type**	**Facility Activity Area**	**Facility Unit**	**Per Unit Usage Hours**	**All Units Usage Hours**	**Total Facility Unit Service Capacity Usage Hours**	**% of Facility Service Area Usage Hours**
North Recreation Center	Multipurpose	Child Care Room	Room	1584	1584	15840	1%
North Recreation Center	Multipurpose	Fitness	Room	1408	7040	140800	12%
North Recreation Center	Specialized Facility	Gymnastics Room	Pod Gymnastics	2112	19008	152064	13%
North Recreation Center	Specialized Facility	Weight Room	Pod Wt Rm	4576	4576	45760	4%
North Recreation Center	Sports Complex	Gymnasium	Half Gym	4928	9856	98560	8%
North Recreation Center	Sports Complex	Racquetball	Court	4928	4928	9856	1%
North Recreation Center	Swimming Pool	Lap	Lane	4576	36608	292864	24%
North Recreation Center	Swimming Pool	Leisure	Pod Leisure	4576	45760	457600	38%
					Totals	**1213344**	**100%**
				Step 5	**Step 6**	**Step 7**	**Step 8**
Facility Service Area	**Facility Type**	**Facility Activity Area**	**Facility Unit**	**Total Cost of Facility**	**Facility Unit Total Cost**	**Facility Unit Total Cost per Facility Unit**	**Facility Unit Total Per Hour Cost**
North Recreation Center	Multipurpose	Child Care Room	Room		$13,054.83	$13,054.83	$8.24
North Recreation Center	Multipurpose	Fitness	Room		$116,042.94	$23,208.59	$16.48
North Recreation Center	Specialized Facility	Gymnastics Room	Pod Gymnastics		$125,326.37	$13,925.15	$6.59
North Recreation Center	Specialized Facility	Weight Room	Pod Wt Rm		$37,713.95	$37,713.95	$8.24
North Recreation Center	Sports Complex	Gymnasium	Half Gym		$81,230.06	$40,615.03	$8.24
North Recreation Center	Sports Complex	Racquetball	Court		$8,123.01	$8,123.01	$1.65
North Recreation Center	Swimming Pool	Lap	Lane		$241,369.31	$30,171.16	$6.59
North Recreation Center	Swimming Pool	Leisure	Pod Leisure		$377,139.54	$37,713.95	$8.24
			Totals	**$1,000,000.00**	**$1,000,000.00**		

				Step 9
Facility Service Area	**Facility Type**	**Facility Activity Area**	**Facility Unit**	**Facility Unit Total Cost per Facility Unit per Hour per Person**
North Recreation Center	Multipurpose	Child Care Room	Room	$0.82
North Recreation Center	Multipurpose	Fitness	Room	$0.82
North Recreation Center	Specialized Facility	Gymnastics Room	Pod Gymnastics	$0.82
North Recreation Center	Specialized Facility	Weight Room	Pod Wt Rm	$0.82
North Recreation Center	Sports Complex	Gymnasium	Half Gym	$0.82
North Recreation Center	Sports Complex	Racquetball	Court	$0.82
North Recreation Center	Swimming Pool	Lap	Lane	$0.82
North Recreation Center	Swimming Pool	Leisure	Pod Leisure	$0.82

IV. Conclusion:

The parks and recreation industry has too long relied on an outdated methodology for calculation facility costs. The *Square Footage* calculation, while useful, does not accurately reflect the number of users OR the type of activity taking place within a facility space. The *Facility Unit Service Capacity* calculation, while possibly a little more up front work, will more truly reflect the facility space costs.