J.R. Huston Enterprises, Inc.

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[CT] Chapter 38

[CT] The Six Most Common Methods for Pricing Jobs

[CT] Key Terms

Dual Overhead Recovery System (DORS)
Factoring method
Hindsight markup factor
Market-driven unit pricing (MDUP)
Multiple Overhead Recovery System (MORS)
Multiplier method
Overhead and Profit per Hour (OPPH)
Single Overhead Recovery System (SORS)

[OH] **PURPOSE**: To explain the six most commonly used methods in the market today for pricing green industry work

[OH] **INTRODUCTION**

Estimating is the science of determining what a project costs. Once we identify these costs, we then add margins and markups to them to arrive at a final price for the project. *Bidding* is the process of adding margins and markups to the identified costs of a project to arrive at a *final price* for it.

There are many methods used to price jobs. We'll cover six common ones used today in the marketplace. The important thing to keep in mind is to first correctly identify all costs, both direct and indirect. This determines the break-even point for a job. Then you add net profit and a contingency factor (if used) to the break-even point.

As we begin our analysis of these six methods, we'll refer to the two jobs in Figure 38.1 that will serve as examples.

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Table 38.1: **Jobs A & B Information**

	Job A	Job B
Materials	$100,000	$ 40,000
Labor with labor burden	15,000	60,000
Equipment	5,000	20,000
Subcontractors	0	0
Total direct costs	$120,000	$120,000
G&A OPH	$10.00	$10.00
PPH (if used)	$5.00	$5.00
Labor hours	1,000	4,000
CAW w/33% labor burden	$15.00	$15.00

Total company G&A overhead per calendar month	$10,000
Total company field payroll per calendar month with labor burden	$15,000
Job A duration	One calendar month
Job B duration	Four calendar months

[A] **1. The Factoring or "Multiplier" Method**

Using the **factoring method**, or sometimes called the **multiplier method**, we simply multiply estimated material costs (or estimated material and labor costs) by a "factor." The factor may be based on past Profit & Loss statements, or may be a number "arrived" at as a result of monitoring past competitive bidding situations.

The rationale is: If you ended a previous calendar or fiscal year with a sufficient net profit, and if material costs were 33 percent of your gross sales for that year, then all you have to do is multiply material costs for the new year by a factor of 3.0. Supposedly, this will produce prices that will cover all costs and insure sufficient net profit.

Sales taxes, field-labor burden, net profit and G&A overhead are all included in the factor used. A contingency factor may be applied to the job if desired. However, that's not always the case.

The flaws in this method are almost too numerous to mention – but it's surprising how many landscape and irrigation contractors bid their work using this "material-times-two" approach.

***** **Main point:** The flaws in this method are almost too numerous to mention – but it's surprising how many landscape and irrigation contractors bid their work using this "material-times-two" approach. *****

The only variables that are addressed in this method are:

- The amount of materials
- The factor

Unfortunately, it doesn't address the multitude of other variables that can, and usually do, apply to the jobs you bid. Just some of the many items that may change from job to job and that need to be dealt with separately in the estimating process are:

- General conditions
- Net profit markup
- Site conditions (soil conditions, access, time of year/weather, etc.)
- Expensive vs. inexpensive materials (with the same labor production rates)
- Size of crew
- Types of equipment
- Subcontractors
- Labor rates
- Etc.

The Factoring method has its roots in the retail (as well as wholesale) supplier industry. To arrive at the price to charge customers, purchased goods are marked up by a "factor," or "multiplier." It's commonly used by smaller, unsophisticated nurseries that must purchase the bulk of their nursery stock and irrigation supplies.

Because these smaller companies don't experience the wild fluctuations in types of materials, labor, equipment, subcontractors, site conditions, etc., this uncomplicated method can work in a very non-dynamic situation. However, once you leave this extremely controlled environment and enter the landscape and irrigation contracting arena, where chaos tends to be the norm, the factoring method immediately breaks down.

Unfortunately, it's usually the owners of nurseries who fall victim to this mistake when, instead of just selling plants and supplies, they decide to install these plants for their customers. Factoring worked for them in the past, in the nursery business. Why not use it for contracting?

Irrigation suppliers tend to reinforce the application of this pricing method in the landscape and irrigation industry. That is, in some parts of the country, irrigation vendors obtain sets of plans for work being bid in their area. They'll then do the takeoff and provide irrigation takeoff quantities and costs to the various contractors bidding on the job.

This is bad enough, but pricing advice (in the form of suggested factors) is often offered, as well – saying, for instance, that residential irrigation systems may have a suggested factor of 2.0 to 2.2, while commercial work has one ranging from 1.8 to 2.0, or that the suggested factor for golf course materials may range as low as 1.65 to 1.8.

Unfortunately, these factors have little to do with specific jobs. They only address general trends.

CPAs, also, sometimes enter the factor-pricing picture (though, more often than not, their recommendations lean toward the GPM (gross profit margin) method).

My point is this: Pricing methods vary in their application. Some methods work well in one environment, but not in another. Factoring may be of limited use in a retail or supplier/vendor environment – but not in contracting. *Do not* use it to determine your prices.

There is, however, another tool called a **hindsight markup factor** we use to help evaluate our competition. We call it hindsight, because we calculate it *after* we've priced the job correctly, taking into account all costs and markups.

In your next competitive bid situation:

- Determine your Phases I and II direct costs
- Add the appropriate markups and margins to determine your price
- Divide the price by the material costs

This will give you your "hindsight" markup factor.

If your competitors are using the factoring method, track their bids and attempt to determine the factors they're using.

******* How it works – start *******

A commercial irrigation client tracked a competitor's bids and discovered the competitor was consistently using a 2.05 multiplier. Once our client had identified the factor, he was able to adjust his own bids to beat it. He knew he could reduce his net profit margin only slightly to beat his competitor's 2.05 factor, and not hurt himself by doing so.

The decision to lower his price was based on sound analysis, accurate budgeting and estimating systems, and methodologies, not on some subjective factor. He knew he could play his competitor's game, beat him and survive. He cut his price, not his throat.

Another client, on the East Coast, was bidding a planting job. Plant materials on this job cost $6,000. With a 10 percent net profit margin (NPM), the estimate would total right at $10,000. It was a good bid, and he was confident of his production rates and price. However, he knew his competitors were using factoring for their pricing method (material-times-two). Their price would be around $12,000. Our client doubled his NPM, won the bid, and put an extra $1,000 in his pocket.

******* How it works – end *******

Let's turn our attention to Table 38.1 at the beginning of this chapter. If we use this "mythical" method of material times a factor of two, our price for jobs A and B are $200,000 and $80,000, respectively. Table 38.2 shows us how the arithmetic works out using the factoring method. As we build on these two bids and continue our analysis of the other five common methods of pricing work, the flaws of factoring will become quite apparent.

Table 38.2: **Jobs A & B Using the Factoring Method**

	Job A	Job B
Material costs	$100,000	$40,000
Factor	x 2.0	x 2.0
Price	$200,000	$80,000

[A] **2. The Gross Profit Margin or the Single G&A Overhead Recovery System Method**

There are a number of popular derivatives of the GPM or the **Single Overhead Recovery System (SORS)** approach to pricing, and there's often some historical basis for using these adaptations. Although it has some merits and applications, virtually all these positives are only useful when they're incorporated into other more accurate and flexible estimating methods. And like factoring, the GPM/SORS method is useful for the purposes of "hindsight" analysis.

Some of the popular applications of the GPM/SORS markup approach are as follows:

[B] **The 1/3, 1/3, 1/3 Rule**

Although the specific fractions may change, their use is the same. The estimator, after reviewing past Profit & Loss statements (or recollecting from past experience – either his own or that of a trusted "source"), determines that material costs have comprised approximately 33 percent of gross sales (plus or minus a percent or two). Labor with burden, and possibly equipment costs, account for another 33 percent (+/-). The remaining 33 percent covers equipment costs (if not combined with labor), G&A overhead and net profit.

Although we *do not* recommend this method, this is how you'd implement it:

(1). First, you determine material costs and assume they "should" comprise one-third (or some other predetermined percentage) of the final price for the job.

(2). You then add labor, labor burden and possibly equipment costs (these "should" be roughly equal to material costs) to material costs. Thus, in this case, you double your material costs, and the result is roughly 66 percent of the price of the job.

(3). Equipment costs (if not included with labor), G&A overhead and net profit make up the remaining 34 percent of the total price for the job.

Using our two jobs as an example, the results would be as follows:

Table 38.3: **Jobs A & B Using the GPM Method (A)**

	Job A	Job B
Material costs	$100,000 33.3%	$ 40,000 33.3%
Labor burden & equipment	100,000 33.3%	40,000 33.3%
Subtotal	$200,000 66.6%	$ 80,000 66.6%
G&A Overhead & net profit	$100,000 33.3%	$ 40,000 33.3%
Total price	$300,000 100.0%	$120,000 100.0%

Note: This specific example is not included in Table 38.9.

[B] **The GPM Markup Method**

Although similar to the previous technique, the GPM markup method requires you to do more homework. You must first accurately identify specific costs for material, labor, equipment (unless included in labor or in G&A overhead) and subcontractors. Sales taxes are then added to materials, and labor burden to field payroll. You then mark up the total according to a predetermined (or desired) gross net profit margin.

Using our examples, the process is as follows:

Table 38.4: **Jobs A & B Using the GPM Method (B)**

	Job A	Job B
Direct costs M/L/E/S	$120,000	$120,000
GPM markup (30%)	x 1.3	x 1.3
Total price	$156,000	$156,000

Another mathematical formula commonly used is:

Jobs A & B

Divide the direct costs in M/L/E/S by 1.0 minus the GPM desired:

$120,000 ÷ (1.0 - .3) = $120,000 ÷ .7 = $171,429

Or to adjust the formula to arrive at our original price of $156,000:

(a). Divide 1.0 by the sum of 1 plus the desired GPM (30%) =

1.0 ÷ (1.0 + .3) = 1.0 ÷ 1.3 = .7692

(b). Divide total direct costs by .7692:

$120,000 ÷ .7692 = $156,006

The pitfall of the GPM markup method is what happens to direct costs (M/L/E/S) once you calculate and identify them. Our two examples will help us understand the inherent error.

Jobs A and B both have the same direct costs. Assuming our company field payroll is $15,000 per month (including labor burden), Job A consists of one month of payroll, while Job B consists of four months of payroll.

If net profit is 10 percent ($12,000) of the 30 percent GPM markup on both jobs, that leaves only $24,000 for G&A overhead – the remaining 20 percent of the GPM markup.

Both jobs would then have $24,000 included in the bid to cover G&A overhead costs. Utilizing the company's entire field-labor force, Job A will last one month. Accordingly, Job B will last four months – $60,000 job payroll (with burden) divided by the monthly payroll (with burden) of $15,000 – but G&A overhead in the bid ($24,000) for a four-month job is the same as a one-month job. Job B should have four times the G&A overhead as Job A, because it lasts four times longer.

The GPM/SORS markup method has a serious flaw in this area, one that has proven fatal (or nearly so) to many contractors.

***** **Main point:** The GPM/SORS markup method has a serious flaw (regarding the duration of the job), one that has proven fatal (or nearly so) to many contractors. *****

[A] **3. The Market-driven Unit Pricing Method**

Don’t make the mistake of assuming there’s something inherently wrong with organizing and presenting an estimate in a unit price format. The format is not the issue. The issue is, however, the process (or lack process) used to arrive at your unit price(s).

If correctly calculated, unit prices can provide considerable insight into an estimate, and plenty of ammunition at the bid table when it's time to negotiate. For this reason, every time I bid a

project on the computer, the computer is programmed to simultaneously provide pricing in both a lump sum and a unit price format.

The prices are calculated, however, after all costs for M/L/E/S, general conditions and accurate markups are included in the estimate. These unit prices are then compared to ones normally found on the open market (e.g., so much for a one-, five-, 15-gallon shrub or tree; $1 per square foot for sod, hydroseed at $.05 per square foot; $18 per man-hour for maintenance work; walls or fences at so much per linear foot; irrigation systems at $.60 or $.90 per square foot, etc.).

However, contractors who rely solely on the **market-driven unit pricing (MDUP)** method seriously shortcut the estimating and planning process. In turn, they short-circuit their business systems. Key information and data needed to direct and control individual jobs (as well as the entire company or division) are just not available. As a result, meaningful job costing isn't possible, and the company lurches forward in a fog.

It's hard to imagine an "estimating" method that's of less use in helping to run a company than factoring, but the market-driven unit pricing method is. Factoring, at least, requires that you build on the foundation of material costs. The MDUP system operates totally independent of any relevant data, budgets, costs or strategic planning, whatsoever. Taxes, labor burden, G&A overhead, a contingency factor and net profit – all are "supposed" to be included in the market-driven unit price. Unfortunately, that's rarely the case.

******* Main point:** It's hard to imagine an "estimating" method that's of less use in helping to run a company than factoring, but the market-driven unit pricing method is. *****

******* How it works – start *******

To illustrate the problem, let's suppose you've decided to enter the auto industry (GM, Ford, Chrysler, Toyota, etc., move over). Your first model will be a half-ton pickup truck – of course! In order to cut G&A overhead, you decide to work from home and build the first production model in your garage. You have no idea: a) what your costs will be to build a truck; b) how to determine your costs; or c) how much you should charge for it. Your solution? Since you have to prove yourself first, you decide to sell it for a little less than comparable models already on the market.

No budgets! No planning! No cost data! No tracking system! No scoreboard! Just how long do you think you'll last?

The question isn't whether you can produce the truck (let's assume you can). It's not whether the other manufacturers can survive by selling trucks at the market-driven unit price for your type of production model. The question is: Can you organize and run your company in such a way that you can survive (and make money) by competing with the established market price?

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Survival in the auto industry, any industry, requires much more than a price (especially more than one arrived at by someone else). It requires:

A. An accurate *price*

B. A well thought-out *plan*

C. A self-correcting *process*

Don't be tricked or lulled into thinking a landscape and irrigation contractor can survive on anything less.

******* How it works – end *******

[B] 4. The Dual G&A Overhead Recovery System

Chapter 39 contains a thorough explanation of the **Dual Overhead Recovery System (DORS)** Method. Here are some of the key points from that discussion.

The DORS method utilizes two elements of cost of goods sold: materials, and labor with labor burden, and multiplies them by predetermined percentages. Costs for equipment owned by the company are included in indirect G&A overhead costs. Subcontractor costs are usually marked up separately. The markup percentages on the two cost-of-goods-sold items are calculated as follows:

$$\text{G\&A overhead markup on material costs} = \frac{\text{Total annual G\&A overhead}}{((\text{OWF}) \times (\text{Labor \& burden})) + \text{Materials}}$$

$$\text{G\&A overhead markup on labor costs} = \frac{(\text{OWF}) \times (\text{Total annual G\&A overhead})}{((\text{OWF}) \times (\text{Labor \& burden})) + \text{Materials}}$$

OWF is a G&A overhead weighting factor which is obtained from a chart.

The markups for the example company in chapter 39 work out as follows:

$$\text{G\&A overhead markup on material costs} = \frac{\$192{,}000}{((2.56) \times (\$156{,}000)) + \$180{,}000}$$

$$= \frac{\$192{,}000}{\$579{,}360} = .33140$$

This is 33.14 percent. You'd round this up to .332 or 33.2 percent.

G&A overhead markup on labor costs = $\frac{(2.56) \times (\$192,000)}{((2.56) \times (\$156,000)) + \$180,000}$

= $\frac{\$491,520}{\$579,360} = .848384$

This is 84.84 percent. You'd round this to .85 or 85 percent.

Turning to our sample jobs, we can calculate a price for these jobs using the DORS method.

Table 38.5: **Jobs A & B Using the DORS Method**

Job A

	Direct Costs		G&A Ovhd %		G&A Markup
Materials (with sales tax)	$100,000	x	.332	=	$33,200
Labor with labor burden	15,000	x	.85	=	12,750
Equipment with rentals *	N/A	x	N/A	=	0
Subcontractors	0	x	N/A	=	0
Total	$115,000				$45,950

Total direct costs	$115,000
Total G&A overhead to recover on job	45,950
Break-even point	$ 160,950
Net profit markup (10%)	16,095
Price for job	$177,045

Job B

	Direct Costs		G&A Ovhd %		G&A Markup
Materials (with sales tax)	$ 40,000	x	.332	=	$13,280
Labor with labor burden	60,000	x	.85	=	51,000
Equipment with rentals *	N/A	x	N/A	=	0
Subcontractors	0	x	N/A	=	0
Total	$100,000				$64,280

Total direct costs	$100,000
Total G&A overhead to recover on job	64,280
Break-even point	$164,280
Net profit markup (10%)	16,428
Price for job	$180,708

* Company owned equipment is included in the G&A overhead recovery percentages.

Advantages of the DORS Method:

- It's mathematically based. Therefore, its mathematical assumptions can be tested and proved or disproved.
- It's based on company historical financial data.
- It acknowledges the errors in factoring, market-driven unit pricing and the GPM/SORS methods and attempts to correct them.
- It attempts to allocate G&A overhead costs based on intangible job factors.
- Most costs are clearly identified in the estimating process.

Disadvantages of the DORS Method:

- It's extremely complex.
- The G&A overhead weighting factor (OWF) is to be blindly accepted, without proof.
- Its basic assumptions in arithmetic can be disproved.
- Company-owned field equipment costs are included in G&A overhead and averaged into bids.
- Company-owned field equipment production rates aren't identified in the bidding process.
- Estimating cost scenarios for varying company-owned field equipment production rates and their cost implications in individual bids aren't possible in the bidding process.
- Estimating cost scenarios considering the purchase of new field equipment and its implication on production rates and cost implications in individual bids aren't possible in the bidding process.
- While the DORS method addresses the M/L/E/S ratio problem (by using a multiple versus a single markup percent), which the SORS/GPM method does not, it treats ALL jobs throughout the year as if the mix of materials and labor were the same as your overall budget.

  Once you determine your labor and labor burden markup percent, it doesn't change until you recalculate your estimating G&A overhead budget. Consequently, you won't know until the end of the year if the amount of materials, labor and labor burden, equipment, and subcontractors used in your estimating budget were accurate. If they're not, your G&A overhead percent markup on labor and burden should have been higher or lower, depending upon the actual mix of direct costs.

- Prevailing wage projects present another problem. If you perform both prevailing wage and non-prevailing wage work, your labor and labor burden G&A overhead markup percentages for rated (prevailing wage) versus non-rated jobs should be different.

- Another shortcoming of the DORS method is that it's difficult to update and keep current. This is due (in part) to the fact that the G&A overhead recovered on jobs isn't easily accumulated, tracked and compared to actual financial statements (that is, compared to the

data generated by your accounting system). Additional calculations are required, calculations that are not inherent in the DORS estimating process.

- The DORS method is not easily and quickly adjusted. It's difficult to adapt to rapidly changing economies and/or special market situations, with any degree of certainty. You can make adjustments to your G&A overhead markup percentages for materials and field labor, but due to the vast number of variables we've discussed, it's difficult to apply them in such situations accurately or with confidence.

***** **Main point:** (The DORS method's) basic assumptions in arithmetic can be disproved. *****

Table 38.9 (located at the end of the chapter) displays how the prices calculated according to the DORS Method fall in line with the other estimating methods.

[B] 5. The Multiple G&A Overhead Recovery System or the "Traditional" Method

This method of pricing projects has gained popularity in recent years and is being taught in estimating workshops throughout North America. In fact, I taught it in workshops for years in the late 1980s and early 1990s.

This method can have distinct advantages over the previous systems, but it also has definite disadvantages. It's overly complex, and it's difficult to make adjustments for varying market conditions. This becomes a particular liability in periods of rapid market change.

***** Main point: (The MORS Method is) overly complex, and it's difficult to make adjustments for varying market conditions. This becomes a particular liability in periods of rapid market change. *****

The **Multiple Overhead Recovery System (MORS)** Method can (and should) be firmly grounded on accurate historical data, current financial statements, well thought-out estimating G&A overhead budgets, projected sales, and direct costs for the upcoming budget year.

Let's discuss how it works. Figure 2.1 provides an overview of the MORS method. M/L/E/S direct costs are clearly identified in Phases I and II on the figure, for both production items and general conditions.

It must be understood, however, that if you do an inaccurate takeoff, miscalculate labor or equipment production rates, miss other important site conditions or other bidding variables, then the most perfect of estimating "systems" will be of little help. You *must do your homework* and do it accurately!

Once you've calculated the costs for Phases I and II, you then add the markups:

- SALES TAX is added to materials. *Note*: Some states now add sales tax not only to materials, but to the entire job, just as though you were to add another five-six percent net profit to the whole job.

- LABOR BURDEN is then added to direct labor costs.

- G&A OVERHEAD is calculated (as described below).

- NET PROFIT is added to the job based on a straight percent markup on the total of all aforementioned costs.

- Finally, A CONTINGENCY FACTOR is added, if desired.

Up to now, the MORS method is fairly straightforward. It's in G&A overhead recovery that it begins to break down.

G&A overhead is recovered (added to a bid) by marking up the direct cost totals for Phases I and II by predetermined percentages:

- Material costs are usually marked up 10 percent.

- Field equipment costs are usually marked up 25 percent.

- Subcontractor costs are usually marked up five percent.

These percentages may vary in some applications, but normally remain as stated above.

The cornerstone of the MORS method is the percent that labor (combined with labor burden) is marked up for G&A overhead recovery:

- Large commercial companies (over $1.5M in sales) usually range from 25 percent to 45 percent.

- Mid-sized companies ($750K to $1.5M in sales) doing commercial and residential work usually range from 45 percent to 65 percent.

- Smaller (under $500K) residential and commercial companies, or larger ($1M +) high-end residential companies, usually range from 65 percent to 100 percent.

Keep in mind that these percentage markups on labor will greatly vary from company to company, depending on the type of market served and the structure of the company. They should not be used without taking these other factors into consideration.

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To determine the construction division labor and labor burden G&A overhead markup percent, see Section 9B at the bottom of Figure 3.1.

- First, project a complete budget (sales, direct costs and G&A overhead).

- Second, multiply direct costs (except for labor and labor burden) by their predetermined percentages (five, 10 and 25 percent).

A. Calculate and total projected G&A overhead recovered from materials, equipment and subcontractors. For example:

	Budget Projection		**MORS %**	**G&A Overhead to Recover**
Material costs	$180,000	x	10% =	$ 18,000
Equipment costs	72,000	x	25% =	18,000
Subcontractor costs	12,000	x	5% =	600
Subtotal				$ 36,600

B. Subtract the subtotal of A above from total company or division G&A overhead to recover.

Total CO/DIV G&A overhead to recover for year	$120,000
Projected G&A overhead to recover from M/E/S	- 36,600
Remaining G&A overhead to recover from labor & burden	$ 83,400

C. Determine the labor and labor burden markup percent to be used in estimating, by dividing remaining G&A overhead to recover by the projected company/division field labor payroll, plus labor burden.

Remaining G&A overhead to recover	$83,400 = .5346or 54.0%
Projected annual labor & burden	$156,000

The resulting percentage (in our example, 54 percent) provides the bidding G&A overhead markup percent for the construction division labor and labor burden.

Applying these percentages and the MORS method to our two examples in Figure 38.1 will produce prices for the jobs as indicated in Figure 38.6.

As you can see, using a 54 percent versus a 30 percent G&A overhead markup on labor and labor burden would make a considerable difference on the final price. The 24 percent spread would be caused primarily by the economies of scale a larger company enjoys over a smaller one. The competitive advantage of the larger company is significant.

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Table 38.6: **Jobs A & B Using the MORS Method**

Job A

	Direct Costs		**OVHD %**		**Markup**
Materials (w/tax)	$100,000	x	10%	=	$10,000
Labor w/burden	15,000	x	54%	=	8,100
Equip. w/rentals	5,000	x	25%	=	1,250
Subcontractors	0	x	5%	=	0
	$120,000				$19,350

Total direct costs	$120,000
Total G&A overhead to recover on job	19,350
Break-even point (BEP)	139,350
Net profit markup (10%)	13,935
Price for job	$153,283

Job B

	Direct Costs		**OVHD %**		**Markup**
Materials (w/tax)	$40,000	x	10%	=	$ 4,000
Labor w/burden	60,000	x	54%	=	32,400
Equip. w/rentals	20,000	x	25%	=	5,000
Subcontractors	0	x	5%	=	0
	$120,000				$41,400

Total direct costs	$120,000
Total G&A overhead to recover on job	41,400
Break-even point (BEP)	161,400
Net profit markup (10%)	16,140
Price for job	$177,540

The company using the 54 percent markup is the one with combined gross sales probably between $1.0 to $1.5 million, while a much smaller company will be from 60 to 75 percent.

The advantages of the MORS method are many, *if* it's based on accurate takeoff data and production rates, and a thorough job-site condition analysis.

Some of the advantages of the MORS method are:

- It can be based on historical data for your specific company
- Direct COGS costs are clearly identified
- Gross profit margin (GPM) is clearly identified
- G&A overhead recovery is clearly identified
- Net profit markup is clearly identified
- It can be budget-driven. Progress can be measured against a predetermined budget/set of standards.
- It can help you plan and run the field during actual production. Since you're required to build the job step-by-step in your mind and on paper the way you'll build it in the field, the MORS method provides an excellent process which provides the data needed to plan and to run the field during the project.
- Meaningful job costing is made possible. The MORS method provides M/L/E/S cost data, as well as hours for labor and equipment for budget-to-actual comparisons.

The advantages of the MORS method over factoring and the MDUP method should be obvious.

The MORS method also has a distinct advantage over the SORS/GPM method, one that can be seen in Figures (38-3 & 4). The MORS method compensates for the M/L/E/S ratios within direct costs, while the SORS/GPM method generally does not.

In Figure 38.4, the price for both Jobs A and B was $156,000, because the direct costs for both were $120,000. The SORS/GPM method considers the M/L/E/S mix or ratios on a job equally. The MORS method varies the G&A overhead markup percent for each separate component of direct costs. It's more flexible and, therefore, more accurate.

Disadvantages of the MORS method:

Indeed, the MORS pricing method has its strengths – *but* it also has considerable weaknesses that need to be considered, and which make it an undesirable method for estimating.

- The main disadvantage is that it's very complex. Adjusting or adapting it to the various scenarios you may encounter (T&M, prevailing wage, rapidly changing markets, recessions, etc.) is tricky, to say the least.

- While the MORS method addresses the M/L/E/S ratio problem (by using a multiple versus a single markup percent), which the SORS/GPM method does not, it treats ALL jobs throughout the year as if the mix of materials, labor, equipment and subcontractors were the same as your overall budget.

  Once you determine your labor and labor burden markup percent (for instance, 36 percent in our example), it doesn't change until you recalculate your estimating G&A overhead budget. Consequently, you won't know until the end of the year if the amount of materials, labor and labor burden, equipment and subcontractors used in your estimating budget were accurate. If they're not, your G&A overhead percent markup on labor and burden should have been higher or lower, depending on the actual mix of direct costs.

- Another serious drawback of the MORS method is the "traditional" markups that are applied to materials, equipment and subcontractors: "traditionally" 10 percent, 25 percent and five percent, respectively.

  These percentages have no clear analytical basis. In and of themselves, they're (at best) "guesstimates." They're like "factors" and "market-driven unit prices." Sometime in the past, for some job, they may have been accurate, but only for a specific company on a specific job within a particular year.

  How do you know you should mark up materials by 10 percent for G&A overhead recovery? Answers to that question range from, "It's the customary market markup," to "It should cover your costs for ordering and processing materials," and from "It's what's taught," to "It's convenient."

  These percentages may be close to being accurate, but "accurate" percentages don't remain the same (10 percent, 25 percent and five percent) from application to application and from job to job. Nor do they very often come in such neat, rounded numbers as: 10.0, 25.0 or 5.0. These numbers are just too "canned."

- Another disadvantage of the MORS method is that the M/L/E/S G&A overhead markup percentages used to bid jobs have little or no analytical justification when applied to T&M (time and material) job situations. For instance, if there are no materials involved in a T&M job, should you use the same G&A overhead markup percent as determined on your yearly G&A overhead estimating budget (e.g., in our budget 47 percent)? Or should you increase it? If so, by how much?

- Prevailing wage projects present another problem. If you perform both prevailing wage and non-prevailing wage work, your labor and labor burden G&A overhead markup percentages for rated (prevailing wage) versus non-rated jobs should be different.

For instance, if your G&A overhead markup percentage on labor and labor burden for non-rated jobs with a CAW of $10 is 36 percent, it would drop to l8 percent for rated jobs with a CAW of $20.

This scenario is compounded if your original projected estimating budget contains a yearly field-labor payroll amount consisting of both prevailing and non-prevailing wage labor. If it does, your labor and labor burden G&A overhead markup percentages calculated on your estimating budget become an average percent. Consequently, it's too high for prevailing wage jobs and too low for jobs performed at non-prevailing wage rates. You've sacrificed either accuracy, competitiveness, or both.

In addition, if, in your projected estimating budget, your ratio of non-prevailing wage and prevailing wage labor differs from the ratio of work you actually do for the year, your G&A overhead markup percentages on labor and labor burden would have been wrong, anyway.

- Another shortcoming of the MORS method is that it's difficult to update and keep current. This is due (in part) to the fact that the G&A overhead recovered on jobs isn't easily accumulated, tracked and compared to actual financial statements (that is, compared to the data generated by your accounting system). Additional calculations are required, calculations that are not inherent in the MORS estimating process.

- The MORS method isn't easily and quickly adjusted. It's difficult to adapt to rapidly changing economies and/or special market situations, with any degree of certainty. You can make adjustments to your G&A overhead markup percentages, but due to the vast number of variables we've discussed, it's difficult to apply them in such situations accurately or with confidence.

******* How it works – start *******
The MORS method actually lost a client of mine $500,000 worth of work. He was using the MORS method before I introduced him to the OPPH method. After we prepared his budgets and had calculated the appropriate numbers/percentages, we re-bid some large jobs he'd lost the previous season. Using his numbers and the OPPH method, we found he could have won those jobs, covered all his costs, and made money. However, because the MORS method he was using was too inaccurate and complex, he didn't take his "best shot" at the bid table.

******* How it works – end*******

[A] The fallacy of recovering G&A overhead utilizing percentages

The MORS, DORS and the SORS/GPM methods contain a "*fatal flaw*" which renders them both ineffective. They contain a basic mathematical relational error. Both attempt to directly correlate the amount of G&A overhead dollars to add onto a job to the amount of direct costs in the

job, by means of one or a combination of percentages (or factor/multipliers). However, there's no such correlation (factor) between these two items. Let me explain by using two items that *do* directly correlate.

The amount of a workers' compensation insurance (WCI) premium is directly correlated (in direct proportion) to payroll by means of a rate per hundred dollars of payroll (e.g., $7 per hundred). This translates to a decimal of .07 or 7 percent. If annual payroll doubles from $50,000 to $100,000, the WCI premium doubles from $3,500 to $7,000. If payroll decreases, premiums decrease in *direct proportion* to the decrease. The percentage factor (or multiplier) remains constant but it *accurately links* premiums to payroll.

This is *a legitimate mathematical relationship* for calculating the cost of WCI. Premiums (actual real costs) are *always* in direct relation to payroll. Premiums and payroll are always linked by means of the same factor – the percentage.

Sales tax on materials and GLI premiums are also examples of costs that are directly correlated to other costs by means of a multiplier.

Unfortunately, there's no such direct link (or multiplier) between the components involved in the MORS, DORS and the SORS/GPM G&A overhead recovery methods. There's simply *no direct correlation* (or factors) linking costs for G&A overhead and direct costs for a job in the field. Consequently, attempting to tie the two together by means of a single (SORS), dual (DORS) or multiple (MORS) multiplier (which never changes, because it's so complex and rigid) is automatically flawed, because there's no "multiplier" that accurately links the two. Attempting to link G&A overhead to direct costs by means of a percentage multiplier is simply too inflexible and inaccurate for the dynamic business of landscape and irrigation contracting.

The MORS, DORS and the SORS/GPM methods are simply other versions of "materials-times-two," or factoring, dressed up in fancy terminology. The MORS method especially is just too complex and intrinsically inflexible. Fortunately, there's an easier method.

***** **Main point:** The MORS, DORS and the SORS/GPM methods are simply other versions of "materials-times-two," or factoring, dressed up in fancy terminology. The MORS method especially is just too complex and intrinsically inflexible. *****

The alternative to the previous four methods discussed is to measure and allocate G&A overhead to jobs in terms of units of whole dollars – the OPH (and not percentage multipliers or factors) in order to determine a break-even point (BEP). A GPM is then calculated, once a net profit margin is added to the BEP. This method is far more accurate than any of the other four, and yet it's far simpler and easier to measure, monitor, manage and control by means of per hour and ratio analysis calculated on the BAR worksheet.

Let's get started!

J.R. Huston Enterprises, Inc.

[A] 6. The Field-labor Hour Recovery or the G&A overhead and Net profit per Hour method

Although not foolproof, the **Overhead and Profit per Hour (OPPH)** pricing method provides considerable advantages over all the previous methods discussed.

*****Main Point:** Although not foolproof, the **Overhead and Profit per Hour (OPPH)** pricing method provides considerable advantages over all the previous methods discussed. *****

- It begins by adding sales tax to materials and then adding labor burden to field payroll.

- It then becomes necessary to have a clearly identified G&A overhead amount on a company/division basis to recover for the year.

- The G&A overhead company/division amount is then divided by the projected number of billable field-labor hours in the company/division to determine the G&A overhead per hour (OPH) dollar amount.

  The OPH for the budget example in Figure 3.1 is as follows:

Division	OPH
Lawn maintenance	$7.48
Installation	$14.25
Irrigation Service	$14.29
Tree service	$13.43
Winter work	$16.37
Average for all divisions	$11.45

- G&A overhead is then allocated to projects on the basis of the number of field-labor hours estimated in each bid.

  For instance, a construction project that had 1,000 field-labor hours in Phases I and II of the bid would be marked up $14,250 for G&A overhead (1,000 hours x $14.25 OPH).

  There may be some slight variations to this (which we'll cover later), but this is essentially how it's done for G&A overhead recovery. The break-even point (BEP) is calculated once G&A overhead costs are added to the direct costs to include sales tax and labor burden.

- A net profit margin is then calculated and added onto the break-even point in one of two ways.

1. To obtain a true net profit margin:

   Divide the BEP by 1.0 minus your desired net profit percent. A 10 percent net profit margin is calculated as follows:

   BEP ÷ (1.0 - .1) = BEP ÷ .9 = Price

or

2. You can determine your net profit margin by multiplying the number of field-labor hours in the bid by a predetermined net profit per hour (PPH) dollar amount. This PPH comes from your estimating budget. (See Section 8E of Figure 3.1.)

The PPH method has some significant advantages over the conventional wisdom that exists behind the percent markup. However, I always compare both when I bid a project.

First, you establish a predetermined company/division net profit for every billable field-labor hour that's to occur in the field. Just as in G&A overhead, we've tied net profit to field-labor hours.

The PPH for the budget example in Figure 3.1 is as follows:

Division	PPH	Round up/set to
Lawn maintenance	$3.60	$3.60
Installation	$4.03	$6.00 (approximate 10% of SPH of $61.82)
Irrigation Service	$4.42	$6.00 (approximate 10% of SPH of $62.06)
Tree service	$4.92	$6.00 (approximate 10% of SPH of $58.12)
Winter work	$18.20	$20.00
Average for all divisions	$4.63	$5.00 (approximate 10% of SPH of $49.65)

Second, we can approach the bid table with our PPH in the back of our mind – based on a total dollar amount of net profit we want to bring into the company or division over a one-year period. In Figure 3.1, this amount is $89,491 for our construction division, or rounded off: $90,000. Our thinking is, "Who cares how we get the $90,000, as long as we get it."

Third, when we review our bid and finalize our numbers, we may find the PPH (calculated at an approximate 10 percent net profit margin) on material-intense jobs is actually quite different from our budget average. For instance, it can easily be $8-10 per field-labor hour, or almost double your budget average. If you can win the job with this much net profit on it, by all means, do so.

However, we have to realize that (in our example) we could drop our PPH to as low as $6 and still be on target regarding our desired net profit for the year. In this particular instance, a $6 PPH may only be a five percent net profit margin on the job, but we won't hurt ourselves by using the lower amount.

Conventional wisdom can't see the fallacies and/or shortcomings of the percent markup method for either net profit or G&A overhead. The percent markups that are used in factoring, the SORS, DORS and MORS methods are just too inflexible.

The OPPH method addresses these problems in a very simple, yet effective manner.

Finally, if desired, a contingency factor may then be added to the job. First, though, there are two critical requisites attached to the OPPH method:

1. Projected company/division field-labor hours must be reasonably accurate (within plus or minus 10 percent) to actual hours for the year.

2. G&A overhead costs MUST be correctly defined (as we've done in chapter 8).

Note: If you include items in G&A overhead that should be in direct costs for the job being bid—such as field equipment costs and field-labor burden items (e.g., payroll taxes, general liability and workers' compensation insurance, etc.)—you'll seriously distort the effectiveness and accuracy of <u>any</u> estimating system, including the OPPH method.

If these two requisites are accomplished, the OPPH method can be quite simple, extremely accurate, and—we can't stress enough this important advantage—very adaptable at the bid table.

******* Main point:** If these two requisites are accomplished, the OPPH method can be quite simple, extremely accurate, and—we can't stress enough this important advantage—very adaptable at the bid table. *****

Although it's easy to use, the OPPH method must be combined with accurate takeoff procedures, along with field labor and equipment production rates that accurately reflect the specific job and site conditions being bid.

If the job is built (planned) in your mind and on paper consistent with the way it will be produced in the field, the OPPH method facilitates and enhances production planning in much the same way as the MORS methods. *All* data needed for effective job costing is a by-product of the OPPH Method.

Other strengths of the OPPH method:

It's budget-driven. The installation division OPH dollar amount (for instance, in Figure 3.1: $14.25 per field-labor hour) is derived directly from your G&A overhead budget.

It applies to either prevailing wage or non-rated work. You don't have to adjust your OPH amount when bidding different types of work; nor worry about budget vs. actual variations for one or the other, in comparison to your original budget.

G&A overhead that's accumulated through bids won for the year is easy to track—because it's so easy to calculate.

The OPH is determined by only two numbers (billable field-labor hours and G&A overhead costs). Therefore, it's easy to compare your budgeted OPH to your actual OPH on a monthly and/or a year-to-date (YTD) basis.

Tying your G&A overhead recovery method directly to billable field-labor hours creates another very important advantage: bureaucrats (owners, estimators, bookkeepers, etc.) begin to think of and measure G&A overhead in terms of field labor. Because the concept is so easy to visualize (another advantage), field people and bureaucrats alike can better relate to it.

For instance, if your OPH is $10, adding a full-time (2,080 hours per year) laborer in the field will allow you to increase your G&A overhead budget for the year by $20,800 (2,080 hrs/yr x $10 OPH), and not increase your OPH for estimating purposes.

If you add labor to your field crew, and your yearly G&A overhead budget remains the same, your OPH will decrease accordingly. You can, therefore, drop your prices and become more competitive, or you can increase your net profit margin.

By breaking down and thinking of G&A overhead in terms of OPH "units," it becomes more manageable and meaningful.

The OPPH method and its resulting data can easily be mathematically converted, reformatted and compared to the factoring, SORS/GPM or MORS methods. With the aid of a personal computer (PC) spreadsheet program (or a lot of manual work), the OPPH method can also be converted for comparison to the market-driven unit pricing method.

Consequently, using the OPPH method encompasses the benefits of all five estimating pricing systems. By comparing one method against the other, you can adjust your bid to incorporate the strengths of each.

The OPPH system is easily adjusted in order to compensate for fast-changing markets. If sales are plummeting, so will billable field-labor hours. If you're tracking your OPH as faithfully as you should, you'll almost immediately see it rise and go through the roof. This says you need to address the issue (probably by cutting G&A overhead) and get your OPH back in line.

If the economy or a particular market (meaning a specific division in your company) begins to accelerate and displays vigorous growth, you can quickly and easily adjust projected field-labor hours and your G&A overhead budget, thus changing your OPH accordingly, with no messy percentages or M/L/E/S ratios to worry about.

Gross and net profit margins are both easily identified while using the OPPH method. Accordingly, your break-even point (BEP) is also readily identified.

[A] Caveats to consider when using the OPPH Method

With so many advantages, one would think the OPPH method would have few limitations or drawbacks. There are, however, some necessary precautions.

First, unless it's used in conjunction with and in comparison to the other pricing methods, you could become lazy and develop "tunnel vision," and/or "leave money on the table." If your competition is very unsophisticated and is using factors, the MDUP, or the SORS/GPM system, you should recalculate your bids using those methods in conjunction with the OPPH method. This can dramatically sharpen your skills at the bid table.

When bidding jobs that have an inordinate amount of materials or equipment, you should pay particular attention to the ratios, per hour calculations and the GPM to ensure that your profit margins are high enough. Otherwise, you might underprice jobs having a material-to-labor ratio above 5:1 and an equipment-to-labor ratio over .5:1.

You should also scrutinize jobs that have a high percentage of subcontractor costs (above 25%) in them. I would recommend removing the subcontractor costs from the main bid and pricing them independent of it. Pay particular attention to the GPM because high intensity subcontractor costs will distort it.

By tracking bid results (if possible), you can begin to understand your competitors' bidding better than they do. Once you do, you can begin to beat them at their own game, as long as you can do so without hurting yourself.

It's easy, too, while using the OPPH process, to leave money on the table when you encounter bidding situations with expensive materials, a high material-to-labor ratio, or a large number of subcontractors. These special situations make it necessary for you to monitor your GPM markup on your bids, as well as the MORS markup on labor and labor burden by backing out material, equipment, and subcontractor markups. To do so:

A. Determine your OPPH method total G&A overhead on the bid.

B. Subtract from A above: 10 percent of the material cost, 25 percent of the equipment cost, and five percent of the subcontractor cost. This is the respective MORS markup on these items.

C. The remaining amount is your G&A overhead markup dollar amount on labor and labor burden using the MORS method for this particular bid.

D. Divide this remaining amount by the total of field labor, plus labor burden costs in the bid.

The result is your MORS G&A overhead markup percent for labor and labor burden.

By first determining your total G&A overhead dollar amount to recover on a job using the OPPH method, and then "backing into" your MORS labor and labor burden G&A overhead markup percent as we did above, you'll be able to compare your OPPH bid method to the MORS one, if you so choose.

However, you'll see that the MORS G&A overhead markup percent on labor and labor burden will wildly fluctuate due to the mixture of M/L/E/S on a particular job, from zero percent (at times) to the high 80-90 percent range.

By comparing the "backed into" MORS percentages to your overall estimating budget percentages (and/or in conjunction with past bidding experience), you'll develop a sense, a feel, for where the percentage markup on labor and labor burden ought to be. If it's too low (that is, below 20 percent), perhaps you should add extra net profit to the job. If it appears inordinately high, you should investigate and check your gross profit margin on the bid.

Another drawback of the OPPH method is that it's not easy to convert manually (that is, without a computer) to unit prices. However, we did cover this in greater detail in chapter 14.

Finally, as we said earlier, the OPPH method is only as good as the projections for your company's (or division's) G&A overhead budget and billable field-labor hours. If G&A overhead includes field equipment and/or labor burden, taxes, and insurance items, the OPPH method will be rendered inaccurate.

Table 38.7: **Jobs A & B Using the OPPH Method**

		Job A	**%**		**Job B**	**%**
Total direct costs		$120,000	83		$120,000	67
G&A overhead	($10 x 1,000)	10,000	7	($10 x 4,000)	40,000	23
BEP		130,000	90		160,000	90
Net profit margin 10%		14,444	10		17,778	10
		144,444	100		177,778	100

Contingency factor	0		0	
Total price	$144,444	100	177,778	100

Table 38.8: **Jobs A & B Ratio/per Hour Analysis of the OPPH Method**

	Job A	**Job B**
SPH	$144.44	$44.45
DCPH	$120.00	$30.00
OPH	$10.00	$10.00
PPH	$14.44	$17.78
GPMPH	$24.44	$27.78
G&A overhead %	6.9%	22.5%
Net profit %	10.0%	10.0%
GPM %	16.9%	32.5%
BEP %	90.0%	90.0%
M/L ratio	8.9:1	.9:1
MPH	$100.00	$10.00
EQ/L ratio	.44:1 (44%)	.44:1 (44%)
EQPH	$5.00	$5.00

Let's turn our attention back to Figure 38.1 and complete the estimating process, utilizing the OPPH pricing method. The OPPH to be used is $10,.

Our original examples in Figure 38.1 and 38.2 depict two extremes. Job A is material-intensive while Job B is labor-intensive. The material-to-labor ratio and the material per hour (MPH) identified in Figures 38.7 and 38.8 so indicate. As you can see, there are 10 times the amount of materials per field-labor hour in Job A as there are in Job B. Although I purposely chose these extreme examples to drive home a number of points, you'll occasionally encounter such extremes (perhaps not quite so dramatic).

The GPM in Table 38.8 is another key indicator. While 11 percent GPM on Job A is low, the 33 percent GPM on Job B is excessive for the commercial market, but not the residential one. Once you've monitored your GPM on a number of bids in a particular market (e.g., commercial maintenance, commercial construction, high-end residential design/build, state or federal prevailing wage, etc.), you'll have gained considerable insight into what that particular market will bear. This information can be especially helpful, and can bolster your confidence at the bid table.

In most markets, you'd probably want to move your net profit percent closer to 10 percent for both jobs. However, although I'd probably not hesitate to increase the net profit on Job A 3-5 points, I'd be cautious about lowering the NPM on Job B too quickly, unless I was certain a 11 percent NPM was just too unrealistic.

J.R. Huston Enterprises, Inc.

[A] ANALYSIS OF THE SIX METHODS

Table 38.9 displays the various estimating methods as they apply to jobs A and B.

Only the GPM/SORS, MORS and OPPH methods identify all direct costs in the estimating process. The DORS method identifies all direct costs except for company-owned equipment. Factoring only identifies the material costs, while the market-driven unit pricing method doesn't even identify that. Meaningful job costing is impossible, unless you identify the direct costs used to job cost your jobs. Therefore, when you take shortcuts in the estimating process, you're really short-circuiting your ability to keep score on your jobs, and control them.

G&A overhead (or indirect costs) is another area that deserves our analysis when comparing these six estimating methods. To do so, we first need to take note of two assumptions stated in Figure 38.1. First, the total company field payroll with labor burden per calendar month is $15,000. Second, the total company G&A overhead per calendar month is $10,000.

The factoring, GPM/SORS and market-driven unit pricing methods make no attempt to identify G&A overhead costs in the bidding process. At least the GPM/SORS method identifies the gross profit margin, but that's all. These methods make no attempt to identify or adjust their G&A overhead recovery from one job to the next. In large part, that's why these bidding methods are very inaccurate.

Let's turn our attention to the DORS, MORS and the OPPH methods. We can now analyze and compare them as we keep in mind our two assumptions. We should also add that G&A overhead costs don't vary that much, if at all, from month to month. While there might be some variation, the vast majority of G&A overhead costs remain fairly constant. Rent, overhead salaries and related burden, telephone, advertising, overhead vehicle payments, etc. don't change that much. If they do, it's usually in the off-season. With this in mind, we take note that Job A is a one-month job and Job B a four-month job. We next ask ourselves a simple series of questions.

For Job A:

- Question: If G&A overhead costs vary in insignificant amounts from month to month, how many months of G&A overhead cost do we allocate to a one-month job? (This is not a trick question.)
- Answer: One month.
- Question: If G&A overhead is $10,000 per month, how much G&A overhead should be allocated to Job A?
- Answer: $10,000.

For Job B:

- Question: If G&A overhead costs vary in insignificant amounts from month to month, how many months of G&A overhead cost do we allocate to a four-month job? (Again, this is not a trick question.)

- Answer: Four months.

- Question: If G&A overhead is $10,000 per month, how much G&A overhead should be allocated to Job B?

- Answer: $40,000.

Turning to Table 38.9, we see that the DORS method vastly overstated the G&A overhead allocated to Job A. Even after removing the $5,000 for equipment costs supposedly included in Job A G&A overhead, the DORS method adds four times as much G&A overhead costs as it should. It calculates the G&A overhead on Job B much more accurately.

********* Table **38.9 Jobs A&B Bid using All Six Methods*******

The MORS method misses the mark less dramatically, but is still not that accurate. Job A G&A overhead allocation is almost double what it should be, while Job B G&A overhead is "almost" on target. However, it is understated by almost $3,000.

The OPPH method allocates the G&A overhead costs for both jobs based on time. In our case, it's based on billable field man-hours. We should note that we could have allocated G&A overhead costs based on the crew hour, day, week or month. We could even allocate G&A overhead costs on a man-minute basis but, even for me, this is a bit anal.

My assertion is that the primary reason why the OPPH method more accurately allocates G&A overhead costs is that it ties these costs to a time unit. Since 85 to 95 percent of all G&A overhead costs are paid based on a time unit (per week, month, quarter, etc.), they're best allocated to jobs based on a similar type of measuring unit.

******* Main point:** Since 85 to 95 percent of all G&A overhead costs are paid based on a time unit (per week, month, quarter, etc.), they're best allocated to jobs based on a similar type of measuring unit. *********

Material, equipment and subcontractor costs (I call these events) can vary dramatically from month to month and from job to job. Hitching G&A overhead costs to these direct costs, which vary so dramatically, makes no mathematical sense. Tying G&A overhead costs to gross sales makes even less mathematical sense.

J.R. Huston Enterprises, Inc.

Is the OPPH method goof-proof? Of course not! There are too many (of us) "goofs" (when) bidding work. Is it the best alternative? I think so, especially when you take into account all six methods when you bid a job.

******* How it works – Start *******

Let's price another job, the Peterson residence, (see Table 38.10) that's more the norm for a construction division. Materials total $9,540, including sales tax on materials which is six percent. CAW (including OTF & RF) is $16.80. Labor burden is 32 percent. The job is estimated to take 268 field-labor hours. Equipment costs total $1,184. The subcontractor mason will cost $2,000. OPH is $10. The contractor wants net profit at either his PPH of $5 or 10 percent, whichever is greater. There's no contingency factor on the job. The job prices out as indicated in Table s 38.11 and 38.12.

Table 38.10: **Peterson Residence Bid Using the OPPH Method**

Direct Costs	**Totals**	**%**
Materials	$9,000	37.9
Tax on materials (6%)	540	2.2
Labor (268 hours x $14.00 CAW)	4502	19.0
Labor burden (32%)	1,441	6.0
Equipment	1,184	5.0
Subcontractors	2,000	8.4
Total direct costs	$18,667	78.7
Markups		
G&A overhead ($10.00 OPH)	2,680	11.3
Break-even point (BEP)	21,347	90.0
Net profit margin 10.00%	2,372	10.0
Contingency factor	0	0.0
Total price	$23,719	100.0

Figure 38.12 contains the ratio/per hour analysis for this job.

Table 38.11: **Peterson Residence Bid Ratio/per Hour Analysis**

Item	Ratio	$	%
SPH		$88.50	100.0
G&A overhead OPH		$10.00	11.3
Net profit per hour		$ 8.85	10.0

GPM		$5052	21.3
BEP		$21,347	90.0
Material/Labor Ratio	2.0 to 1.0		
Materials per hour		$33.58	37.9
Equipment/Labor Ratio	0..26		63.4
Equipment per hour		$4.42	5.0

The only items that appear out-of-line are the equipment/labor ratio and the EQPH. Both are higher than would be expected for a typical landscape construction project. However, these indicators are driven up by the extra equipment needed for the site work.

Table 38.12 is a printout of a Bid Analysis/review (BAR) worksheet for the Peterson bid, using the OPPH method in Table 38.10.

********* Table **38.12 Peterson Residence B.A.R. Worksheet Analysis *******

******* How it works – end *******

[A] SUMMARY

All six pricing methods have their strengths and weaknesses. At best, factoring and the MDUP methods are all but useless for determining accurate *costs* for your work; at worst, they can cause serious errors. While the SORS/GPM, DORS and the MORS methods have some advantages, they should also be used with caution.

I recommend that you estimate your jobs using the OPPH method and then compare its results to the other five methods, using the techniques mentioned earlier.

*******Main point:** I recommend that you estimate your jobs using the OPPH method and then compare its results to the other five methods, using the techniques mentioned earlier. *****

Direct costs for materials, labor, equipment, subcontractors, taxes and labor burden are rather straightforward to determine for any given job, once you take into consideration all site conditions and production rates. Most estimating problems arise from G&A overhead. There's no "direct" or exact way to determine just how much G&A overhead to put on a particular job. By its very nature, it's vague. That's why it's referred to as a G&A (general & administrative) cost, or an indirect one, because it can't be directly costed to a job. If it could be directly tied to a job, it would then become a direct, not an indirect, cost.

During the estimating process, you're attempting to identify two numbers:

- The first is the total of your direct costs (materials, sales tax, labor, labor burden, field equipment and subcontractors) plus the amount of G&A overhead you need to recover on

the job. These two combined determine your break-even point (*BEP*). Once you determine this first number, you can then address the second.

- Net profit and a contingency factor, if desired, combine to form the second number. How much net profit can you put on the job and still get it? And do you want to add a "cushion" (a contingency factor) in the net profit margin?

  How high can you go without losing the project?" and *How low* can you go to win the bid without hurting yourself (not cover all costs)?" A good estimating system allows you to operate safely within this range.

Remember, a good estimating system produces more than just a *Price*. It also produces a *Plan* and a *Process* that will help you run your jobs and your company, as well.

The key is to know your company and your game plan (or strategy) by means of an estimating budget and a solid estimating methodology. Then, and only then, can you play the estimating game and win.

Table 38.13 displays the same project estimated utilizing all six other pricing methods.

********* Table **38.13 Peterson Residence Bid Analysis Using All Six Methods*******

[B] G&A Overhead Recovery for the Peterson Residence Bid

A 47 percent markup on labor was utilized in the MORS method. This is a reasonable percentage to expect for a company using a $10 OPH. This percent would have to drop to 22.4 percent in order to match the OPPH price calculated at $23,719. Such a drop in G&A overhead recovery, however, would be unrealistic for this company if you were using the MORS Method to price your work.

Table 38.14 provides an encapsulation of the pros and cons of the various bidding methods. You can draw your own conclusions from the comparison.

******** Table **38.14 Bidding Methods Pros & Cons ******

The more often you conduct such an analysis of your bids, the more skilled you'll become in distinguishing the nuances of the various estimating methods. Had we used the PPH of $5 to price this project, our price would have been lowered by $1,032 to $22,687. It would have met our yearly budget projections for the company and made us more competitive had it been necessary.

[B] Margins and Markups for the Jones Residence Bid

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Figure 38.15 displays the Manual Recap Bid Worksheet for the Jones residence from Chapters 11, 12 and 14. Totals from the Phase I and II bid worksheets are transferred onto it. Phase III Markups are then added at the bottom of the worksheet using a $10 OPH amount and a 10 percent net profit margin. Figure 38.16 provides a BAR worksheet for the Jones residence project.

****** Figure 38.15 Manual Bid Recap Worksheet for the Jones Residence Bid ******

****** Figure 38.16 BAR Worksheet for the Jones Residence Bid******

[AP] ACTION POINT

Complete Exercises 13-1 and 13-2 in Appendix A.

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This article was adapted from James Huston's new book and audio book, ***How to Price Landscape & Irrigation Projects*** and his previous book, ***Preparing for and Responding to a Down Economy***. The author is president of J.R. Huston Enterprises, Inc., which specializes in construction and services management consulting to the Green Industry. Mr. Huston is a member of the American Society of Professional Estimators and he is one of only two Certified Professional Landscape Estimators in the world. For further information on the products and services offered by J.R. Huston Enterprises, call 1-800-451-5588, e-mail JRHEI at jrhei@jrhuston.biz or visit the J.R. Huston Enterprise web site at http://www.jrhuston.biz.