

Vacuum excavation has gone from niche to normal on Sacramento utility and civil jobs. If you are still pricing everything like it will be done with a 320 and a laborer in the trench, you are either losing money or losing bids.

The challenge is that vacuum trucks change almost every line in your estimate. Labor makeup, production, risk profile, even where your profit actually comes from. Once you understand those pieces and plug in realistic Sacramento numbers, pricing becomes straightforward and repeatable.

I am going to walk through how experienced contractors in the region think about it, using real world assumptions, not brochure numbers.

## **What vacuum excavation actually is (and what it is not)**

At its simplest, vacuum excavation uses high pressure water or compressed air to break up soil, then a powerful vacuum to suck the slurry or spoils into a debris tank. You excavate without teeth or buckets touching the utility.

Most Sacramento work uses hydro excavation, meaning water. Strictly speaking:

- Hydro excavation uses pressurized water to loosen soil, then vacuums it out as a slurry.
- "Vacuum excavation" is the broader term and can include air excavation, but in many specs and bid docs people use the terms interchangeably.

From a pricing standpoint, hydro excavation usually runs a bit slower than a mini or a 20 ton excavator in open cuts, but it drastically reduces the chance of breaking fiber, gas, or old clay sewer. When you are potholing existing utilities or trenching in crowded streets, the lower repair risk is where vacuum excavation pays for itself.

Vac trucks do not replace every excavator on a job. They compliment them. Understanding where they belong is step one of solid pricing.

## **Why Sacramento is its own animal for excavation pricing**

Sacramento is not Phoenix and it is not Seattle. Local conditions shape both production and risk.

Clay and loam soils dominate much of the valley floor. Most of the year, especially after winter storms and irrigation, you are working in cohesive, often wet soils. In summer, upper lifts can bake hard while lower layers stay moist. Hydro excavation usually tolerates this better than a skid or mini trying to peel off thin lifts without overcutting.

Add in a few Sacramento specific realities:

Traffic control. Working near Watt, Folsom Boulevard, Arden, or downtown grid means lane closures, flaggers, and sometimes night work. Your truck might only cut for five hours on a 10 hour shift because of setup, cones, and holds from the traffic inspector.

Utility congestion. Older neighborhoods and the downtown grid have overlapping, undocumented utilities. Gas, multiple telecomm conduits, aging clay sewer, and storm within a crowded right of way. Vacuum excavation is often required by spec for potholing and within certain distances of known utilities.

Groundwater and rivers. Near the American and Sacramento rivers, groundwater can be shallow. Hydro excavation can turn a manageable damp trench into soup if you do not control your water and spoil management.

All of that has to be reflected in your rate and production assumptions.

# Core cost components when you price vacuum excavation

Every vac excavation bid I have built or reviewed for the Sacramento market breaks into the same basic cost buckets:

1. Truck and equipment cost
2. Crew labor and benefits
3. Travel, mobilization, and on site non-productive time
4. Disposal and water supply
5. Overhead, risk, and profit

If any one of those gets “guesstimated,” your number moves from disciplined price to wishful thinking.

## 1. Truck and equipment cost

This is where many newcomers to vacuum excavation underestimate the commitment.

A new full size hydro vac truck, capable of deep excavation and long hose runs, typically runs in the 450,000 to 650,000 dollar range depending on tank size, blower, and options. A smaller trailer or compact vac can be under 200,000 dollars, but capacity and reach are limited.

If you own the truck, your internal “how much is a vac ex to buy” question translates directly into your hourly rate. You need to recover:

- Loan or lease payment
- Depreciation
- Maintenance (pumps, heaters, blower rebuilds)
- Tires and wear items
- Insurance

For Sacramento work, contractors often target a base truck rate between 225 and 325 dollars per hour for a large hydrovac with operator, depending on contract length and whether disposal is included. Specialty or short term work can go higher.

If you sub the truck from a hydrovac company instead of owning, you may see 275 to 400 dollars per hour billed to you, and you resell that at a markup or simply pass it through.

## 2. Crew labor and certifications

A productive vac excavation crew is usually 2 or 3 people. Typical setup:

- Hydrovac operator / driver
- Swamper / nozzle operator
- Sometimes a third laborer or locator when conditions demand it

Labor cost depends on union vs non-union, prevailing wage, and shift. For public work in Sacramento County or City, you are usually under prevailing wage determinations with benefits. That can put your fully burdened hourly cost (wages, payroll taxes, benefits, and workers comp) in the 70 to 110 dollars per hour range per person.

On top of base wages, you must account for:

CDL and endorsements. A CDL is usually required for hydrovac jobs because the trucks are heavy and often over 26,001 pounds GVWR. Whether you need a tanker endorsement for a hydrovac truck depends on how your state and CHP interpret the water and slurry tanks. Many California operators carry a tanker endorsement to stay on the safe side and avoid arguments at the scale.

Excavator and equipment certifications. California does not require a specific "vac excavation license," but you do need operators who meet Cal/OSHA training on excavation hazards, confined spaces where applicable, and equipment operation. If you are running a separate excavator on site, you follow typical "what certifications do you need to run an excavator" guidance: employer training and evaluation, and any site specific requirements from owners or unions.

Training specific to vacuum excavation. At a minimum, your crew should have vendor training on the truck, lockout/tagout, high pressure water safety, and local dig-safe law. Many owners now require documentation that your crew understands the limitations of vacuum excavation and how to avoid hitting utilities with the wand.

Higher skill and training cost more on paper, but they also reduce "unbudgeted repairs," which can destroy your margin for the whole job.

### **3. Travel, mobilization, and standby**

Sacramento is spread out. If your yard is in West Sac and the job is in Folsom or Elk Grove, you may burn an hour or more of travel in each direction. That truck is expensive even when it is just rolling.

Most experienced estimators handle this one of two ways:

They bill portal to portal, charging the full vac truck rate from yard departure to yard return, or they add a flat mobilization charge per day or per job, plus a minimum number of on site hours.

Whichever approach you use, keep it consistent. Otherwise you win jobs because you accidentally gave away unpaid drive time.

Do not forget non-productive on site time. That includes waiting for traffic control setup, locates to be re-marked, concrete slurry to be cut, or inspectors to show up and approve. You want a realistic utilization factor. For city street work with lane control, assuming 60 to 70 percent productive nozzle time in a shift is more honest than assuming the truck cuts non-stop.

### **4. Disposal and water**

Vacuum excavation pricing lives or dies on how far you haul spoils and where you get water.

Water supply. Some jobs allow connection to a hydrant with a permit and meter from the city or local water agency. Others require trucking water in from your yard or a fill station. Hydrant fills are usually cheaper per gallon, but you pay for the meter, backflow, and sometimes a permit. A fill at your yard adds driving time.

Spoil disposal. Hydro excavation generates a slurry, not dry dirt. That changes everything. You may need to dewater in a pit on site, haul to an approved slurry dump, or take it to a landfill that accepts wet spoils. Fees in the Sacramento area vary widely, so your estimate should include the specific facility cost plus travel time and any dumping minimums.

Multiple short dumps in a day can crush production. If your truck has an 8 yard debris tank and you are working in wet silt, you may haul out far less than 8 in place cubic yards per trip because of water content. Build a realistic number of dumps and their cost into your unit pricing.

## 5. Overhead, risk, and profit

Vac excavation changes your risk profile. You reduce the chance of catastrophic utility damage but increase your exposure to truck breakdowns, weather impacts on slurry, and regulatory scrutiny.

You should sharpen your pencil on indirects:

- General liability and auto insurance
- Office and estimating overhead
- Shop time and parts inventory
- Training and safety program costs

On top of that, you need margin for jobs that simply go sideways. The safest utilities are often the oldest and least documented. A run of bad locates or abandoned infrastructure can stretch a “simple” day of potholing into two or three.

Savvy contractors rarely survive long term in this space with less than 15 percent true profit built into their rates. On high risk, tight work in downtown or near major transmission lines, you may decide you need more.

## Production: how much and how fast can a vac truck really excavate?

Your entire pricing strategy hangs from production. Two questions come up on almost every estimate:

How much can a vac ex excavate in a day, and how deep can vacuum excavation go?

### Realistic daily production

Manufacturer brochures like to throw out big numbers, but Sacramento traffic, inspectors, and real soils change things.

For potholing utilities in relatively soft fill, plan for something [Sacramento Vacuum Excavation](#) like:

- 20 to 40 test holes per 10 hour shift, each 12 to 18 inches diameter and 4 to 8 feet deep, with a seasoned crew and short haul to a dump.

For narrow trenching:

- In good conditions, 60 to 120 feet of trench per day at 12 to 18 inches wide and 4 to 5 feet deep is achievable.
- Hardpan, cobbles, or heavily reinforced concrete removal ahead of you can drop that sharply.

“How long does it take to dig a 100 ft trench?” is really a question about width, depth, soil, and site restrictions. For a typical 12 inch wide, 4 foot deep utility trench along a Sacramento street with traffic control and multiple utilities, I would ballpark anywhere from half a day to a full day with a hydrovac, including multiple potholes and tie-ins. On greenfield private property with no traffic control, it could be faster.

For bulk volume, like back reaming a pit or exposing a manhole, a large hydrovac might move 10 to 25 in place cubic yards per day in real conditions. When someone asks, “How much to excavate 200 cubic yards with a vac truck?” I immediately think how many days at those production rates, then layer in mobilization and disposal.

At a mid-range 15 yards per day, 200 yards is roughly 13 to 14 working days of truck time, plus weather and access contingencies. At 300 dollars per hour for 10 hour shifts, that truck alone is roughly 39,000 to 42,000 dollars before labor markup, disposal, and overhead.

## Depth limits and shoring rules

“How deep can vacuum excavation go?” is different from “How deep can you dig without shoring?”

Vacuum excavation itself can reach impressive depths. With proper hose and tooling, 20 to 30 feet deep is common, and on some specialty rigs, deeper. The limitation usually comes from:

- Hose length and friction losses
- Stability of the hole or trench walls
- Access for crew and safety

Regulators focus on worker safety. Cal/OSHA standards align closely with federal OSHA excavation rules. A few key ideas affect your pricing:

The 4 foot rule in excavation. When a trench reaches 4 feet deep and there is a chance of hazardous atmospheres, you need testing and safe entry procedures. This is common near sewers, fuel stations, or heavy organic material.

The 5 foot protective system rule. At 5 feet deep or more, you generally need a protective system such as shoring, shielding, or proper sloping, unless the excavation is entirely in stable rock. When someone asks “How deep can you excavate without shoring?” or mentions the 5 4 3 2 1 rule for excavation or 3/4/5 rule for excavation, they are usually referring to field mnemonics for these depth triggers. The exact text lives in OSHA and Cal/OSHA standards, but the safe habit is simple: do not put people in a trench 5 feet or deeper without a protection system designed by a competent person.

Protected access at 4 feet. At 4 feet deep, ladders or safe access must be provided, typically within 25 feet of workers.

From a pricing standpoint, deeper work with required shoring or boxes slows production and adds rental or equipment ownership costs. Vacuum excavation can keep workers out of the trench longer, but once you need a person down there to tie utilities, shoring rules apply.

## Why vacuum excavation is not for every cubic yard

For mass excavation, building pads, or clearing 10 acres of land, conventional excavators and scrapers still win. The question “How much would it cost to excavate 10 acres of land with a hydrovac?” is almost a trick. The truck is the wrong tool, so the cost would be absurd. The right comparison is between hydrovac and a mini or backhoe in tight utility environments, not large open sites.

## Putting numbers on paper: a practical pricing workflow

Here is one way to build consistent vacuum excavation pricing in Sacramento without reinventing your spreadsheet on every job:

1. Define the scope and method
2. Calculate direct hourly cost
3. Estimate realistic production and hours
4. Add disposal, permits, and traffic control
5. Apply overhead and profit, then stress-test the number

### 1. Define the scope and method

Start by deciding what must be done by hydrovac and what can be done with a conventional excavator. Often the profitable jobs use a blend. For example:

- Hydrovac for utility potholing across Watt Avenue, exposing all crossings to 2 feet below the planned invert.
- Traditional excavator for open trench in the park once clear of utilities, using vac only at crossings.

Clarify whether you are quoting a lump sum, unit price per cubic yard, or a day rate. Owners increasingly like day rates for hydrovac because conditions are unknown, while you prefer unit pricing if the work is well defined.

## **2. Calculate your direct hourly cost**

Build your own "what does excavation cost per hour" from the ground up.

For the vac truck, add:

- Ownership or rental cost per hour, based on realistic annual utilization
- Fuel and maintenance per hour
- Insurance allocated per hour

For labor, include each person on the crew, including a share of the foreman's time if they oversee multiple crews.

If your fully burdened hydrovac operator is 85 dollars per hour, your swamper is 70 dollars, and your true truck cost is 140 dollars per hour, you are already at 295 dollars per hour direct cost. Then you layer overhead and profit.

## **3. Estimate production and total hours**

This is where you set expectations for "how much does vacuum excavation cost" in a way the owner can understand.

Suppose you are asked to price vacuum excavation for 100 feet of 12 inch wide, 4 foot deep trench in a congested downtown alley. To get volume in cubic yards, you calculate:

Length × width × depth, then convert cubic feet to yards.

100 feet × 1 foot (12 inches) × 4 feet equals 400 cubic feet.

You divide by 27 for cubic yards because a cubic yard is 3 feet by 3 feet by 3 feet, or 27 cubic feet. So  $400 \div 27$  is about 14.8 cubic yards in place.

If your crew can conservatively produce 10 in place cubic yards per 10 hour shift under those conditions, you quote roughly 1.5 days of truck time, plus mobilization. If your loaded billable rate is 375 dollars per hour for a two person crew and truck, your gross on the excavation portion is about 5,625 dollars for 15 hours of work.

Then you sanity check:

- Are lane closures required? If yes, add traffic control cost.
- Is there night work or overtime? Adjust labor rates.
- Is there a minimum daily charge for mobilization? Make sure you meet it.

For questions like "How much does it cost for a vac excavation?" or "How much does vacuum excavation cost per day?" a simple, honest answer in Sacramento currently lands around 3,000 to 4,500 dollars per day for a fully crewed large hydrovac, depending on shift and inclusion of disposal.

## **4. Add disposal, permits, and traffic control**

If the job generates 15 cubic yards of wet spoils per day, and your local facility charges 20 to 40 dollars per cubic yard equivalent by weight, you quickly see 300 to 600 dollars per day in dumping fees, plus travel time.

Water permits, hydrant meters, and any environmental fees go in the same bucket. For city hydrants, you normally pay a setup charge plus per gallon or flat daily fee for the meter.

Traffic control. On jobs near major Sacramento arterials or in Caltrans right of way, a traffic control subcontractor might cost 1,500 to 3,500 dollars per day depending on lane closures, flaggers, and sign packages. Some owners treat that separately from vacuum excavation, others roll it into one unit price.

Permits and inspections. Excavation in city streets and county right of way usually requires encroachment permits and sometimes lane closure approvals. The fee itself may be modest, but the time and risk for delays should be reflected in your overhead [Sacramento Vacuum Excavation](#) allocation.

## 5. Overhead and profit, then reality check

When you apply overhead, be consistent across bids: a fixed percentage of direct job cost, or a blended company-wide burden rate.

Profit should be intentional, not whatever remains. For specialized vac excavation work, 15 to 25 percent markup on top of fully burdened cost is common, rising with higher risk or one-off emergency work.

Before you submit, take a moment to ask:

The advertisement features a red and yellow geometric background. On the left, the BESS logo is at the top, followed by 'SACRAMENTO VACUUM EXCAVATION' in large bold letters. Below this is a paragraph about the team's dedication to utility safety. Further down is the company name 'Bess Utility Solutions Sacramento' and contact information including address, phone, and website. A QR code is at the bottom left. On the right, a photograph shows a large metal pipe being excavated from the ground.

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- If production drops by 30 percent because of harder soils or slow inspectors, am I still making money?
- If we break one water service or telecom, how many repair dollars before we eat the whole job?
- Does this scope quietly assume hydrovac will magically do mass grading or impossible depths?

If the job depends on heroic production or zero surprises, your price is probably too low.

## Common misconceptions and how they affect pricing

Over time I have seen the same misunderstandings blow up bids.

“Vacuum excavation is always safer, so I can cut the safety budget.” Safer around utilities, yes, if used correctly. You still must comply with OSHA and Cal/OSHA trench rules, including protective systems at depth, inspections, and egress requirements. OSHA’s 3 most cited violation categories often include fall protection, hazard communication, and scaffolding or similar protections, not just excavation. Cutting corners on safety never pays for itself.

“I can dig a trench with a pressure washer instead of a vac truck.” I occasionally hear homeowners ask “Can I dig a trench with a pressure washer?” In professional work, that is both inefficient and unsafe. Pressure washers lack the controlled nozzles, containment, and vacuum capacity of hydrovac units. They create mud with no way to remove it and raise clear safety issues.

“Hydrovacs are overkill compared to a mini-excavator.” Sometimes true, especially on clean, greenfield work. In tight, utility-rich downtown Sacramento, a few cut fiber lines or gas hits will change your opinion quickly. Owners have grown more aware of indirect costs of outages, and more contract specs explicitly call for vacuum excavation near critical utilities.

“Only young operators can handle vac trucks.” I get variations of “Is 50 too old to become a heavy equipment operator?” It is not, provided physical ability and training are in place. Hydrovac work can be demanding, but experience, patience, and judgment are worth as much as raw strength. For pricing, what matters is actual crew efficiency, not age.

## When does vacuum excavation beat the bulldozer and 320 on cost?

People sometimes ask in a half joking way, “What’s stronger than a bulldozer?” or “Is a Cat 320 a 20 ton excavator and all I really need?” For moving sheer volume on open ground, yes, big iron rules. For delicate work over unknown utilities, a hydrovac often wins on total project cost even if unit excavation cost per cubic yard is higher.

Vacuum excavation pays off when:

- Utility density is high or maps are unreliable.
- The owner charges back all utility strikes.
- You are working in paved or landscaped areas where overcuts are expensive to restore.
- Noise and vibration constraints make traditional excavation less practical.

Traditional excavators remain the “most used excavator” type for mass earthwork. Vacuum trucks are a specialist tool. Smart Sacramento contractors learn to toggle between the two, often using vac trucks for discovery and tight work, then letting the 20 ton machine follow along once the path is clear.

## Bringing it all together on your next Sacramento bid

If you want a stable, repeatable method for how to price out excavating jobs that involve vacuum excavation in Sacramento, keep your mindset simple:

Know your true hourly cost, be honest about production, and respect the limits and strengths of the tool.

Start by separating the work where hydrovac is mandatory or smart from the work that belongs to traditional excavators. Build a clear hourly rate for your truck and crew, grounded in ownership, labor, disposal, and overhead. Use realistic daily production ranges based on Sacramento soil and traffic, not optimistic vendor numbers. Convert width, depth, and length to cubic yards properly by dividing cubic feet by 27, then stress-test your hours with worst-case conditions in mind.

Vacuum excavation will never be the cheapest way to move dirt on a per yard basis. It is the cheapest way to safely expose and work around buried utilities when the stakes are high. If your pricing reflects that reality, you will win the right jobs, avoid the wrong ones, and keep your vac trucks busy without working for free.