

When someone asks, "How much would [Sacramento Vacuum Excavation](#) it cost to excavate 10 acres in Sacramento with a vac truck?", what they usually want is a clean number they can plug into a budget. The honest answer is that the number exists, but the moment you see it, you will almost certainly change the method, because vacuum excavation is built for surgical digging, not bulk earthmoving.

The useful way to approach this question is to break it down: what vacuum excavation actually is, what it costs in the Sacramento market, how fast it can really move soil, and where it makes sense on a 10 acre site. Once you see the math, the role of a vac ex truck becomes very clear.

What vacuum excavation actually is

Vacuum excavation is a non destructive digging method that uses either high pressure water or compressed air to loosen soil, then a powerful vacuum to suck that soil into a debris tank. On most construction sites, people call it hydrovac when it uses water and air-vac or dry vac when it uses compressed air.

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Instead of ripping the ground open with teeth and a bucket, you "dissolve" or "fluff" the material and pull it out through a hose. That gives you a few advantages:

- You can see and expose utilities with very low risk of damage.
- You can work in tight alleys, over sidewalks, or next to foundations where a full sized excavator will not fit.
- You can dig safe, narrow potholes and trenches with less over excavation.

When people search "What is vacuum excavation" or "What is the difference between hydro excavation and vacuum excavation," they [Sacramento Vacuum Excavation](#) are usually trying to understand whether it replaces a

conventional excavator or complements it. In practice, on commercial and public work in Sacramento, vacuum excavation is a specialty tool used alongside traditional machines.

Hydro vac vs air vac on a real job

Hydro excavation uses water jets to cut the soil. It is usually faster in compacted clays and mixed fills, which you see a lot around older Sacramento neighborhoods and roadways. The tradeoff is spoils management: the water turns the material into slurry. That adds weight, affects how you haul it, and can require special dump sites.

Air vacuum excavation uses compressed air to fracture the soil, then vacuums it dry. It is slower in hard material but keeps the spoils dry and reusable for backfill. On sites where you want to reuse the native soil, or where you are paying high dump fees, dry vacuum excavation can win on total cost even if the truck runs more hours.

When you price work, the distinction matters more than the marketing language. In many proposals you will see “vacuum excavation” as a catch all term, so you need to confirm whether the vendor is planning hydrovac or air vac, and how spoils will be handled.

How deep can vacuum excavation go?

From a practical standpoint, the question “How deep can vacuum excavation go?” is less about the physics of suction and more about productivity and safety.

On paper, vacuum excavation systems can pull material from 20 feet and deeper. Manufacturers like to quote big numbers. In the field, the limiting factors are:

- Hose length and diameter.
- Friction losses.
- How heavy and sticky the material gets at depth.
- How safe your excavation is without shoring.

On most utility projects, exposing lines in Sacramento right of way, we routinely work in the 5 to 8 foot depth range. Going deeper is absolutely possible, but OSHA and Cal/OSHA rules start driving the setup.

Safety rules that matter for depth

Several excavation rules show up in conversations about vac trucks, because even a “soft dig” is still an excavation in OSHA’s eyes.

The “4 foot rule in excavation” refers to the requirement for safe access and egress. When a trench is 4 feet deep or more, you need a ladder, ramp, or stairway within 25 feet of lateral travel. That applies even if you dug the trench with a hydrovac.

The questions “How deep can you dig without shoring” and “How deep can you excavate without shoring” both aim at the same topic. For most soil types, once you hit 5 feet deep, OSHA expects a protective system unless a competent person can verify that there is no risk of cave in. In real world practice, on commercial work, we plan on shoring or sloping once we hit 5 feet.

There are also rules of thumb like the 5 4 3 2 1 rule for excavation or the 3/4/5 rule for excavation, which different companies use to simplify slopes and benching. The exact ratios depend on your soil classification, but the message is stable: deeper holes require more horizontal room or engineered support. Vacuum excavation does not exempt you from that.

That is why deep vertical shafts dug purely by vacuum are relatively rare. On a 10 acre site, you are generally using vac ex for targeted work around utilities or structures, not for your mass excavation.

How much can a vac ex excavate in a day?

Productivity is where the dream of vacuum digging 10 acres meets reality.

On mixed urban soil in Sacramento County, a single hydrovac truck with a good crew often averages somewhere in the range of 8 to 25 cubic yards of actual material removed per day. The spread is wide because of:

- Soil type and moisture.
- How far the truck sits from the hole.
- Traffic control and hose handling.
- Weather, especially winter rain.

Under ideal conditions, high production crews can top 30 cubic yards per day when slot trenching in relatively clean, soft ground. On difficult potholing with lots of hand probing and traffic constraints, you might be closer to 5 to 10 cubic yards per day.

When clients ask “How much can a vac ex excavate in a day” or “How much does an excavator excavate in one hour,” what they usually want is a comparison. A 20 ton excavator such as a Cat 320, which many people think of when they ask “Is a cat 320 a 20 ton excavator” or “What is the most used excavator,” can move hundreds of cubic yards per day in mass excavation. A vac truck is in a different category. It trades brute force for safety and precision.

On a per hour basis, a midsize excavator, properly matched with trucks and dozers, often produces 30 to 60 cubic yards per hour in mass cut and load. A hydrovac truck might average 1 to 3 cubic yards per hour when you include all the setup, daylighting, traffic control, and spoils management. They are not competing for the same role.

The math of excavating 10 acres with vacuum excavation

Now tie those pieces together.

Ten acres is 435,600 square feet. When someone says “How much would it cost to excavate 10 acres of land?” the missing piece is depth. Stripping 6 inches of topsoil is a completely different project from cutting 4 feet for a building pad.

Here is a simple volume example using the common question “How much to excavate 200 cubic yards” as a scale reference.

If you excavate 10 acres to 2 feet deep, the volume looks like this:

- Area: 435,600 square feet.
- Depth: 2 feet.
- Volume in cubic feet: $435,600 \times 2 = 871,200$ cubic feet.
- To convert to cubic yards, you divide by 27, because 1 cubic yard equals 27 cubic feet (3 ft $\times$ 3 ft $\times$ 3 ft). That is why estimators constantly talk about “Why do you divide by 27 for cubic yards.”

$871,200 \div 27 \approx 32,267$ cubic yards.

So a 2 foot cut over 10 acres is roughly thirty two thousand two hundred sixty seven cubic yards. Compare that to the earlier reference point of 200 cubic yards:

- 200 cubic yards is a solid day or two for a vac ex truck, depending on conditions.
- 32,000 cubic yards is 160 times that.

If a vacuum excavation crew moved 20 cubic yards per day, every single day, no down time, that is over 1,600 crew days of excavation. Even with multiple trucks, the numbers climb very fast.

At typical Sacramento productivity, you do not use vacuum excavation for that kind of mass grading. You use scrapers, excavators, and bulldozers, plus compactors and trucks. “What is stronger than a bulldozer” is almost a philosophical question, but for pure dirt production on 10 acres, scrapers and large excavators win every time.

The practical answer is that on a 10 acre site, vacuum excavation will usually handle:

- Potholing and daylighting utilities.
- Tight access trenches near buildings and in streets.
- Tie ins where breaking a pipe or fiber line would be catastrophic.
- Work in environmentally or archeologically sensitive pockets.

The bulk earthwork gets handled by traditional equipment.

What does vacuum excavation cost per hour in Sacramento?

Market rates move, but the pattern is consistent. When people search “How much does vacuum excavation cost” or “What does excavation cost per hour,” they want a bracket that fits bidding and budgeting.

In the Sacramento region, for a hydrovac truck with a trained operator and swamper, you typically see:

- Roughly 300 to 450 dollars per hour for a standard hydrovac unit, with a 4 to 8 hour minimum.
- Premium rates of 450 to 600 dollars per hour for specialty trucks, night work, or emergency response.

Dry vacuum excavation trucks can fall in the same range or slightly higher, depending on the vendor and the complexity of the job.

Those rates usually include fuel, wear on a very expensive machine, and labor. Some companies charge disposal separately. Others bundle a certain amount of hauling and dump fees into the hourly price.

“Is a CDL required for hydrovac jobs?” In nearly all cases, yes, because hydrovac trucks are heavy commercial vehicles. Many employers also like drivers to hold a tanker endorsement, which ties into the question “Do you need a tanker endorsement for a hydrovac truck.” Hydrovacs carry large water tanks and debris tanks, and some regulators interpret that under tanker rules. The answer can depend on tank configuration and how your state applies federal rules, but in practice, Sacramento area operators often carry both CDL and tanker endorsement to be safe.

All that training and licensing is baked into the hourly rate.

Estimating the vacuum excavation portion on a 10 acre job

When we talk about “How much would it cost to excavate 10 acres of land in Sacramento using vacuum excavation,” the relevant framing is usually:

You will not vac out the entire site. You will use vac ex on critical, sensitive, or constrained areas of that site.

The cost then depends on:

- How many utility crossings need to be daylighted.
- How much trenching near existing utilities must be non destructive.
- Local requirements in the public right of way.

For example, suppose on a 10 acre mixed use development you have:

- 120 proposed utility crossings that intersect existing gas, water, telecom, and electrical.
- City standards or franchise utility rules that require non destructive locating within a certain tolerance.
- Added vacuum work near existing structures and in busy streets.

If each pothole averages 1.5 hours of hydrovac time, including setup and cleanup, that is 180 truck hours. At 350 dollars per hour, those potholes alone cost about 63,000 dollars. That is a realistic mid sized number on a large urban infill project.

Now add targeted slot trenching:

Maybe you have 1,000 linear feet of trench that must be dug or pre cleared with vacuum to avoid damage to dense utilities. If your crew averages, say, 20 feet per hour of usable trench in those tight zones, that is 50 truck hours. At 350 dollars per hour, add another 17,500 dollars.

Now your vacuum excavation portion is around 80,000 dollars on a 10 acre job, without touching mass grading. That is often the scale where vac ex sits: a significant, specialized line item that protects far more expensive assets and schedule.

What would it cost to vac ex the entire 10 acres anyway?

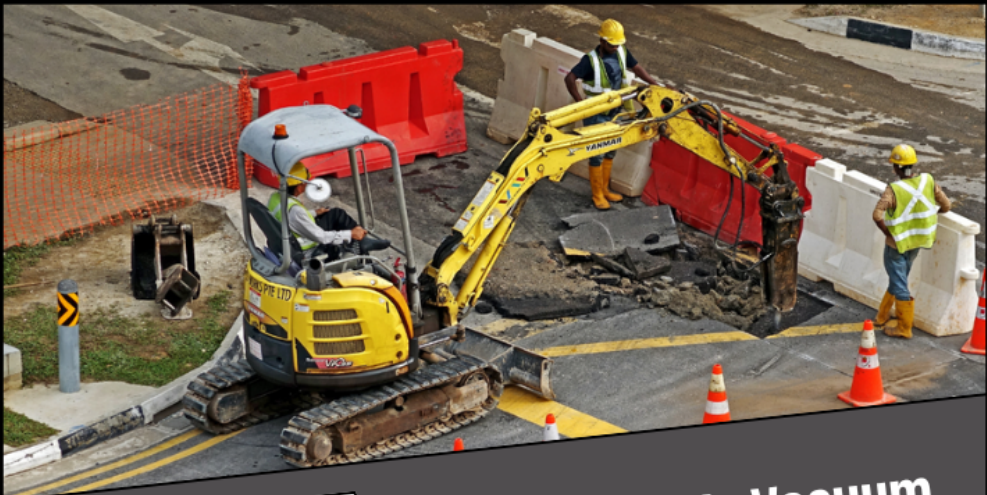
Sometimes a client presses: "Fine, but what if we really did use vacuum excavation on everything?"

Assume the earlier case of 32,000 cubic yards at 2 feet deep. Assume an optimistic productivity of 25 cubic yards per truck per day, every day, with no weather or breakdowns.

- $32,000 \div 25 = 1,280$ truck days.
- At 10 hours per day, that is 12,800 billable truck hours.

At 350 dollars per hour, that comes to 4.48 million dollars in truck time, not counting traffic control, disposal, or shoring. At 450 dollars per hour, it is 5.76 million. Those numbers do not pencil out against conventional mass excavation, which might be on the order of 8 to 20 dollars per cubic yard in a competitive Sacramento market, depending on haul distances and complexity.

That rough comparison is why you almost never see vacuum excavation specified for full site mass grading. Its role is risk management around utilities and structures, not bulk dirt movement.



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Buying a vac ex truck vs hiring one

A few owners with a large portfolio ask "How much is a vacuum excavation truck" or "How much is a vac ex to buy," thinking they might self perform.

Prices vary with size and options, but new hydrovac or air vac trucks commonly fall in the 400,000 to 700,000 dollar range, and high end builds can exceed that. Used units can be significantly cheaper, but then you inherit someone else's wear and maintenance backlog.

If you only need vacuum excavation occasionally on a 10 acre project, owning rarely pencils out. The carrying costs, required CDL operators, insurance, maintenance, and utilization targets quickly become their own business. Most general contractors in Sacramento simply subcontract vacuum excavation to specialists and focus their capital on excavators, dozers, and grading equipment.

Training, certifications, and safety culture

Vacuum excavation feels safer than swinging a bucket over utilities, but it still lives under the same regulatory umbrella. When people ask "What kind of training is required for vacuum excavation" or "What certifications do you need to run an excavator," they are getting at the same issue: who is allowed to dig and under what rules.

There is no unique federal "vacuum excavation license," but you typically want:

- CDL drivers with any required endorsements.
- Operators and laborers trained as "competent persons" under OSHA excavation standards, or supported on site by a designated competent person.

- Site specific training on soil classification, shoring systems, confined space hazards, and utility locating.

OSHA's 3 most cited violations in construction often involve fall protection, hazard communication, and scaffolding, but excavation and trenching violations appear frequently in serious accident reports. For vacuum excavation, trench safety, struck by risks from hose and boom movement, and exposure to pressurized systems all matter.

Many companies also follow internal rules like the 35 foot rule regarding ladder placement and access, or variants of 5 4 3 2 1 and 3/4/5 rules for excavation slopes, as simple field reminders. Regardless of the shorthand, the underlying approach is the same: avoid cave ins, avoid hits on buried infrastructure, and give workers a safe way in and out of the hole.

Soil, moisture, and timing in Sacramento

Anyone who has tried to dig knows that "Is it better to dig a hole when the ground is wet or dry" does not have a one word answer. In the Sacramento Valley, soil conditions swing significantly between seasons.

In the dry season, you deal with hard, compacted clays and silts. Hydrovac units may need higher water pressures and more time to cut, but spoils are often more manageable. In the rainy season, the top layers soften, which can speed up initial penetration, but spoil becomes heavier and messier. Slurry management, disposal, and access all get harder.

Vacuum excavation crews schedule around these patterns where they can. On a 10 acre project with a long schedule, you might prioritize known vacuum zones during stretches of stable weather. The more you can avoid dragging heavy hoses through mud and flooding your spoils tanks with waterlogged material, the more productive your hours become.

How to think about pricing vacuum excavation on your project

When I work with owners or GCs to figure out "How to price out excavating jobs" that include vacuum work, we walk through the same mental checklist.

Here is a compact version that often helps:

- Define what absolutely must be vacuum excavated: utility crossings, sensitive areas, public right of way requirements.
- Estimate volumes in cubic yards or at least linear footage and typical sizes, then convert those into expected truck hours using production rates from similar past work.
- Confirm local constraints: traffic control, noise curfews, disposal rules, and any city or utility standards that drive method choices.
- Ask vendors for both hourly rates and typical production in conditions similar to your site, not just their best case brochure numbers.

When you first do this, you might be tempted to treat vacuum excavation as a flat "cost per cubic yard." The reality is that setup, travel, and cleanup time mean that two small, scattered 10 yard potholing jobs can cost more than one continuous 40 yard slot trench. Thinking in truck hours tied to realistic daily production leads to better budgets.

Where vacuum excavation shines on a 10 acre Sacramento project

If you step back from the math, the big picture is straightforward.

Vacuum excavation is not how you strip and cut 10 acres. Heavy iron is. On a site of that size, you will still see the classic spread: dozers, scrapers, excavators, maybe graders and rollers. For people who ask "What are the three types of excavators" or "What are the four types of excavation," you are usually looking at tracked excavators, wheeled excavators, mini excavators, plus trenching, cut and fill, muck, and channel excavation as categories.

Vacuum excavation fits beside that lineup as a specialist. It protects existing utilities, lets you dig in backyards and sidewalks that a full excavator cannot reach, and keeps you on the right side of utility franchise agreements and city standards. It helps you avoid the kind of hits that can shut down a 10 acre job, or worse, injure someone and pull OSHA onto the site.

On most real Sacramento projects, that is worth every penny of the 300 to 450 dollars per hour you pay for a vac truck, even if you are only moving 10 or 20 cubic yards of soil in that time.

If you approach your 10 acre excavation with that mindset, the cost question becomes much easier. Let the big machines handle the mass earthwork at low cost per cubic yard. Reserve vacuum excavation for the places where cutting corners could cost you a lot more than a few extra truck hours.