Constructing a Gas Main Extension

This document has been written by Phil Trubey, a Rancho Santa Fe homeowner, to help other homeowners acquire natural gas service. It has been written based on the experience of building a 6,248 foot gas main extension to service about 40 houses during the first half of 2005.

Why Natural Gas?

The majority of both the Rancho Santa Fe Covenant and non-Covenant areas do not have access to natural gas main service and rely instead on on-site propane tanks and monthly propane deliveries.

Natural gas has been historically cheaper than propane – depending on your usage, you might be able to recover your costs for constructing a gas main extension in 10-15 years or so. It is safer than propane – natural gas is lighter than air, propane heavier, meaning that in a leak situation, propane will more likely accumulate. With natural gas, you no longer need monthly propane truck deliveries, and you never run out of natural gas. With a natural gas service, you can reclaim the space you used for the propane tank, and when it comes time to sell your house, it will increase property values.

Is Natural Gas Near Me?

To find out if there is a natural gas main on your street passing by your house, call San Diego Gas and Electric to find out: 800-411- 7343.

Connecting to an Existing Natural Gas Main

If a natural gas main is running past your property, then it is a relatively simple matter to hookup.

First, contact SDG&E and ask for a meter hookup service order. They will come out and do a preliminary assessment of the costs involved in doing the hookup (road work, etc.). They will then send you a letter asking you to pay a fee and to call them back your when your trench is ready. Typically, the homeowner digs their own 3 foot deep trench to the meter location. A plumber is then hired to connect the gas meter to the house piping.

You will also need to co-ordinate the conversion of all your propane appliances to natural gas when the plumber is unhooking the house piping from the propane tank and re-attaching it to the new natural gas meter. Typical appliances to convert are the water heater, the furnaces, pool heater, stoves, fireplaces, and clothes dryer. Most appliances can be converted with a simple orifice change (contact an appropriate appliance repair company), but some appliances cannot be converted and must be replaced. This is often a good time to buy new appliances for some aging ones.

Before embarking on this project, you should get a qualified plumber to do a load calculation on your current in-house piping. Pipes for propane can have less diameter than for natural has for the same load. Usually when a house is built, the pipes are oversized for propane, and sized appropriately for natural gas, but they may not be in your case. Check before hand and include any new gas loads that you may be adding.

SDG&E typically will want to place your new gas meter beside the house, usually in the same spot where you old propane pipe came into your house. In some cases you may want to place your meter closer to the road, say in front of an automobile gate. This is possible, but you will have some more design work to do with your plumber.

Constructing a Natural Gas Main

If a natural gas main is not near your home, you will have to look into constructing a natural gas main extension. Natural gas mains are financed by private property owners. Most often they are constructed by contractors building a subdivision of houses – the large expense of constructing the natural gas main can be absorbed into the subdivision cost. This model doesn't work very well in Rancho Santa Fe as there aren't many large groups of houses being built anymore – most new construction is in the form of individual lots. The way financing a natural gas main works in this case is that an interested homeowner undertakes the significant time commitment to organize their neighbors to jointly pay for a natural gas main construction.

A quick word about what it is you are building. A natural gas main is typically a 3" diameter yellow plastic-type pipe that is almost always placed under roads, or at the side of a road. It carries gas at a minimum of 60 psi of gas pressure (which gets reduced to very low pressure once it goes through your meter). The gas main is placed 3 feet underground in typically an 18" wide trench. When constructing a sub-division, the same trench that is used for the natural gas pipe is also used for electrical conduit, phone conduit and cable-TV conduit. This is often referred to as a "joint-trench". However, if you are retrofitting a natural gas main after the fact, it is unlikely you are going to be able to co-ordinate these disparate utilities for a combined trenching project, let alone get enough people along the route to pay for it all (telephone pole conversion is expensive in its own right).

During gas main construction, tees are placed in the gas main where they need to branch off to someone's property – the contractor will place a typically 1" lateral pipe from this tee to a few feet onto the homeowner's property.

Once you are done constructing the gas main, you literally give it to SDG&E who in turn maintains it for you and, of course, charges you for natural gas.

The hardest part of the whole project, however, will be contacting and getting payment from the various homeowners along the route. You will not be able to get everyone to pay for the gas main construction. In our case, we ended up with about 40% of the homeowners paying for the gas main construction. The other homeowners essentially got a free ride as they can call up anytime now and get hooked up without having to pay for the gas main construction costs.

So, here are the steps to construct a gas main.

Step 1: Contacting

The first step in the construction process is to find out where the closest gas main is. A quick call to SDG&E will determine where the closest gas main is and your approximate distance from it and what kind of engineering challenges may exist.

The second step is to gauge neighbor interest along the gas main route. You can get contact information for all your neighbors from the Rancho Santa Fe Association – go into the main office and show them your proposed gas main route – they can then give you maps with county APNs identified on them and the associated lot owners, as well as a contact list. Don't be surprised if the contact list is missing phone numbers, or appears incomplete. You can also get contact information from APNs if you know a realtor, or someone who has access to the county tax roll information.

The best way to contact your neighbors is to mail them each a letter outlining what you are attempting to do – include your best guess as to cost. There are three components to the homeowner's cost: their share of the actual gas main construction; their cost to trench on their property to get the gas stub to the house; and SDG&E's hookup fee (for meter setting).

In our project completed in mid-2005, the gas main project cost about $36/foot of gas main, inclusive of all costs. The property lateral trenching can vary from $2K to $15K, depending on length of run, obstructions, etc. SDG&E's meter setting charge can run from free (there is a $1200 rebate) to something like $4K.

After mailing everyone an info package, follow up with phone calls. In my project, I managed to get about 40% of the neighbors along the route to agree to fund the gas main, a fairly high hit rate.

Keeping track of who is and isn't interested can be more of a challenge than it would seem – I had 40 housing lots to keep track of and a lot of them seemed to have special circumstances of one sort of another: house up for sale, or in escrow, or resident only lives in it 6 months of the year, or owned by someone but managed by someone else, etc. I ended up using the Microsoft Outlook contact manager, keeping all the contacts in a separate folder – acquiring everyone's email address was very useful as you need to send out status updates periodically, and a mass email is the quickest way to do this. Also, try to acquire everyone's street address (as opposed to their mailing address which is often a PO Box, or a maybe a Nevada address), as this helps during the construction phase.

I actually went a step further once I had an approximate count of who was interested and who wasn't – I mailed everyone a single "Contact Update & Expression of Interest" form with their contact info filled in and space for them to correct it, along with a stamped return envelope – this way I had a written piece of paper that specified interest in the project.

Step 2: Engineering

Once you feel reasonably confident that you can fund this project, the next step is to get SDG&E to draw up detailed plans of the project. These plans will be used for sending out bid requests, getting permits, and actual construction.

SDG&E charged me about $4,500 for the engineering, at the end of which they sent me a very detailed breakdown of every pipe and fitting needed for the gas main as well as construction blueprint maps showing the gas main route resulting in everything you need for a bid package.

SDG&E will take about 6-8 weeks to get a set of preliminary plans done.

Step 3: Bidding

You typically want to send out the plans to at least six contractors – see the end for a list of contractors that I used – SDG&E can recommend others too. All contractors must have an A license to dig up public roads. In my case, one contractor's bid was dramatically lower than the others. From talking to other contractors, this contractor (Schilling) has pretty much sown up the 'joint-trench' business. After seeing them work and comparing them to a sewer project I did a year before, I can see why: Schilling is very efficient. They own all their own equipment, they have tons of working capital (they didn't send me a first bill until the project was almost completed), and their employees work fast.

When collecting the bids and trying to compare apples to apples, here are some things to watch out for:

- What kind of traffic control have they bid? Depending on your road width and your gas route, you may or may not be able/be allowed to close the road (the winning contractor submits a traffic control plan to the county, but the county ultimately decides what kind of traffic control will be allowed) – make sure your bid is inclusive of whatever the county will allow the contractor to do for traffic control.
- How much asphalt is really needed to be torn up? In our project, very little needed to be torn up, as we managed to put the gas main along the side of the road most of the way, although this wasn't immediately obvious from the SDG&E plans.
- Try to get the contractor to include road compaction testing as part of the fixed price bid – if he doesn't, you have to hire your own compaction testing company and this will turn into a variable cost that is hard to predict.
- Road condition – most bids will have an exclusion that exempts the fixed price bid from poor soils condition, usually as caused by excessive groundwater. Since all bids usually exclude this, it is a good idea to negotiate up front how to handle such overages – standard T&L rates are usually high, so this is a good thing to negotiate (and there may be different ways of figuring out extra costs for bad conditions).
- Ask for a 10% holdback until all signoffs have occurred (both SDG&E and county) and until all liens have been perfected.
- The contractor will need a staging area for materials and equipment – on our project we were lucky in that one of the contributing property owners had a very large empty lot that we could use – it would be a good idea to figure this out before asking for bids.

- In a similar vein, there will be excess dirt that will need to be hauled off somewhere – if you can find a local place (like near the route) that could use some fill, it will help your bid costs.
- Once construction starts, you will likely get new people interested in participating that didn't want to before – so it is a good idea to get up front what the cost of additional stubs will be.

When you get the bids, some bids will have detailed cost breakdowns – go through these breakdowns and make sure the bidder hasn't made a spreadsheet error somewhere (I'm talking from experience here).

On our project, we ended up selecting the low cost bidder – the quality of work was fine.

Note that you can negotiate several "standard" conditions on the contractor's contracts.

Step 4: "Final" Budgeting

Here is the actual budget showing what our 6,248 foot gas main extension cost us. With the winning bid in your hand, you can work out a similar expected cost spreadsheet.

Description	**Amount**
Schilling Mainline	$ 135,128.00
Schilling Fill Sand	$ 8,554.00
Schilling Poly Gas Install	$ 6,350.00
Schilling Compaction Test	$ 5,648.00
Schilling Paving	$ 53,280.00
SDG&E Engineering	$ 8,000.00
County Permit	$ 4,000.00
Contingency	$ 4,382.00
Fund Control Fee	$ 1,398.00
Total	$ 226,740.00

Some notes on this budget:

- We got lucky in our particular project in that the contingency wasn't touched, and the SDG&E Engineering and County permit ended up cost slightly less, so we returned some money back to everyone at the end of the project.
- See below for Dixieline Fund Control
- You need to pay the County permit fees that essentially pay for their inspectors.

Once you have your expected costs, add a 10% or 20% contingency line item, which you hope will be reimbursed to the homeowners. Then divide this total cost including the contingency by the number of lots looking to hookup (if a single owner wanted two hookups, I charged him a double fee – I had some contractors that had 4 lots to hookup) and you have your per lot funding fee. Note that my contingency number above was only 2%! I got squeezed when various homeowners bailed out of the project after I had set the budget. It had started out at 10% I believe.

Step 5: Owner's Contract

This is a recommended step that I didn't end up doing, due to time pressure on my part, but I highly recommend it. As sponsor of the project, you are the sole person who ends up signing the contractor's construction contract, you are the one that spends the collected money, and, fundamentally, you are the person on the hook should something unexpected happen. To help mitigate downside problems and to make it crystal clear with your neighbors what is happening, it would be a good idea to draft and have all the funding participants sign a construction agreement. Appendix B shows a sample construction agreement that I put together – it hasn't been seen by a lawyer yet, so use/modify at your own risk.

From a logistics point of view, you can get the residents to sign this agreement at the same time they are funding the money for the project.

Step 6: Collecting Money

You will want to set up a construction escrow account to collect and disburse the money. I used Dixieline Fund Control and they were easy and helpful to work with. A fund control company acts as an independent third party who monitors and tracks all money going into and out of the escrow account. It gives your neighbors some measure of comfort because at the end of the project, all disbursements must have been backed up by invoices and these are all kept track of by the fund control company. The fund control company also keeps track of conditional lien releases and helps in the final paperwork when the project is finished.

To set up an escrow account, you must give the fund control company the following:

- a complete budget breakdown including all the sub-items on the contractor's contract (basically all the items they will partial bill you for as the project proceeds), and line items for all the permits, engineering, contingency, etc.
- A list of all funders with their names and addresses

They will input all the budget information into their system and then turn around and give you a printable PDF document which each funder must sign and return with their checks made out to the fund control company. This is a good time to also send out the construction contract (previous section) for all funders to sign too.

Expect to take at least 4 weeks to get everyone to fund, and expect a few people to drop out at this point as well.

Step 7: Construction

Once all the money is in the escrow account, you can start the construction process:

- Sign the contract with the construction company
- Pay for and get a county permit
- Inform SDG&E of the project start and have a pre-meet meeting with the County inspector, the SDG&E inspector and the contractor

The construction pretty much proceeds on its own. **The biggest thing you must do is to verify the correct location of each tee**. In the initial engineering phase, SDG&E will have made educated guesses as to the best place to put a tee based on the topography of the property. But since they don't know for sure where the existing propane tanks are, they may end up putting the tees on the wrong side of a driveway, for instance. Before construction begins in earnest, it would behoove you to ask each resident to get with their local plumber/contractor/maintenance company and figure out where they want their tee to go. Cross check these locations with the engineering plans and make any changes before the street construction gets to that property because the construction company puts in the property lateral tees as they put the gas main in.

To actually pay your contractor and other bills, you must fax in voucher requests to your fund control company, who will provide you with pre-printed voucher request forms – I replicated the forms in Excel and printed the voucher requests from these Excel pages myself. Don't forget to holdback 10% (or whatever was negotiated) of each billing for final payment at the end.

Step 8: Final Paperwork

To close out the project, you must get a signoff from the county that they accept all the roadwork that has been done. The county will need a copy of the compaction report.

After you receive county signoffs, you can record a notice a completion at the County Recorders office. This will notify any subcontractors that might not have been paid that the project is finished. If you have not received any complaints within 40 days of the notice of completion filing, it is safe to pay the contractor his final bill – you should also ask your contractor for unconditional releases from each subcontractor at this point.

Step 9: Actual Hookup

See the earlier chapter entitled “Connecting to an Existing Natural Gas Main” for info on actually hooking up.

Conclusion

Spearheading a neighborhood gas main extension is a fairly time intensive process, but it is something that can be done very much part time. The key requirement is to be organized – have a good filing system, and use as much computerization as possible (familiarity with computer spreadsheets and contact managers is a big plus). In the end, you will have built an enduring piece of critical infrastructure.

Phil Trubey
www.trubey.net
September 12, 2005

Appendix A

Contact List

Gas Main Contractors

Western Pacific Pipeline – Steve Vargas, (619) 593-4823 x208
Schilling – 619-579-6500
Pacifica – 858-483-9988

Fund Control Companies

Dixieline Fund Control – Patty Miller, 760-745-7271

Compaction Testing

B&B Engineering – 760-945-3150

Appendix B
AGREEMENT TO CONSTRUCT A GAS MAIN

This Agreement To Construct A GAS Main (this "Agreement") is made by and among the people who have signed this instrument (collectively the "Residents" and individually "Resident").

RECITALS

A. The Residents wish to construct an approximate 5,000 foot long gas main extension with 22 stubs from the intersection of the streets La Orilla and Rambla De Las Flores in Rancho Santa Fe, south down Rambla De Las Flores, along Calle Chaparro and stopping several hundred feet before Linea Del Cielo, the precise layout being documented in the map prepared by SDG&E entitled "Rambla Gas Main Extension" dated October 2, 2003 (hereinafter called "the Project").

AGREEMENT

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth herein and for good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the parties hereby agree as follows:

1. Administrator and Administrative Duties

1.1 Selection of the Administrator. One or more Resident(s) are chosen to act as the administrator (the "Administrator") to implement this Agreement, and do what is necessary to construct the Project. Initially the Administrator will be Philip Trubey. Should the current Administrator become incapacitated or for any other reason, the Residents may elect another Administrator through a physical meeting and another Administrator may be selected by a vote, the candidate receiving the most votes wins. Signed proxies may be used. Advance notice of two weeks of such a meeting must be given to all Residents.

1.2 Duties of the Administrator. The Administrator is allowed to, but is not limited to, do the following in aid of constructing the Project: hiring and paying engineering and consulting firms, preparing bids, selecting and paying construction contractors, and paying permit fees. Attached, as Exhibit B, is the Project budget plan, including expected phasing of disbursements.

2. Construction Fees

2.1 Initial Payment. At the time this Agreement is executed by each Resident, each Resident will pay $15,116 per gas hookup ("Initial Payment"). This payment and any other payment related to this Agreement will be deposited into a construction escrow account by the Administrator, said escrow account to be used solely for receipts and disbursements related to this Agreement. This Initial Payment is expected to cover any and all costs related to the permitting, consulting, engineering and construction of the Project, but is not guaranteed to do so (see section 2.3). The cost of the Initial Payment per gas hookup, and all other payments and refunds related to this Agreement, are computed by taking the total cost or refund and dividing by the total number of gas hookups for all Residents.

2.2 Other Fees. Once construction of the Project is finished, Residents will need to independently contract with an outside contractor to hook their house up to the gas main stub that this Project will have built for them.

2.3 Cost Overruns. While the Administrator will solicit fixed price bids, any bid has exceptions that if triggered might require the payment of more money to finish the project ("Cost Overrun"). In the event that the Project will cost more than the Initial Payment, the Administrator will inform each Resident of the Cost Overrun, and request additional money to pay for the Cost Overrun. As part of this Agreement, each Resident is obligated to either pay their share of the Cost Overrun, or request that a meeting take place to discuss the Cost Overrun. In such a meeting, if 51% of all Residents agree to pay for the Cost Overrun, then all Residents are obligated to pay for their share. In such a meeting, signed proxies may be used and advance notice of two weeks of such a meeting must be given to all Residents.

2.4 Cost Underruns. At the conclusion of this Project, when all costs related to the project have been paid, if there is extra money that has been paid by the Residents that has not been used ("Cost Underrun"), then the Administrator will pay each Resident a refund for their share of the Cost Underrun based on the number of gas hookups they paid for.

2.5 Final Accounting. At the conclusion of this Project, when all costs related to the project have been paid, and any Cost Underruns have been paid, the Administrator shall furnish to each Resident a complete accounting of all inflows and outflows of money related to this Agreement ("Final Accounting").

3. Dedication of Gas Main

3.1 Assignment. The Residents agree that the Project will be dedicated to the San Diego Gas & Electric company after construction for public use and becomes the sole property of SDG&E, and the Residents thereafter have no rights whatsoever therein.

4. Miscellaneous

4.1 Transferability. A Resident's rights and obligations related to this Agreement shall not be transferred, in whole or in part, except to (i) a trust in which the transferring Resident is a trustee and the beneficiaries of the transferring Resident are the transferring Resident or heirs of the transferring Resident, or (ii) succession or testamentary disposition on the Resident's death or incapacitation.

4.2 Termination. This Agreement shall continue in full force until it is automatically terminated by the following events having taken place: the Project construction has been completed, all outstanding bills related to the Project have been paid, any cost Underruns have been paid to the Residents, and a Final Accounting has been furnished to each Resident.

4.3 Notice. Any and all notices between the parties hereto provided or permitted under this Agreement or by law shall be in writing and shall be deemed duly served when personally delivered to a Resident, or in lieu of such personal service, when deposited in the United States mail.

4.4 Successors. This Agreement shall be binding on and inure to the benefit of the respective successors, assigns and personal representatives of the Residents hereto.

4.5 Severability. If any term, provision, covenant, or condition of this Agreement is held by a court of competent jurisdiction to be invalid, void, or unenforceable, the rest of this Agreement shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

4.6 Governing Law. This Agreement is executed and intended to be performed in the State of California and the laws of the State of California shall govern its interpretation and effect.

4.7 Amendments. This Agreement may be amended at any time and from time to time, by mutual agreement of the Residents, but any amendment must be in writing and signed by each Resident.

4.8 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

4.9 Entire Agreement. This instrument contains the entire agreement of the Residents relating to the rights granted and obligations assumed in this instrument and supersedes any prior agreement. Any oral representation or modification concerning this instrument shall be of no force or effect unless contained in a subsequent written modification signed by the party to be charged.

4.10 Attorney's Fees. If any action at law or in equity, including an action for declaratory relief, is brought to enforce or interpret the provision of this Agreement, the prevailing party shall be entitled to reasonable attorneys' fees, costs and disbursements in addition to any other relief to which such party may be entitled.

IN WITNESS WHEREOF, the Residents have executed this Agreement on this ____ day of _____, 2004.

Residents:

_____

XXXXXXXXXXX

Appendix C

Sample Dixieline Budget Report

Item	Description	Original Budget	Net Change	Current Budget	Requested	Received	Paid-YTD	%	Remaining
0001	SCHILLING MAINLINE	$135,128.00		$135,128.00	$135,128.00	$135,128.00	$135,128.00	100.00%	
0002	SCHILLING FILL SAND	$8,554.00		$8,554.00	$8,554.00	$8,554.00	$8,554.00	100.00%	
0003	SCHILLING POLY GAS INSTAL	$6,350.00		$6,350.00	$6,350.00	$6,350.00	$6,350.00	100.00%	
0004	SCHILLING COMPACTION TEST	$5,648.00		$5,648.00	$5,648.00	$5,648.00	$5,648.00	100.00%	
0005	SCHILLING PAVING	$53,280.00	$15,984.00-	$37,296.00	$37,296.00	$37,296.00	$37,296.00	100.00%	
0040	SDG&E ENGINEERING	$8,000.00		$8,000.00	$4,333.00	$4,333.00	$4,333.00	54.16%	$3,667.00
0041	COUNTY PERMIT	$4,000.00		$4,000.00				0.00%	$4,000.00
0090	CONTINGENCY	$4,382.00	$15,984.00	$20,366.00				0.00%	$20,366.00
99999	FUND CONTROL FEE	$1,223.00		$1,223.00	$1,223.00	$1,223.00	$1,223.00	100.00%	
Totals:		$226,565.00		$226,565.00	$198,532.00	$198,532.00	$198,532.00		$28,033.00