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In Search of Cheap

Portland has about 1,200 miles of local service streets, most of which serve either commercial – industrial districts or residential neighborhoods.

Most of these streets, about 1,120 miles, are maintained by the city. In residential neighborhoods, these streets are usually 28 or 32 feet wide, and they usually have curbs, sidewalks and storm drainage systems.

But the rest of these streets, about 80 miles, have dirt or gravel surfaces and no drainage facilities, and they are not maintained by the city. These streets are generally found in neighborhoods zoned for single family dwelling lots of five thousand or seven thousand square feet.

Since the early 1900s, Portland has relied upon the "local improvement district" (LID) process to fund local residential street construction. When requested by neighborhood property owners, the city designs and manages construction (by a private contractor) of the street and drainage system, and all costs are assessed to the benefitting property owners.[1]

If you lived in a neighborhood with unimproved streets and you requested an LID, the city would design your street to its standards. The public complained that our standards were too costly, wide and invasive, and that streets built to these standards encouraged shortcut, high-speed traffic through their neighborhoods.

Of course, our response was to say our standards are our standards. We couldn't understand why they called us uncompromising, inflexible, extravagant and unresponsive.

It is interesting to note that while we were building three to four miles of local street improvements each year to our city standards, others city agencies were spending about a million dollars annually on a neighborhood traffic management program whose purpose is to retrofit existing streets (using diverters, chicanes, slow points, speed bumps and traffic circles, among others) to reduce shortcut traffic and speeding in residential neighborhoods.

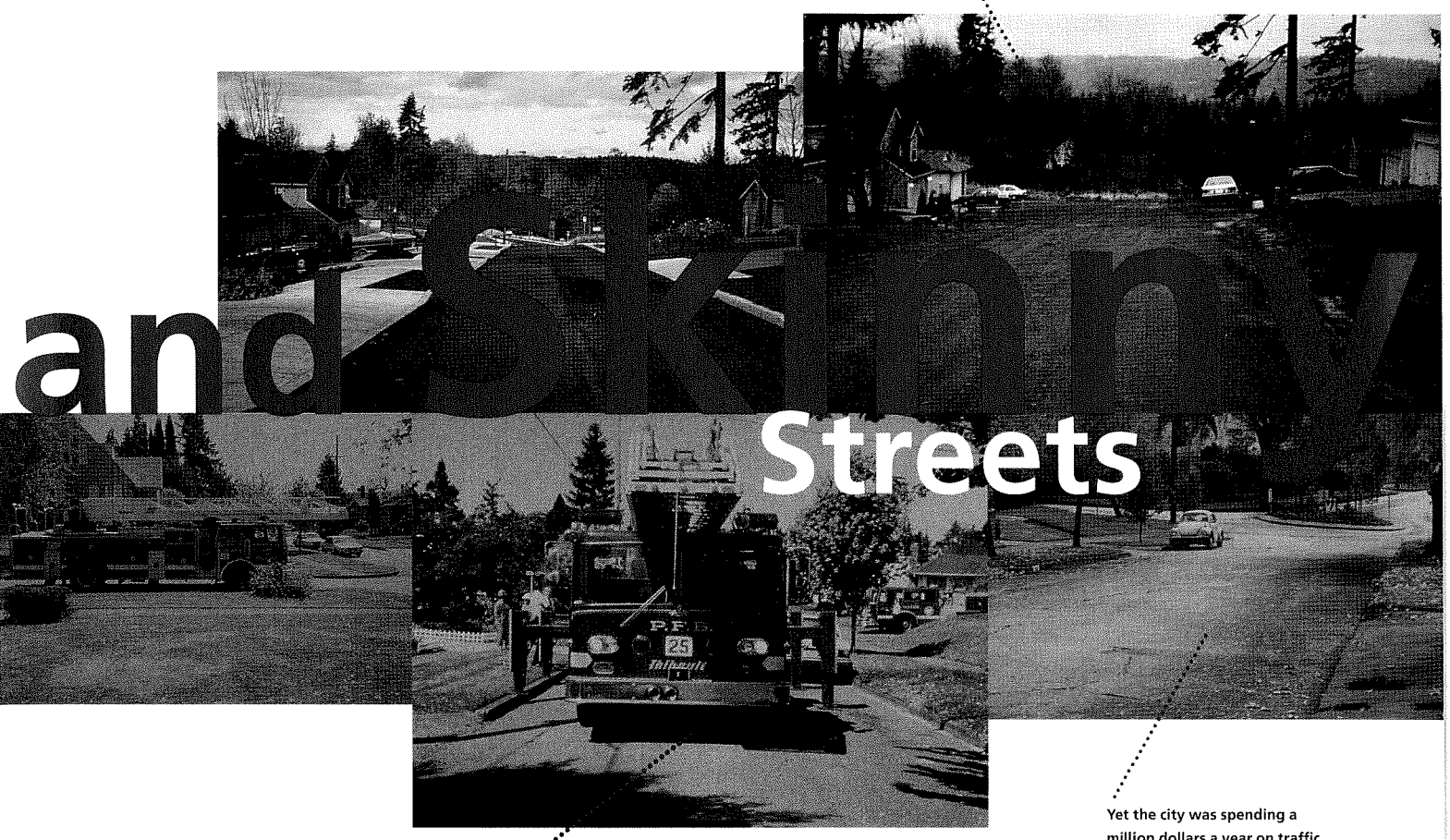
Residents understood that they had to pay to get their streets improved, but they objected to what we were building, and they demanded that we come up with something better. Finally, we agreed to establish a citizens committee to work with us to revisit our standards.

Queuing Streets

Quite candidly, we really didn't expect to see much change. How could we improve on perfection?

Our standards at the time were already what most communities would consider rather lean. We permitted a 32-foot-wide street, which allowed

Portland's street improvement program seeks to improve some 80 miles of unpaved streets in residential neighborhoods.



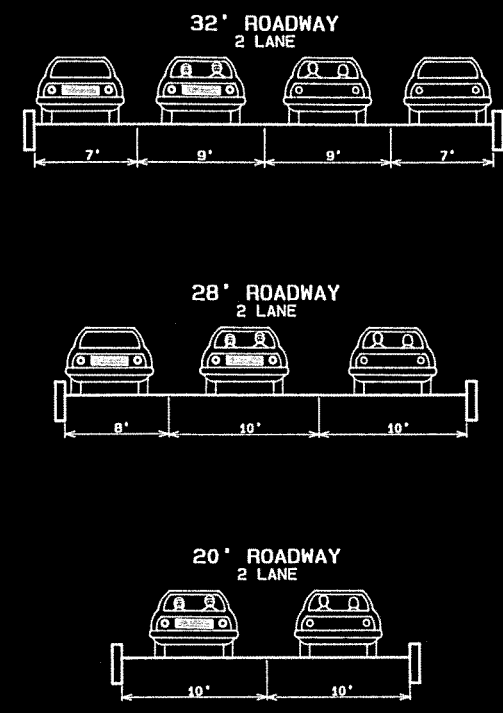
and Back Streets

Yet the city was spending a million dollars a year on traffic calming devices, such as this traffic circle, on existing streets.

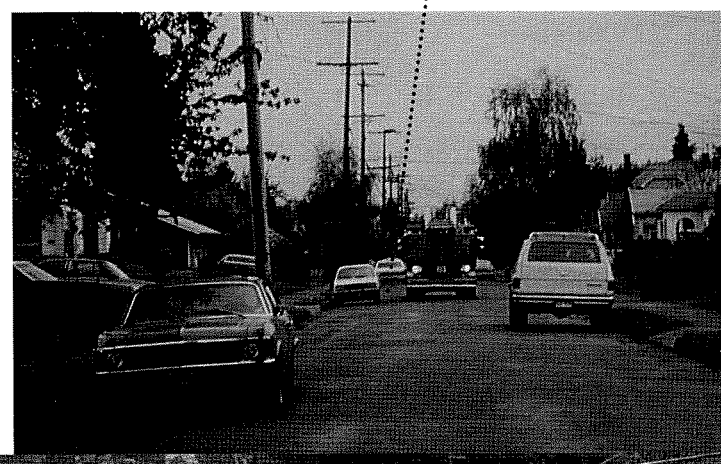
Until recently, new residential streets in Portland were built as wide as 32 feet. A major reason for this standard was a concern for emergency vehicle access. But communities resisted these streets because they were expensive to build and encouraged fast traffic.

Images courtesy Terrence L. Bray and Victor F. Rhodes.

Previous city standards



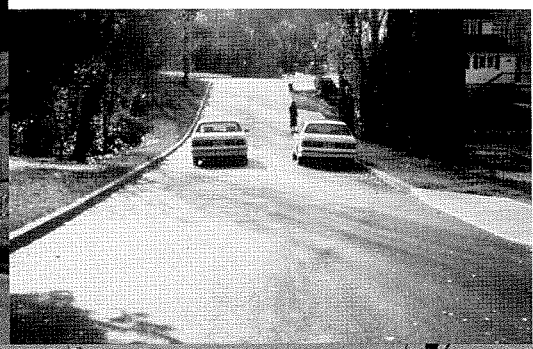
Fire trucks can get through 24-foot streets, even if cars are parked on each side.

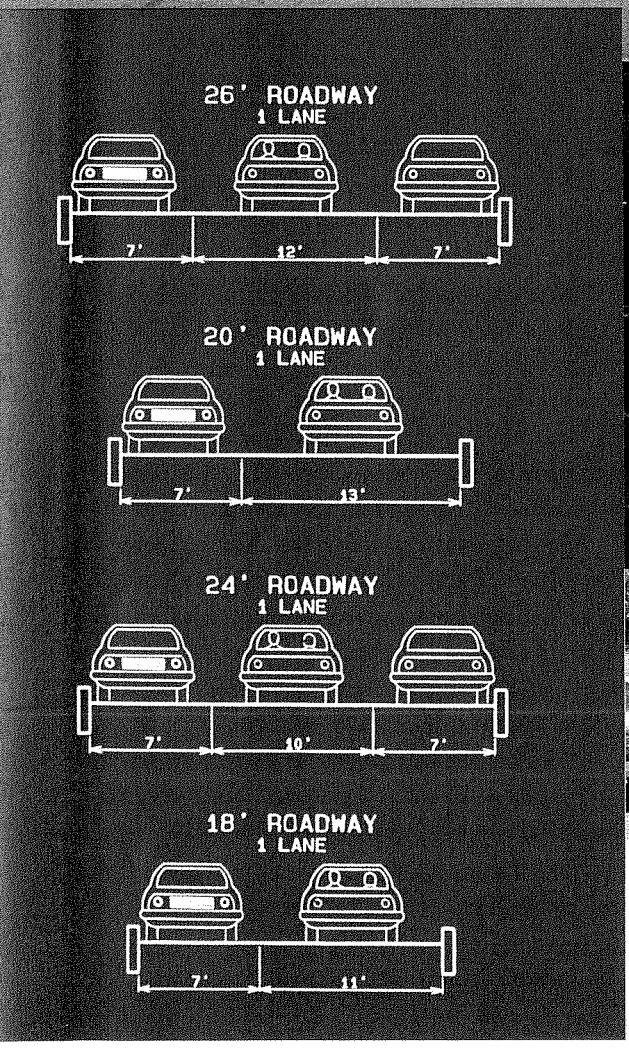


A 26-foot street requires opposing traffic to queue, or wait before it can pass. But it allows plenty of room for emergency vehicles—even if there are trucks or buses parked there.

A 28-foot street is only wide enough for two parking lanes and one traffic lane.

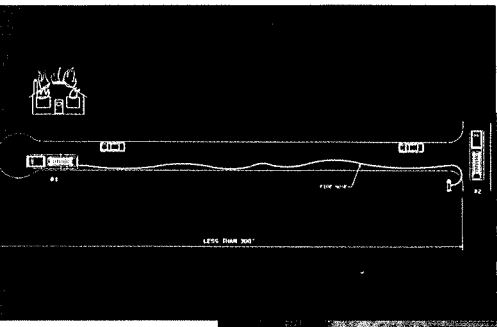
Twenty-foot streets easily accommodate a lane of parked cars and traffic—autos, trucks and fire equipment. Outriggers could be positioned between parked cars or on driveways.

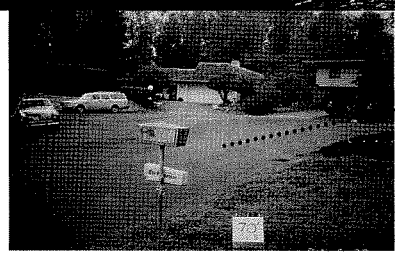




The narrowest practical street for fire equipment was 18 feet. Two trucks could pass each other if their occupants pulled back the trucks' mirrors.

parking on both sides and two travel lanes. We permitted a 28-foot-wide roadway, which allowed two travel lanes and parking on one side. And we permitted, in certain circumstances, a 20-foot-wide roadway, which allowed two travel lanes but no parking. These streets are first and foremost traffic streets and, secondly, they provide an unobstructed fire lane.





Culs-de-sac typically have been designed so fire trucks can turn around in them. But once a fire is extinguished, the emergency is over, and trucks can back out.

In working with our citizens committee, and at the suggestion of our consultant, we came across *Residential Streets*, a book co-published in 1990 by the American Society of Civil Engineers, the National Association of Home Builders, and the Urban Land Institute. The book discusses a more balanced, common sense approach to residential street design issues.

One of the more intriguing ideas involves building two-way streets with only a single travel lane. If a street is built with a single travel lane, requiring one opposing vehicle to pull over while the other passes by, then you have a queuing street (which we subsequently dubbed a "skinny street"). It was easy to see how, as *Residential Streets* suggests, "designs that encourage this kind of cautious driver behavior result in reduced speed, greater attention on the part of drivers to conflict, and, thus, safer streets."

We were intrigued by the idea of queuing, but how could we move in that direction? We decided to look for clues on existing streets in Portland. We looked at streets built to our current standards — 32, 28 and 20 feet wide.

A 32-foot street allows parking on both sides and two narrow travel lanes. But what would happen if parking were permitted on both sides of a 28-foot street? You cannot reasonably drive two cars past each other comfortably. It occurred to us that 28 feet is essentially the pinch point at which a street with parking on both sides becomes a queuing street.

We looked more closely. If a 28-foot street has parking on both sides, the travel lane would be 14 feet — wider than many freeway travel lanes. So if we were to build queuing streets, why would we need a travel lane that wide? Perhaps we could save a little money by shrinking that travel lane to 12 feet, or even 10 feet, and still have a viable street. We also surmised that dropping one parking lane from the 26- or 24-foot street might still yield a functional two-way street with parking on one side.

We toured many of Portland's older neighborhoods and found mile after mile of 26- and 24-foot streets accommodating parking on both sides. We drove a city car and a bicycle past each other to prove to ourselves that they can coexist. We drove a dump truck down the street to verify ample lateral clearance from parked vehicles on such streets.

Although we did considerable hand wringing, our traffic engineers could point to no significant accident history relating to these narrow street widths. It was obvious that skinny streets work in Portland. We have several hundred miles of older streets where queuing is a fact of life.

We concluded that queuing works well in low-density (single-dwelling) residential neighborhoods with driveway openings along the curb, and where there is sufficient off street parking and low ordinary demand for on street parking. In Portland, these criteria are satisfied in neighborhoods zoned for densities of up to almost nine units per acre.

Where's the Fire?

Remember that there were two functional considerations that skinny streets would have to satisfy. They not only serve as traffic carrying facilities but also provide access for fire emergency vehicles. To find out whether these streets would work with Portland's current fire apparatus, we decided to run more tests.

When we tested our street standards in the late 70s, we set up a course, using cones in a large parking lot, and proved to ourselves that we needed wide streets. The problem with that approach is that it focuses entirely on geometry and doesn't take into account potentially competing interests.

This time, we decided to go to established, thriving neighborhoods with narrow streets, and asked the fire bureau to demonstrate to us how those streets don't work. We wanted to find out for ourselves and our critics what the narrowest permissible street width should be, based not on some ideal standard but on common sense.

The fire bureau had historically required an unobstructed, 20-foot-wide fire lane everywhere. Ladder trucks, it explained, are designed to allow the aerial ladders on the top to swing laterally, and in order to prevent the truck from overturning, they need to extend outriggers to provide stability. The truck is about eight feet wide, the outriggers extend about three feet on either side, and they have to have space to get around these outriggers — not to mention occasionally needing to get one apparatus past another. That's why they needed 20 feet of unobstructed fire lanes.

At our request, the fire bureau brought an engine and a ladder truck to a neighborhood with 26-foot streets. The trucks had no trouble making their way through the streets. We parked a dump truck along the curb, even a bus. Nevertheless, the fire apparatus drove through.

We then went over to a neighborhood with 24-foot-wide streets and asked the fire bureau to bring its apparatus in again. Again, the apparatus got through.

Next we went to a neighborhood with 20-foot-wide streets. We parked a car at a corner so we could see what would happen if a fire truck turned from one narrow (18-foot) street to another narrow (20-foot) street. The apparatus was able to make the turn at slow speed.

What about the problem with the outriggers? "Well," the firefighter said, "it's not really an issue here. You've got overhead utilities in this neighborhood, and you've got a lot of trees, so we wouldn't use the overhead ladder to fight a fire here."

Then we asked a hypothetical question. Even if the fire bureau did use the ladder truck on these 20-foot-wide streets, wouldn't it be possible to set up the outriggers in gaps between parked cars or in some other clear area? It was possible, the firefighters explained, but not ideal, since it could take more time to position the apparatus.

We hit the minimum width at 18 feet. The lateral clearances between adjacent vehicles really began to get small. We asked the driver of one apparatus to park against the curb and another to drive by it. The engine got by, although a passenger had to reach out and pull the mirror back to make sure there was no contact. We were satisfied that we could argue for, and defend, no less than an 18-foot width for a queuing street.

Keep in mind that, at the time, the perception of unreasonably wide street standards was causing many neighborhoods to shy away from asking that their streets be improved, leaving the fire bureau with the burden of continuing to have to provide fire–emergency response to neighborhoods with roads in extremely poor condition.

The fire bureau could have taken a rigid stance in an attempt to halt further discussions of narrower streets. But Portland was blessed with a fire chief who understood that problem and recognized that some compromise would benefit the community without severely impairing his bureau's objectives. When we asked him to support skinny streets, he agreed, but with some give and take.

The majority of Portland's blocks are short; predominantly 200 by 200 feet and in some places 200 by 400 feet, or a maximum of 400 feet from

intersection to intersection. In a fire emergency, the first apparatus, presumably an engine, would show up, hook a hose to a hydrant, go on down the street, snake the hose out and charge it. Then the firefighters in that truck would start to work on the fire. The second responding vehicle can come in from the other end of the block; these guys talk to each other on the radio, and they know which are through streets and which streets are not.

On culs-de-sac, though, after the first apparatus goes in, snakes a line and charges it, you do not want vehicles driving over this charged hose. If it were a queuing street with parked cars, the street could be blocked to a second responding vehicle.

"No problem," the chief said. On culs-de-sac less than 300 feet long, if the fire is at the far end, and both the parking and travel lanes are blocked by a truck and a hose, then firefighters can simply get out and carry the equipment they need to knock the fire down. So, he said, a skinny street would be acceptable for a cul-de-sac less than about three hundred feet long. For a longer cul-de-sac, the fire bureau may veto a skinny street.

A street in Portland's Brentwood–Darlington neighborhood, before and after improvements.

Until 1991, we required 90-foot diameter culs-de-sac to be built in residential neighborhoods. The purpose of a cul-de-sac is to provide space for turning a vehicle around. But when we asked firefighters about this, they told us the emergency is getting there, not getting out, and if necessary, they can back out. We ultimately recommended designing 70-foot diameter culs-de-sac to serve vehicles that regularly use the street, with no objection from the fire bureau.

In 1991, the city council authorized us to implement skinny streets. The new standards for local residential streets (in areas zoned low-density residential) are either 26 or 20 feet wide, depending on neighborhood parking needs. As a result, Portland has gone from the aircraft runway standard to what we and our neighborhood customers believe are much more people friendly streets.

Skinny Streets and Growth Management

The Portland metropolitan region is expecting upwards of 500,000 new residents over the next twenty years. This will put extreme pressure on our urban growth boundary and ability to deliver municipal services.

The city has responded by setting an aggressive goal of housing at least 20 percent of these newcomers. Where will these people go? Proposals have ranged from unpopular "granny flats" to whole new "sustainable neighborhoods" on brownfields adjacent to the downtown area.

We simply cannot accommodate 100,000 new residents in the central city alone. There is also a need to have a geographic sense of equity in the city's public investment strategy. So we began looking more closely at our existing outlying neighborhoods with an eye toward creating opportunities for affordable infill housing.

Some of these outlying neighborhoods are low- to moderate-income areas with a significant potential for infill of single family residences. They are characterized by unimproved streets and varying degrees of substandard housing. Because these neighborhoods were developed years ago, before sewers were available, the homes sit on multiple or extremely large lots. More than 30 percent of the available land is vacant.

We decided to focus on an area known as Brentwood Darlington, which has the capacity to absorb 1,200 new residents and generate an assessed value growth in the range of $32 million. The area was already served by utilities, transit and a collector road system. What was missing was the local residential street.

This area was annexed to the city over residents' objections and was later forced to install sanitary sewers against its will. For these reasons this is a community where government is distrusted and not welcome. Our challenge was

twofold: to develop a street product which was affordable to the residents, and to devise a marketing program to overcome the residents' distrust.

Having decided to take a business- and market-based approach, we hired a former sales manager from Weyerhauser to lead the effort. We already had skinny streets, we just needed to make them affordable. We researched the demographics of the area so we could establish a target price for street improvements that was affordable.

We found that 70 percent of the residents had lived in the neighborhood more than ten years and that owner occupancy was above the city average. This told us there was a lot of equity already established in homes that were selling in the affordable range of $56,000. Incomes in the majority of cases were found to be below median but the residents paid their bills.

We began to put a program together by looking for partnerships to leverage limited transportation dollars. We learned that the area was scheduled to have sewers installed in the near future, and realized that when the Bureau of Environmental Services finishes installing a sewer it paves the street. It lays a few inches of asphalt simply to get out of the neighborhood with their shirts on their backs. We suggested that they could put that same investment toward a full street improvement that would be maintained by the city. They agreed.

In addition, the neighborhood qualified for assistance from Housing and Community Development Block Grant funds. The Bureau of Community Development agreed to put up $1 million in block grant funds to subsidize street construction in order to make the vacant land available to development by not-for-profit housing providers.

We labeled our product "Cheap and Skinny Streets" and rolled it out to the neighborhood. For $1,700 the owner of a 5,000 -square-foot lot could get a skinny street, 20 feet wide, with parking on one side, curbs, trees, sidewalks on both sides and street lighting. People who owned four lots would pay four times that, an incentive to sell their lots for infill development.

When we say "Cheap and Skinny Streets," we're not talking about something substandard, but the word "cheap" means a lot more to the folks than "affordable." You have to know your customer and we don't think government does very frequently.

We sent 6,000 pieces of mail to this neighborhood in five months. When these people get mail from the city government, they throw it away; we had to send it in red envelopes, orange envelopes or striped envelopes. They didn't like us because they were forced to annex to the city, forced to have sewers and unhappy about police service.

We went on a petition drive and got 60 percent of the people (197 properties) to opt in, and have improved 1.5 miles of street. The project cost about $1.2 million, $870,000 from Housing and Community Development and sewer funds and $363,000 from residents. The assessment for this will cost the average resident $1.42 a day, less than the average price of an on-the-street cafe latte.

We took the program a step further and put together a whole financial package with local banks so people could refinance their mortgages. These people have lived in the neighborhood for more than ten years and most of them are homeowners. Many of them didn't take advantage of the recent low interest rates, so we are putting them back in their house with a home rehabilitation loan, maybe some equity taken out for a recreational vehicle or a boat — while lowering their cash flow requirements.

We're not doing this simply because we like paved streets. When we undertook a similar project in the St. John's neighborhood in the 1970s, we found that when we improved the streets, people cleaned up the front yards, removed refrigerators from the porches, fixed up their houses and got rid of junked cars.

We're doing this because it helps manage growth, creates opportunities for affordable housing created by nonprofit developers, and strengthens community pride. Building "Cheap and Skinny Streets" is about more than just laying asphalt.

Note

1. Portland uses tax revenues to construct arterial streets and maintain all city streets, but not to build local residential streets.