



HOW IT AFFECTS YOU

Find out if your street is on the list and what you need to do to be prepared for slurry seal. **Page 4 & 5**

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CAPITAL PROJECTS

CARING FOR YOUR INFRASTRUCTURE TO KEEP KIRKLAND HEALTHY, SAFE AND VIBRANT



Will Denton, Kirkland's streets engineer, inspects Lakeview's Northeast 60th Street, near Lake Washington Boulevard to ensure it is in good enough condition for street sealing. This summer, the City of Kirkland will seal nearly 25 lane-miles of neighborhood roads in Juanita, Market, Norkirk, Central Houghton, Lakeview and Moss Bay neighborhoods.

THE STREET SAVER

The City of Kirkland is protecting 25 lane-miles of residential roads this year in six neighborhoods with a layer of slurry seal.

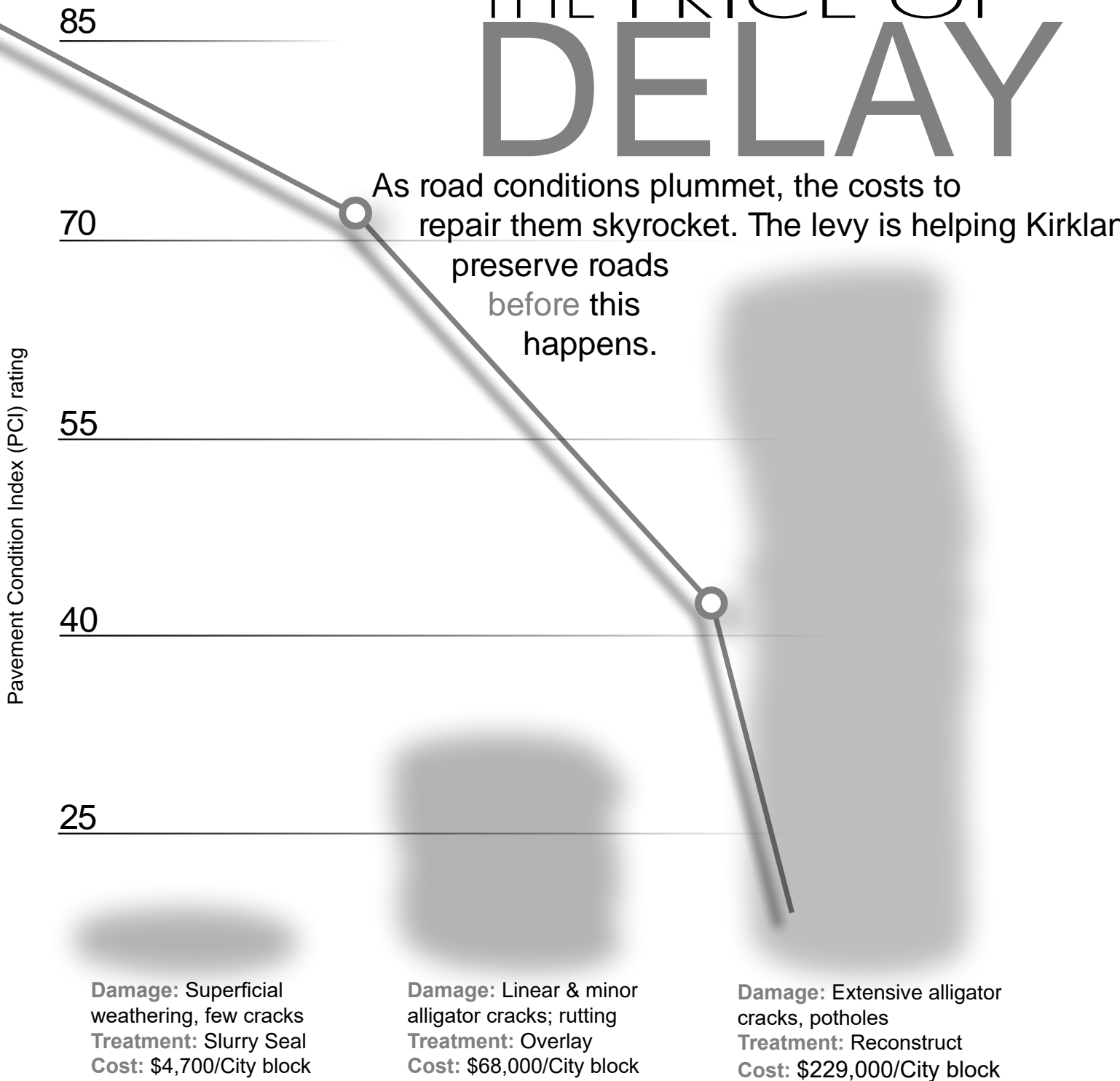
Lakeview's Northeast 60th Street doesn't seem like it's in dire need of maintenance. The view from the street is one of Kirkland's most sweeping views of Lake Washington and the Seattle skyline beyond has no potholes, no

sections of alligator cracks. But, says Will Denton, Kirkland's streets engineer, this street is at a tipping point. At the top of the hill are a series of small cracks. The color of the street is light gray. "That means it has started

TO LEARN MORE

- Contact Will Denton, streets engineer, 587-3872; wdenton@kirklandwa.gov
- Or Christian Knight, outreach: 587-3831; cknight@kirklandwa.gov

THE PRICE OF DELAY



oxidizing,” Denton says.

As it continues to oxidize, Denton explains, the asphalt—the pavement’s glue—will become more brittle with time. Pits will form in it, then more cracks. From there, the road will deteriorate quickly. And that, Denton says, is what makes Northeast 60th

Street an ideal candidate for slurry seal.

This summer, the street preservation program that Denton manages will slurry seal this street and sections of more than 80 others—some in better shape, some in worse—in six of the City’s 13 neighborhoods.

What Kirkland residents said about slurry seal

In 2021, the City slurry sealed streets in Bridle Trails, Rose Hill, Moss Bay and Houghton. Here's what residents said about their streets.

“It's great. It has been really nice. It smoothed things out for us and allowed us to walk without tripping. It's really worked out well.

—Susan, Central Houghton
Received slurry seal in 2021

“I haven't noticed any difference. I still drive over it. So I guess it's alright.

—Dolores, South Rose Hill
Received slurry seal in 2021

“They had given a lot of warning and information. That was good. There were some loose particles at first. But they swept the road after a couple days. It's fine now. Roads have to be resurfaced, at some point.

—Sue, South Rose Hill
Received slurry seal in 2021

“It was a very smooth experience. After the construction, there was no debris or rocks. City of Kirkland came to clean shortly after that. There was a tiny bit of gravel. It was no big deal.

—Filippo, Bridle Trails
Received slurry seal in 2021

“I remember getting the notice about it and thinking it was going to be difficult. But in retrospect, we gave plenty of notice to everybody, there were no major issues. It's smoother now than it was shortly after the City applied the treatment.

—Ellen, Moss Bay
Received slurry seal in 2021

“They were pretty fast. It was a little bit gritty. It did smooth out over time. It took three or four months for it to smooth out.

—Mary, Bridle Trails
Received slurry seal in 2021

The substance the street preservation program will use to preserve these roads is called 'slurry seal,' a basic mixture of water, HPXOVL, HG OLTXLG DVSKDO like substance—and tiny pieces of gravel, ZKLFK 'HQWRQ FDOOV, 3DJJU. When it dries, the slurry seal provides a TXDUWHU LQFK OD\HU RI \$D V\XQVFUHHQ IRU WKHVV PLQ roads—sealing out weather and moisture—and, as a result, extending the functional lives of the roads.

“Slurry seal isn't structural. It is only a preservation method.”

Slurry seal also replenishes years

—Will Denton, P.E.
Kirkland's streets engineer

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in the pavement

beneath it.

And it does all this at an estimated cost of \$4,700 per city block.

The 2012 levy

Residents doubled Kirkland's capacity to preserve their neighborhood roads in 2012 when they approved the Streets Levy. Since then, Kirkland has used slurry seal to extend WKH IXQFWLRQDO OLYHV RI neighborhood roads.

Without the levy, roads like Northeast 60th Street might never receive slurry seal. \$QG ZLWKR\W VOXUU\ VHDQ would continue to hammer its asphalt until chunks of pavement began breaking loose and webs of alligator cracks morphed into archipelagos of potholes that would undermine the road's basic structure.

At that point, the only comprehensive, ORQJ WHUP VROXWLRQ DYDL residential roads would be reconstruction.

A Kirkland contractor will slurry seal the street sections highlighted in orange on this map in late July or early August. Residents will receive street-by-street schedules one to two weeks before application.

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Чтобы запросить информацию в этом документе на вашем языке, свяжитесь с ответственным за соблюдение требований раздела VI Свода законов США (Title VI Coordinator) Киркланда по телефону (425) 587-3831 или по эл. почте cknight@kirklandwa.gov.

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WHAT TO EXPECT WHEN WE'RE PROTECTING

The slurry seal guide that reassuringly answers the questions of residents, from the preparation stage

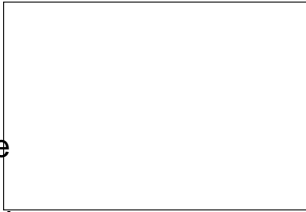
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1.) PREPARE THE SITE

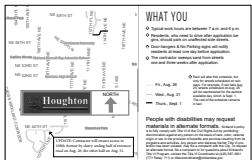
One to three months before application

City crews repair small areas of damaged pavement and ask residents to prune their vegetation—especially low-growing vegetation—to create 14 feet of vertical clearance above the right-of-way so work crews can apply slurry seal up to the curb. If residents do not or cannot trim vegetation that obstructs the public right-of-way, work crews will. Crews also sweep pavement. Roads remain open.



2.) PREPARE RESIDENTS

One to two weeks before application



Residents receive street-by-street slurry seal schedules on a postcard. Crews finalize street preparation. Roads remain open.

3.) NOTIFY RESIDENTS

At least one day before application

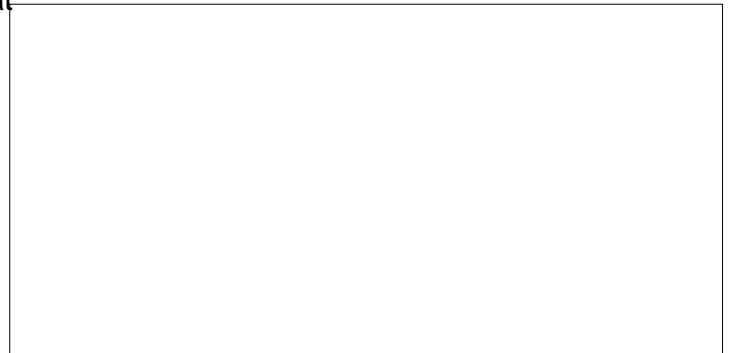
Work crews remind residents of slurry seal date with a door hanger at least one day before applying slurry seal. Residents remove all personal items—including cars—from the road and prevent water from flowing from their properties into the street.



4.) SEAL THE ROADS

Day of application

Work crews close the street and apply slurry seal. Road closures begin as early as 8 a.m. and end as late as 6 p.m. Some closures begin later in the morning. After application, slurry seal is brown and sticky. To prevent damage, residents do not drive, bike, walk, or allow their pets on the street until the slurry seal has cured and the City has re-opened the street.



5.) ADAPTING TO THE NEW SURFACE

Up to one year after application

The new surface is rougher and sheds some of the larger aggregate, creating gravel deposits on top of the new slurry seal. The contractor's crews sweep the streets twice—approximately one week after application and then again three weeks after application. As time progresses, traffic smooths the surface by dislodging the larger aggregate and pushing smaller aggregate into the underlying pavement. Sweepings and rain also help.

And reconstruction is prohibitively expensive, costing on average \$229,000 per block. These high costs are what have PDGH UHFRQVWUXFWLRQ D solution in Kirkland.

The constraints

Like any solution, however, slurry seal comes with a few catches: “Slurry

seal isn’t structural,” Denton says.

The estimated costs per City block for reconstructing a road from the subgrade to the surface. “It is only a preservation method.”

This means it’s not suitable for Kirkland’s

PRUH WUDdFNHG URDGV VXF K DV 0DUNHW

Street, which accommodates nearly 17,000 vehicles every day in the Juanita, 1RUNLUN DQG 0DUNHW QHLJ KERUKRRGV)RU those arterials, Kirkland uses a process called “overlay.”

The overlay process replaces two to three inches of the street surface with an entirely new surface, at an estimated cost RI SHU EORFN²OHVV WKDQ RQH WKLUG of the costs for total reconstruction, but 14 times more expensive than slurry seal.

Slurry seal’s role as a preservation method also means it’s not suitable for roads that have too many cracks. Those roads are generally beyond slurry seal’s capacity to protect them.

“Within a few weeks, the cracks that are LQ WKH URDG ZLOO UHÀHF W seal as well,” Denton says. “And moisture ZLOO FRQWLQXH WR LQ OWUDWH LW

Unless, of course, Kirkland’s street maintenance crews patch the cracks before sealing the road. Patching requires workers to tear out the damaged

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A toddler pushes his bike up Northeast 61st Street in the Bridle Trails neighborhood, shortly after Kirkland treated it in 2012 with slurry seal.

pavement and rebuild that section of the road.

“Too many patches is expensive,” Denton explains.

³(YH QWXDOO\ LW EHF RPHV PRUH FRV W WKURXJK WKH VOXUU\ in general to just overlay it.”

Denton’s challenge is to treat the road before it reaches that point of no return. Of course, Kirkland has more than 450

ODQH PLOHV RI QHLJ KERUKRRG DQG F

The selection process

To identify which roads are nearing that tipping point,

Denton relies on three data sources—two of them are K X P D Q J H Q H U D W H G 7 K H W K L U G

Every four years, a team of pavement specialists walks along randomly selected sections of every road in Kirkland, counting the number and types of distresses in the surface—rutting, raveling, swelling,

slippage cracking, transverse cracking, and, yes, alligator cracking.

“Some distresses are more problematic than others,” Denton says.

Each of these distresses reduces the street’s condition,

Z K L F K L V U H A H F W H G L O O H J Q E R M H F R I O H R I S D W F K L Q J
the Pavement Condition Index, a nationally used system for measuring road conditions. A

100 on the Pavement Condition Index means the street is in perfect condition.

A zero means the road has no functioning surface and requires total reconstruction. For slurry seal to

E H H c H F W L Y H W K H V W U H H W V K R e t e r i o r a t e f a s t e r t h a n t h e c u r v e s p r e d i c t , ” D e n t o n c o n t i n u e s . “ A n d s o m e w i l l d e t e r i o r a t e s l o w e r . T h a t ’ s w h y w e r a n d w a l k t h e s e r o a d s . ” ◀

The Pavement Condition Index score of Northeast 60th Street, for example, is 60, Denton says.

marginally eligible for slurry seal. Sealing its cracks, ' H Q W R Q V D \ V Z L O O P D N H V O X U U H c H F W L Y H

Denton enters these scores into the City’s pavement monitoring software, which uses variables, such as W L P H D Q G S U R M H F W H G W U D d F O Pavement Condition Index scores of every road in Kirkland will decline with time.

The software, then, uses these forecasts to recommend a treatment plan for each road.

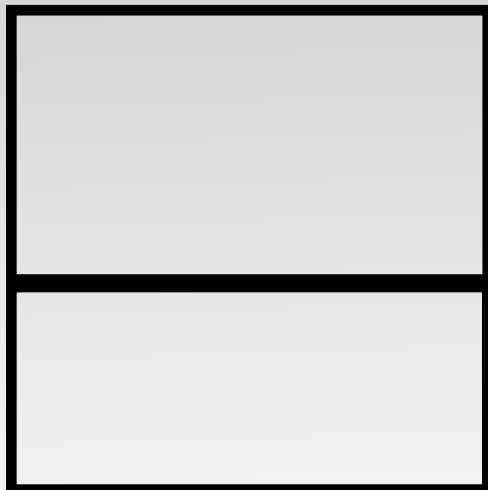
“So if I know if we are going to prevent this street from falling out of slurry seal’s reach and into an G L O O H J Q E R M H F R I O H R I S D W F K L Q J to treat it sooner, rather than later.”

These treatment plans are based largely on the streets’ Pavement Condition Index scores, which are in turn based on surveys of randomly selected sections of each street.

“Some streets will deteriorate faster than the curves predict,” Denton continues. “And some will deteriorate slower. That’s why we have to go out there and walk these roads.” ◀

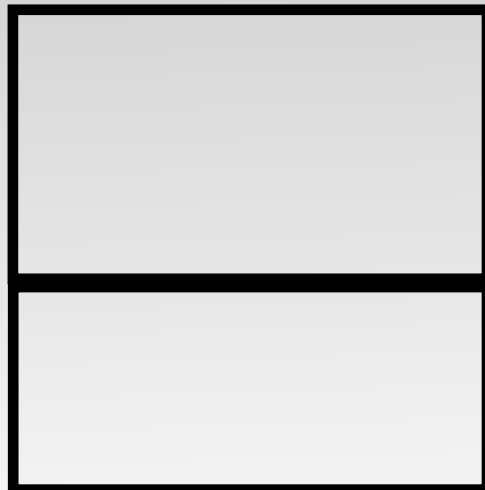
Sealed roads smooth out with time, traf c & sweepings

One week later ...



Street : 91st Court Northeast
Sealed : Aug. 30, 2016
Photo : Sept. 8, 2016

Seven months later ...



Street : 91st Court Northeast
Sealed : Aug. 30, 2016
Photo : April 3, 2017

One year later ...



Street : Northeast 131st Place
Sealed : Aug. 3, 2015
Photo : Sept. 8, 2016

