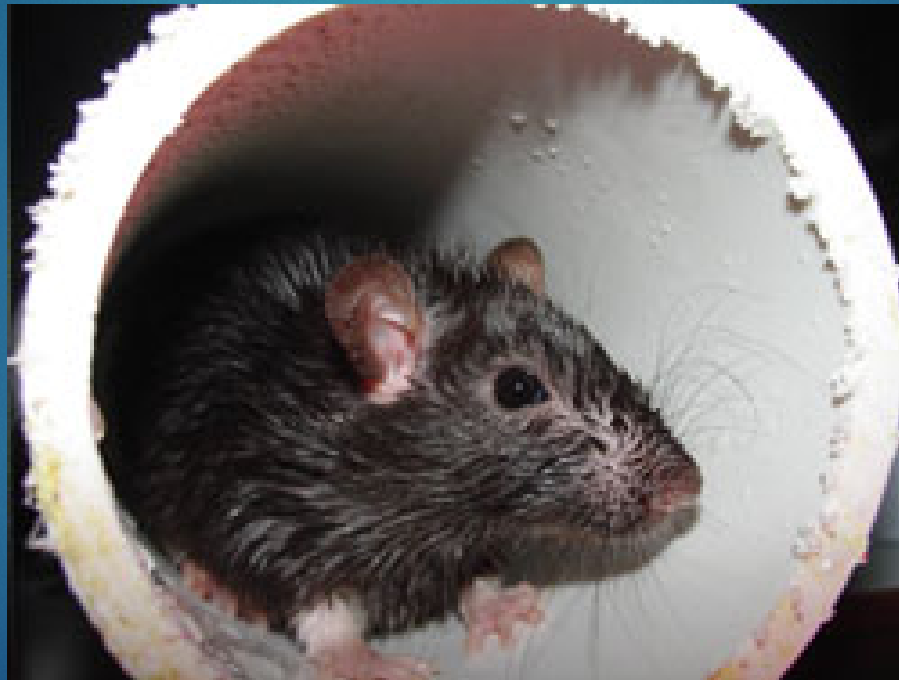


# Rodent Prevention and Control

Public Health-Seattle & King County



# Overview

- ▶ Brief reminder of who our rodent friends are
- ▶ Why rodent programs are important for cities and counties
- ▶ Public Health's programs and Public Health's role



# Common Rodents

## Norway rat

Larger body & small ears

Nest in burrows, rockeries, under debris



## Roof Rat

Smaller body, bigger ears

Longer tail

Nest high up in ivy, sheds & attics





# Common Rodents

## House Mouse

Nest in dwelling, garages  
Adults smaller than deer mouse



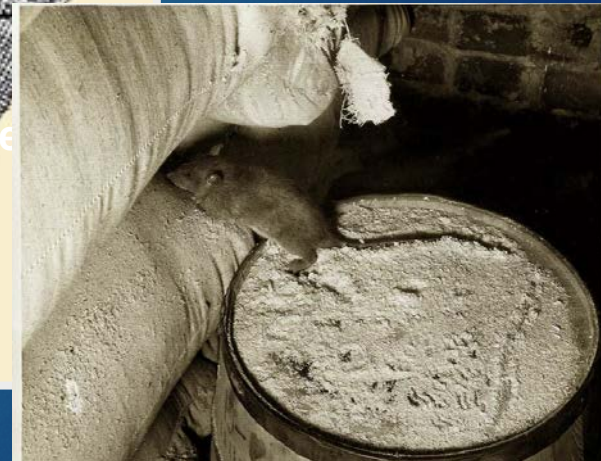
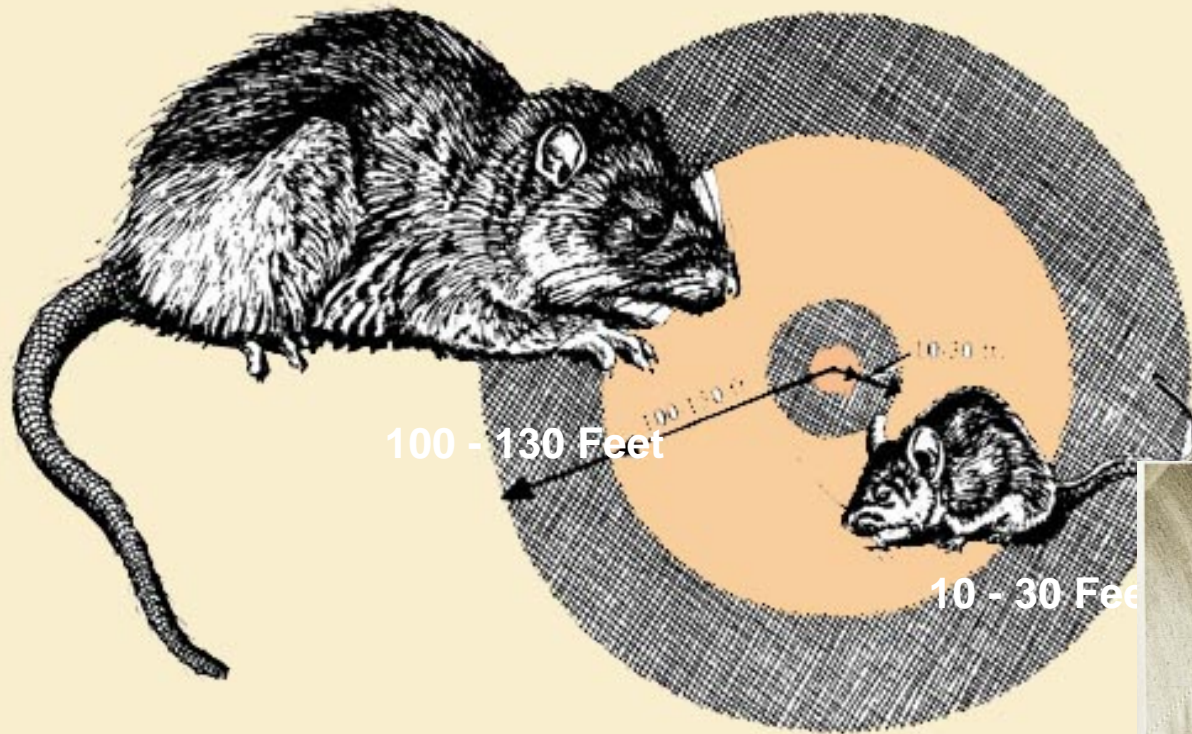
## Deer Mouse

White stomach & black stripe  
on the tail  
Hantavirus concerns





# Rodent Range



# Are Rodent Control Programs Important For Cities and Counties?



Infrastructure and Planning

- landscape
- utility systems
- facility maintenance

Habitable Building Codes (Tenant Rights & Healthy Housing)

Demolition and Land Clearing Permits

Solid Waste Management and Policy

Homeless encampments



# Public Health Programs

- ▶ Above Ground Rat
  - ▶ Responds to citizen complaints about rats
  - ▶ Outreach about rodent prevention
  - ▶ Advisory and public inquiries
- ▶ Below Ground Rat
  - ▶ Provides sewer baiting services
  - ▶ Responds to toilet rat complaints
  - ▶ Side sewer investigations

# Public Health's Role

- ▶ Public Health responds to public complaints about rats and mice in Seattle
  - ▶ Commercial properties-Enforcement
  - ▶ Residential properties-Enforcement
  - ▶ Public Properties-Coordination and Advisory
  - ▶ Rat in the Toilet-Advisory
- ▶ Complaints are triaged based on risk with the highest risk cases taking priority
  - ▶ Highest risk cases: Rats in rental properties or residences where vulnerable adults and children are present



# Public Health's Role

## Enforcement and Education

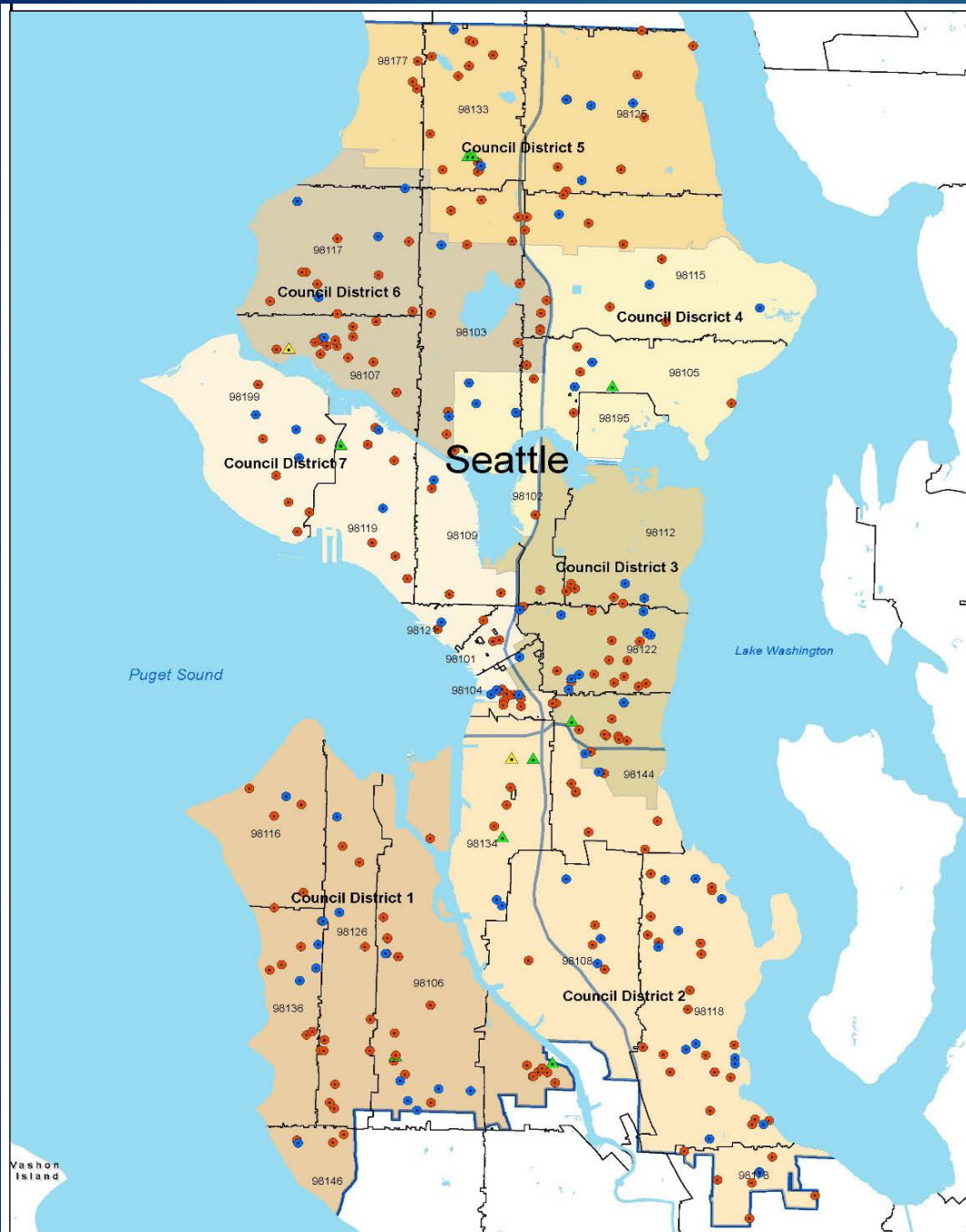
- ▶ Inspectors educate the public about best practices to prevent rodents
  - ▶ Online resources: [www.kingcounty.gov/health/rats](http://www.kingcounty.gov/health/rats)
- ▶ Investigations may lead to enforcement
  - ▶ Enforcement authority under King County Board of Health Title 8: Rodent Control
  - ▶ Enforcement mechanisms are civil penalties and liens
    - ▶ Daily penalties for non-compliance up to \$250/day
- ▶ Public Health does not provide abatement or pest control services on private property

# Public Health's Role

## Interagency Coordination

- ▶ Public Health coordinates with city, state or other agencies in response to complaints
  - ▶ City Agencies: SDCI, SPU-commercial, residential garbage accounts, city light, drainage and waste water, SDOT,, etc.
  - ▶ County Agencies: Facilities, Parks, etc.
  - ▶ Washington State: WSDOT, WSDA, Dept. of Ecology, Adult Protective Services





As of December,  
2018

203 rat complaints  
responded

32 rat in the toilet  
complaints

**Current Staffing levels**  
2 inspectors cover  
both Above & Below  
Ground rat program



# Investigation

Focus on removal of food sources





# Investigation

Focus on removal of harborage, exclusion,  
control

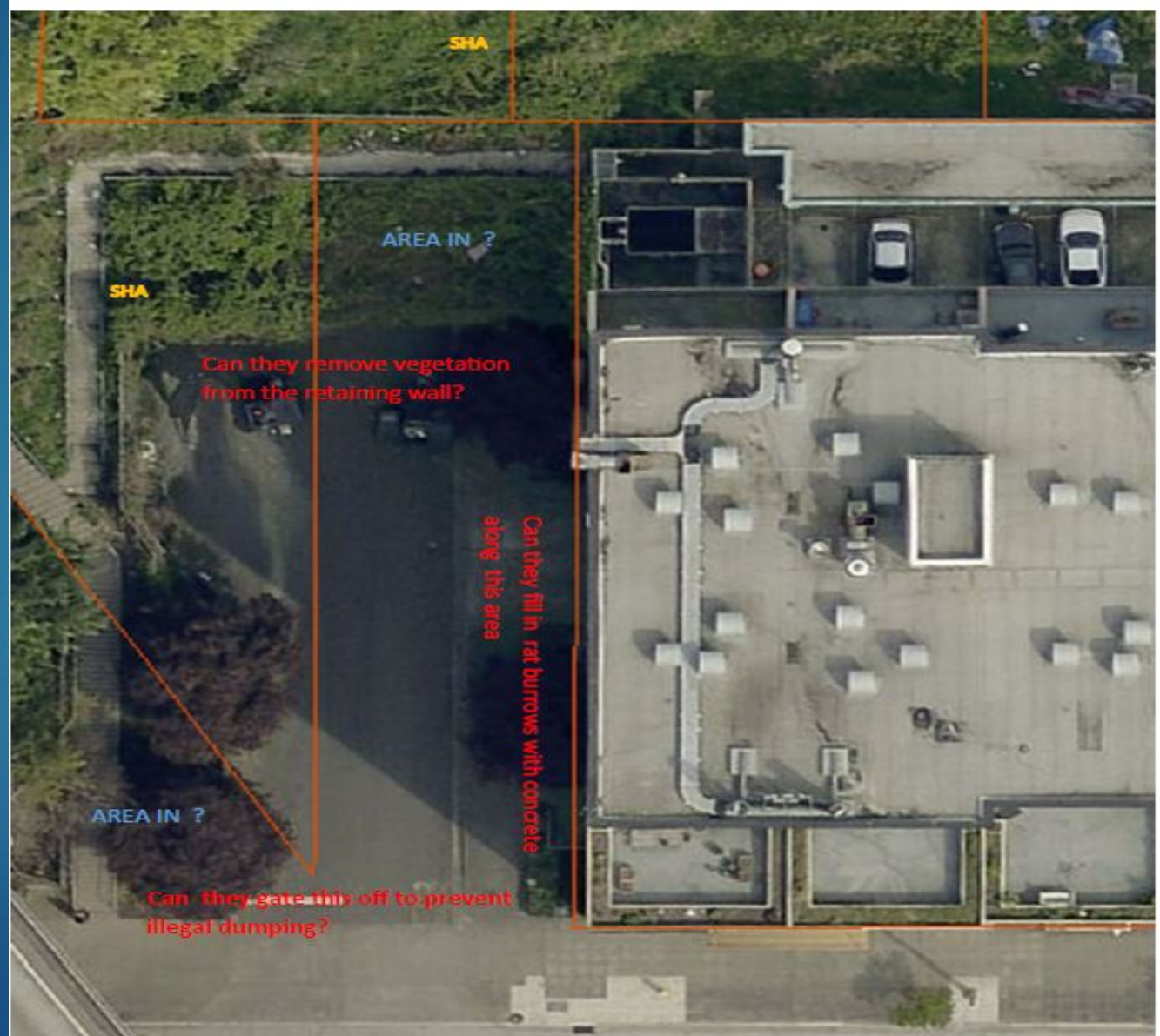




# Case Investigations a Closer Look

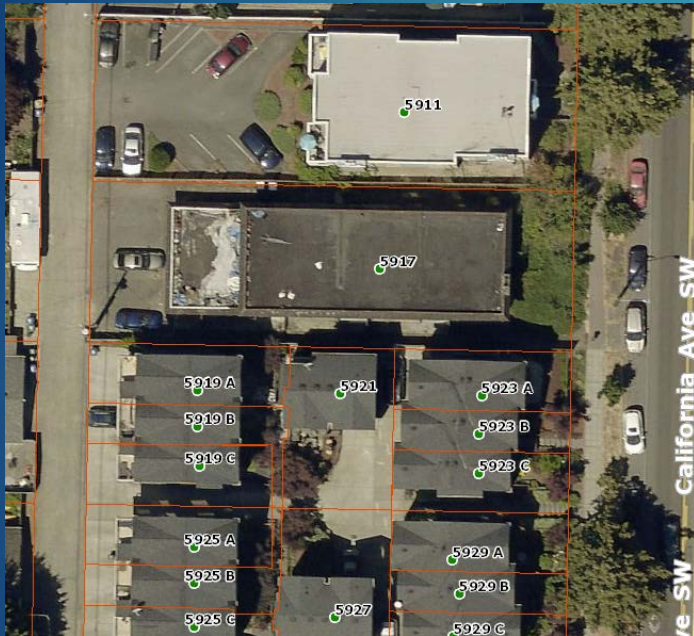
Neighborhood complaints about rats found several factors.

1. Garbage maintenance-owner responsibility
2. Homeless encampment-WSDOT
3. Overgrown vegetation on parcel- SDOT
4. Rat burrows under sidewalk- Owner or SDOT?





# Case Investigations a Closer Look



- ▶ 2014 – complaints to code enforcement and PH
- ▶ Hoarding situation in a 7 unit apartment building
- ▶ Severe Rat infestation



# Case Investigations a Closer Look





# Case Investigations a Closer Look

2016- court ordered  
clean out





# Case Investigations a Closer Look

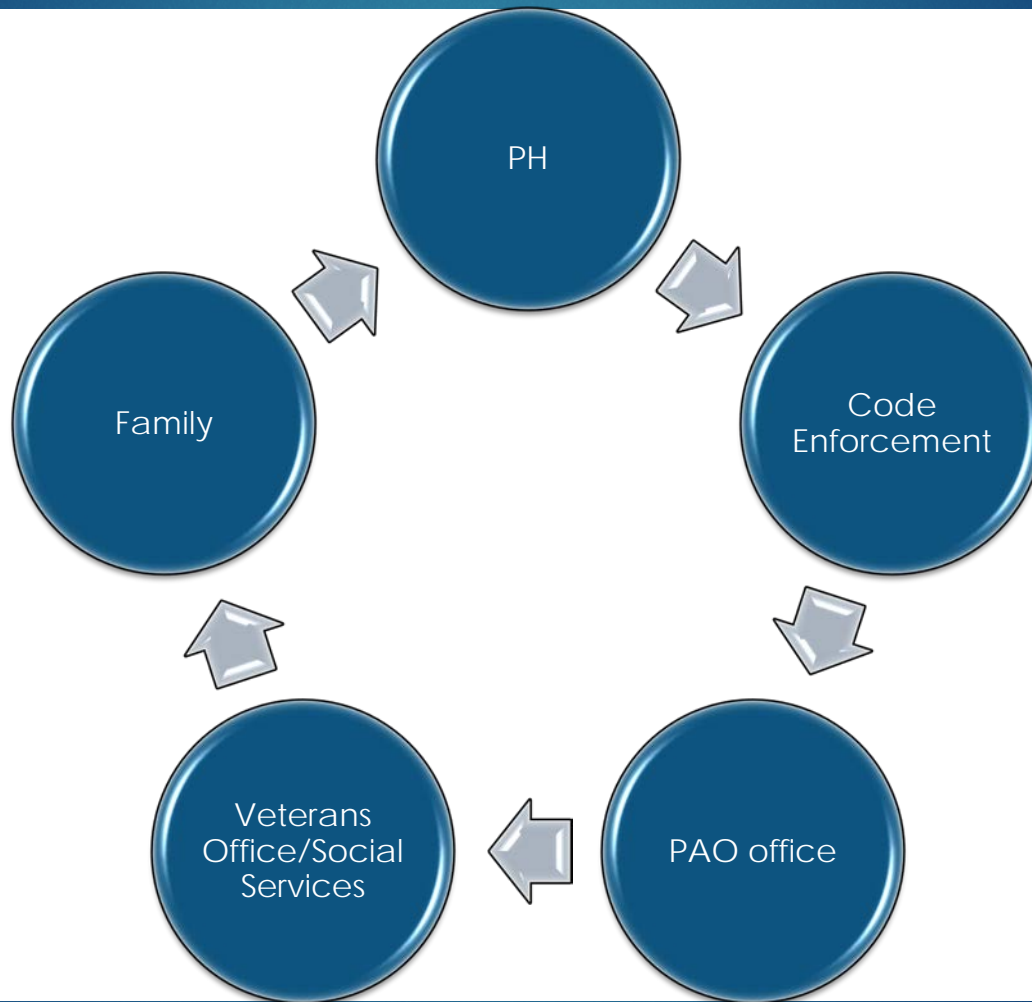
2018-

- Property Sold
- Building Demo
- PH notified 50 residents close by of rodent activity related to demo





# Case Investigations Coordination





# Public Outreach

- ▶ Website (10,000 page views /year)
- ▶ Brochures (translated)
- ▶ Video
- ▶ Public Presentations
- ▶ Materials at community and health fairs
- ▶ Student projects and schools

## Public Health — Seattle & King County

### Environmental Health Services

#### Animals and pets, rats and bugs

#### Rat and mice prevention

##### Seattle Sewer Baiting Program

##### Goat ownership

##### Pet business regulations

##### Avian Influenza

##### Bed bugs

##### Rabies facts

##### Swimmer's itch/rash

##### West Nile virus

##### Zoonotic Disease program

Home » Public Health — Seattle & King County » Environmental Health Services » Animals and pets, rats and bugs » Rat and mice prevention

## How to get rid of rats and mice

**Rodents (rats and mice) are common pests in our area and can be dangerous. They can ruin your food, destroy things in your home and start electrical fires. Rats and mice also carry diseases that can make people sick.**

1. File a complaint about rats +
2. Keep rodents (rats) away +
3. Seal up to prevent entry of rodents and rats +
4. Keep rats out of sewer pipes +
5. Trap and bait for rodents +
6. Cleaning up after rodents +
7. Guidance for cleaning and disinfection of vehicles with rodent infestations +
8. When to hire a professional pest control company +
9. Related resources +



Watch a video on how to prevent rats from getting into your home and what to do if you find rat droppings.





## Fact sheets and brochures

### Downloadable brochures (PDF)

- **[Facts about rats and mice](#)**

Rats and mice are common in King County. People can get sick from handling rats/mice, contact with their feces, urine, or saliva, or from bites. Diseases spread by rats and mice include leptospirosis, rat bite fever, lymphocytic choriomeningitis, and hantavirus (spread only by deer mice in western Washington).

- **[Rats and Mice: Guidance for people living outdoors or homeless](#)**

Rats and mice can spread diseases such as rat bite fever and hantavirus. People can get sick from handling rats/mice, contact with their feces, urine or saliva, or from bites. You are more likely to come into contact with them when living in cars, RVs and outdoors. These important tips will help you stay safe and healthy.

- **[Rats Unwanted: Four Steps to Prevent and Control Rodent Infestations](#)**

You can help prevent rodent problems in your neighborhood. In King County, it is the responsibility of property owners to prevent conditions on their property that provide a home or food source for rats.

- **Also available in:** [Chinese](#), [Korean](#), [Russian](#), [Somali](#), [Spanish](#), [Ukrainian](#), [Vietnamese](#)

- **[How to use rodent traps and bait stations](#)**

Learn how to effectively use rat traps and bait stations as well as tips for choosing a pest control operator and how to safely dispose of dead rats.

- **Also available in:** [Chinese](#), [Korean](#), [Russian](#), [Somali](#), [Spanish](#), [Ukrainian](#), [Vietnamese](#)

- **[How to Keep Rats Away From Your Home](#)**

Poster of an illustrated neighborhood showing how to keep rats away from homes.

- **[Bird Feeders and Rats: What You Need to Know](#)**

Bird feeders are very popular in King County and provide many hours of enjoyment for people who love to watch birds. However, if you feed birds expect to see increased rat numbers around your home.

### Related sites

- **[Hantavirus Pulmonary Syndrome \(HPS\): Facts, brochure and surveillance in King County](#)**

Hantavirus pulmonary syndrome (HPS) was first reported in the United States in the Southwest in 1993. The five members



# Rats and Mice



Public Health  
Seattle & King County

## Guidance for people living outdoors or homeless

Rats and mice are common in King County. They can spread diseases such as rat bite fever and hantavirus. People can get sick from rat droppings, urine, or saliva, or from bites. You are more likely to get sick if you live in cars, RV's and outdoors. These in

### PREVENT RAT AND MICE



- Keep rats/n including pe
- Do not feed
- Do not eat if you see fe
- Store all hu tight-fitting

### WHAT TO DO IF YOU HAVE

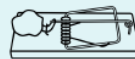
If you see rats/mice or signs of th your living or sleeping space:



- SECURE YOUR**
- Keep any di
  - Try to pitch
  - If possible, tarp, or pall



**For RV's and v**  
Regularly chec them to air ou the vehicle, in system.



**SET TRAPS**  
If rodents have not use glue tr



### 老鼠出沒後應如何處理

#### 警惕漢坦病毒！

鹿鼠的尿液中含有漢坦病毒，嚴重的話可以致命。在清理前，讓密封的大廈、倉庫或房屋通風 30 分鐘。

1. 清理時戴上乳膠或橡膠手套和防塵口罩。
2. 將 1 杯漂白水與 10 杯水混合成使用家用消毒劑。
3. 清理時不要吸塵、清掃或抹乾。這樣會破壞可能含有有害細菌或病毒鼠尿液和糞便。
4. 在清理前，將所有污染區域、糞便和它們的巢穴灑上消毒劑。請 10 分鐘。
5. 將櫃面、衣櫃、抽屜、地板和牆壁用蒸汽清洗地毯、毯子和軟墊傢俱。
6. 用雙層塑膠袋將老鼠屍體和污染扔到外面的垃圾桶。
7. 用洗滌劑和熱水清洗衣物和床單。乾機設置為高溫烘乾。
8. 完成所有步驟後，將您用過的東西直接扔掉。用香皂和熱水洗手。

#### 製作及使用消毒液

將 1 杯漂白水與 10 杯水混合成溶液。

將消毒液均勻施加於污染區域，靜置 10 分鐘，然後清理乾淨。

### 負起責任 做個好鄰居

您可以幫助防止附近鼠患問題的發生。在金縣，每位業主均有責任避免他們的物業中存有適宜老鼠棲息的場所和食物來源。您可以讓老鼠對您的房子失去興趣，從而達到這目的。在

## 討厭的 老鼠

## HEALTH WARNING IF YOU HAVE MICE IN YOUR HOME OR YARD

Deer mice in King County may carry hantavirus, a rare but deadly disease.

Deer mice live in wooded areas and can nest in nearby homes, sheds, and cars.



Deer mouse (white belly)

You can get hantavirus from rodent droppings and nests.

### STAY SAFE WHEN CLEANING UP RODENT NESTS OR DROPPINGS:



Wear disposable gloves.



DON'T sweep, vacuum or stir up dust that may have rodent droppings!



Soak areas with rodent nests or droppings with disinfectant, then mop or sponge.

LEARN MORE: [www.kingcounty.gov/hantavirus](http://www.kingcounty.gov/hantavirus)

Version 4/19/17. Images: Lloyd Humphreys, Daniel Aczel, parkjoun, Creatica Creative Agency for the Noun Project

Public Health  
Seattle & King County





# Student Outreach



Green Yesler Student Project Focused on Rat Prevention in their neighborhood



Evergreen Highschool project focused on illegal dumping and rodent prevention



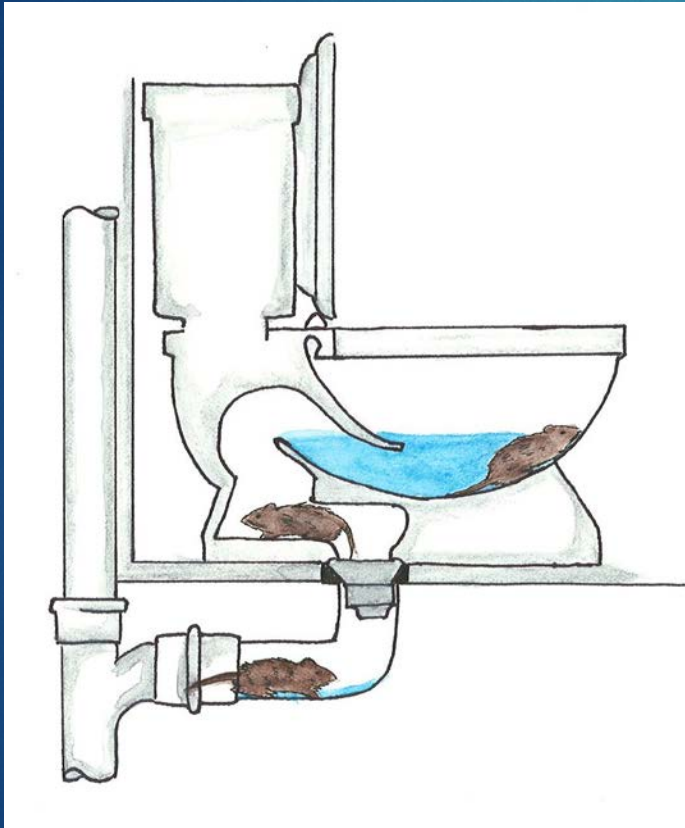
# Wrap Up

## Moving Forward

- City/County Rodent Working Groups
- Neighborhood Rodent Prevention Trainings
- Rat Academy for City and County Facility Staff
- Ongoing training for Environmental Public Health Staff
- Grow student outreach programs
- Trauma informed approaches and methods for cooperative compliance



# Public Health's Sewer Baiting Program





# Video 5 min



<https://www.bing.com/videos/search?q=national+geographic+rats&view=detail&mid=3EC72A87ECBCBC2CFB963EC72A87ECBCBC2CFB96&FORM=VIRE>



# Rat in the Toilet: What to do

## **STAY CALM!**

**Keep the lid down!** Prevent the rat from jumping out. Leave your toilet lid down when not in use.

## **Squirt some dish soap in the toilet!**

This helps break the surface tension of the water. Soap degreases the oils on the rat so it can not stay afloat in the water.

**Flush the toilet!** The rat will usually go back down the way it came.





# Rat in the Toilet: What to do

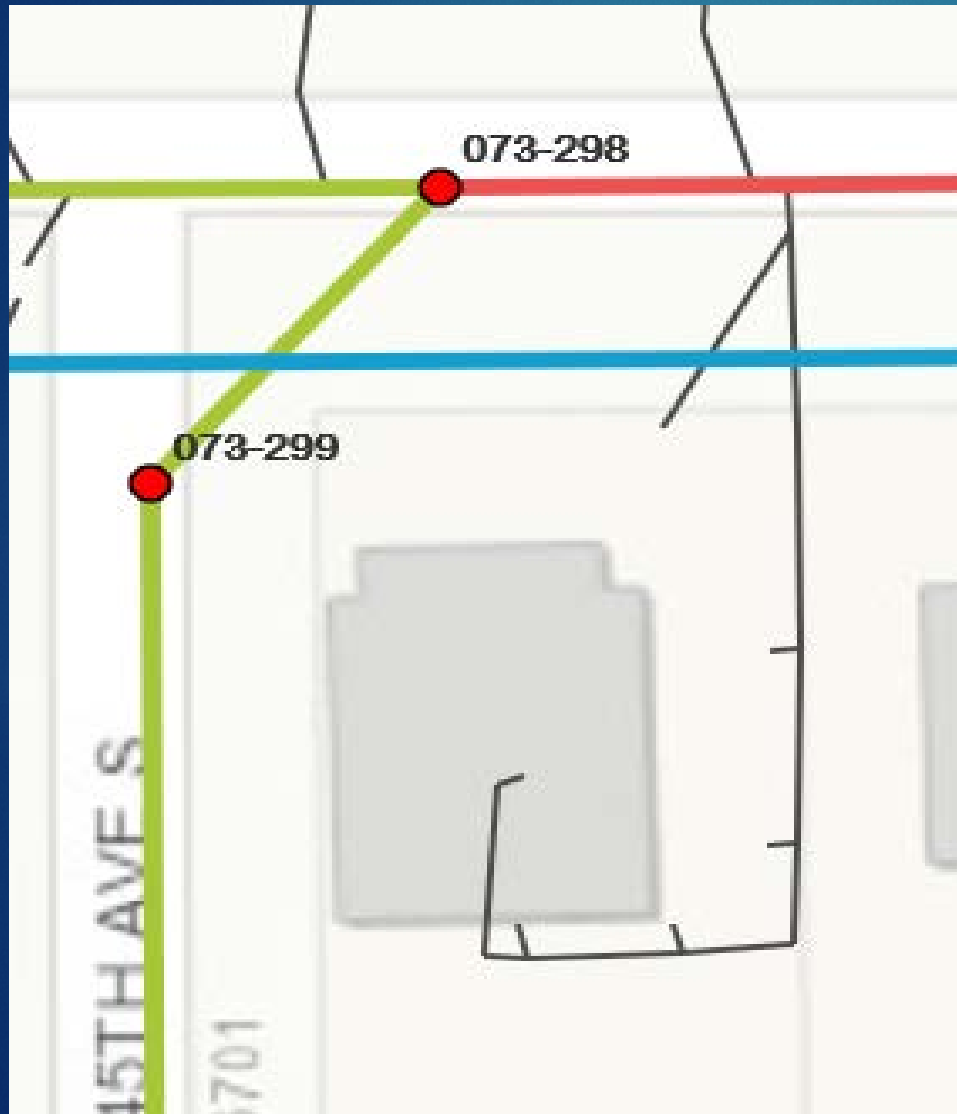
Here are some simple things you can do at home to deter rats from being attracted to your sewer.

- Keep your kitchen sink rinsed clean and use your garbage disposal as little as possible.
- Use sink strainers to catch all food waste during dish washing.
- Compost all food scraps with your yard waste pick-up service.
- Clean your drain! Use  $\frac{1}{2}$  cup of baking soda followed by  $\frac{1}{2}$  cup of vinegar and rinse with boiling water. You can also use 1 cup of bleach and rinse with boiling water. Do this once or twice a month.
- Never pour grease or oils down the drain or into toilets.
- Pour grease, oils and fats into a container and store it in the freezer. When it hardens put it in the trash.





# Side Sewer Assessments



Side sewer assessments.  
When sewer rats break the  
surface between the home  
and the sewer connection.

## Mainlines

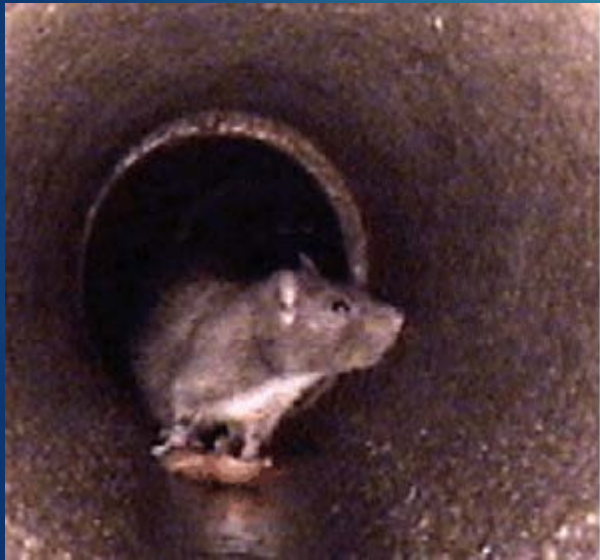
- Concrete
- Reinforced Concrete Pipe
- Vitrified Clay
- Ductile Iron Pipe
- Unknown
- Asbestos Cement
- Cast Iron Pipe
- Polyvinyl Chloride
- Brick
- High Density Polyethylene
- Other



# Side Sewer Assessments

## *When Rats Break the Surface*

Side sewer assessments are done with every rat in the toilet complaint.





# Side Sewer Assessments

## *When Rats Break the Surface*



Rodent Burrow to be tested for side sewer break. Dye shows up downstream in the sewer system within a few minutes.



# Side Sewer Assessments

## *When Rats Break the Surface*

### Seattle faces rising number of side-sewer failures

Half of Seattle's housing was built before 1961, and the sewers beneath homes are reaching the end of their lives.



Source: Seattle Public Utilities, National Water Co.

PH works with the city to report failed side sewers. Rats will continue to be an issue while the side sewer is in poor repair.



100



GIS application  
provides in the field  
data collection  
implemented in 2018



# Sewer Baiting

Monitoring bait used for 1<sup>st</sup> baiting and two baiting's done for follow up to determine active manholes





# Sewer Baiting

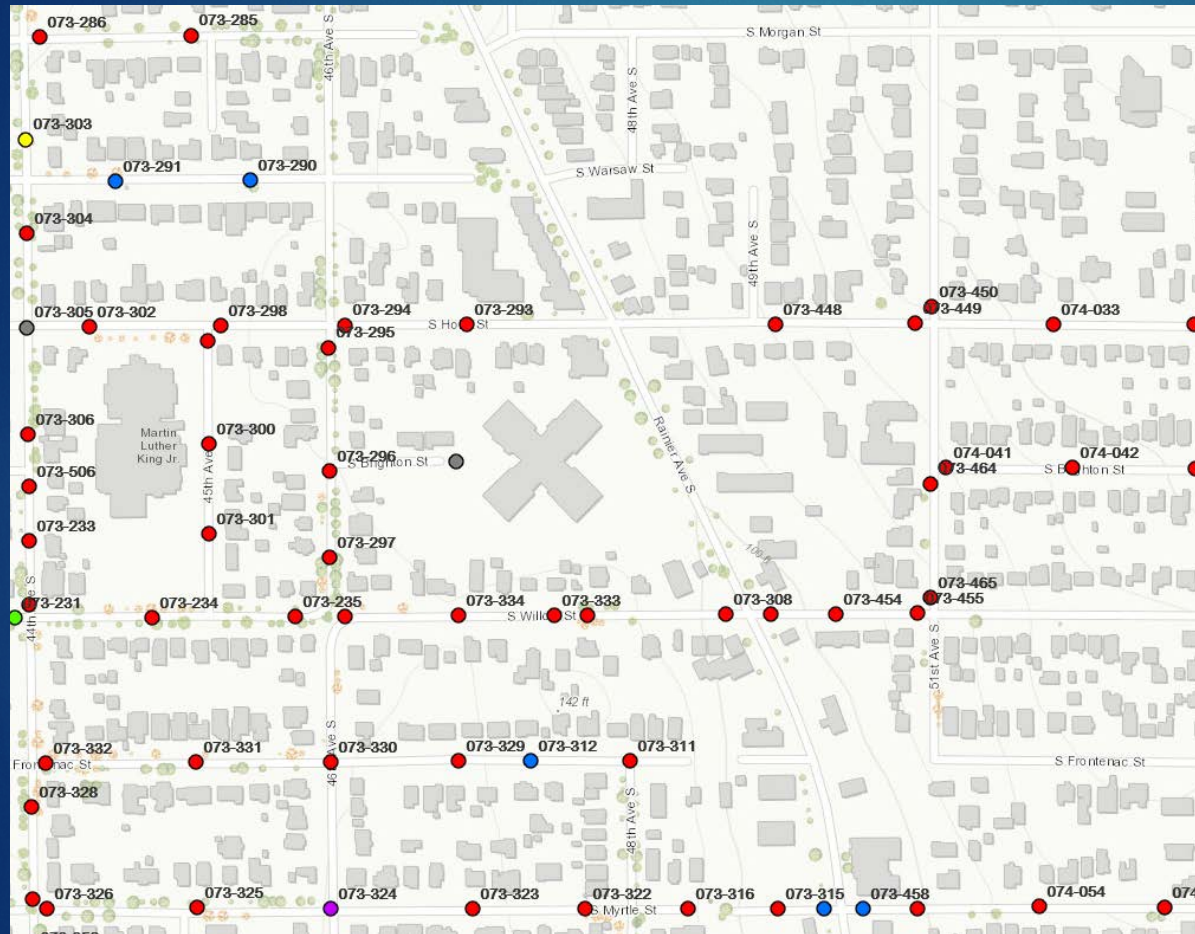
Toxic bait follows up  
with active sewer  
manholes

Bait is labeled for use  
in sewer application





# Sewer Baiting



## Legend

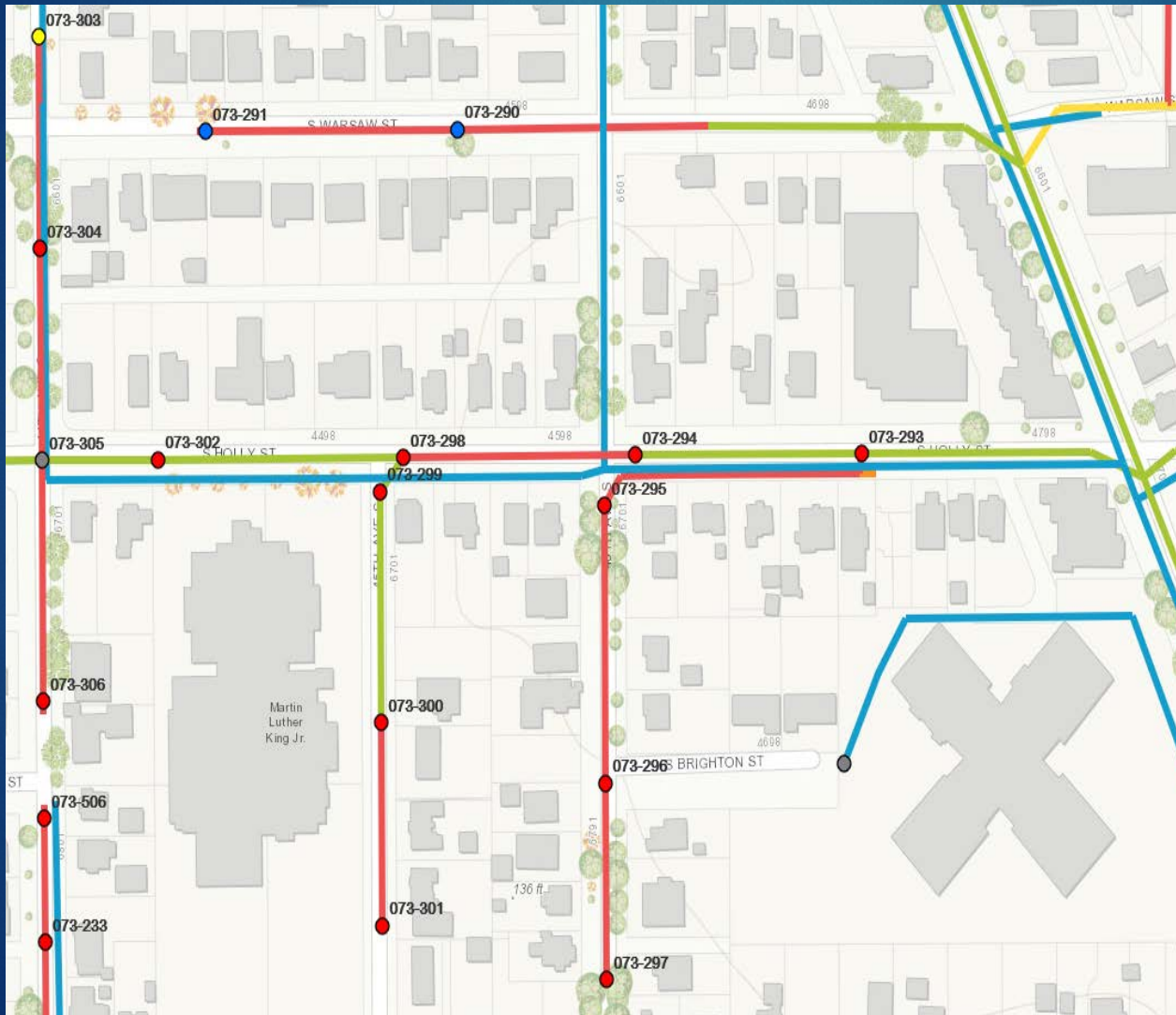
### BaitingPoints

- Activity baited
- Baited
- Test baited
- Activity not baited
- Never baited
- No activity
- Not accessible-Permanent
- Not accessible-Temporary

70% of manholes baited in 2018 had rat activity



# Sewer Baiting



## Mainlines

- Concrete
- Reinforced Concrete Pipe
- Vitrified Clay
- Ductile Iron Pipe
- Unknown
- Asbestos Cement
- Cast Iron Pipe
- Polyvinyl Chloride
- Brick
- High Density Polyethylene
- Other

Is there a relationship between the sewer age, type, and rats?



# Moving Forward



Program evaluation to determine best practice

Do the best we can with limited resources

Continue to provide quick response to resident complaints



# Program Contacts

- ▶ Complaint Reporting:
  - ▶ Online: [www.kingcounty.gov/health/rats](http://www.kingcounty.gov/health/rats)
  - ▶ Phone: 206-263-9566
  
- ▶ Seattle Program Staff:
  - ▶ Leah Helms-Supervisor 206-263-8450
  - ▶ Don Pace- Inspector 206-263-8517
  - ▶ Kris Pape-Inspector 206-477-1708