RESPONSE PACKET

Hazardous Materials Transportation by Rail Response Plan – September 2016

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Hazardous Materials Transportation By Rail

Response Plan

Columbia County, Oregon

CHECKLISTS

The following Checklists are provided to give County responders a quick view of operational functions that may be needed at a rail hazardous materials incident.

These checklists are general in nature and may not include all functions or considerations necessary to be undertaken at an incident. They are presented in a manner as a "Quick Guide" to remind responders of actions that may be necessary to consider or implement. There are many aspects to be addressed at an incident and remembering all aspects is difficult and these Checklists will aid in addressing those aspects. Some items on a Checklist may not be applicable to a specific incident and may not require an action on the part of the responder.

The Checklists are numbered in order of the 6 Step Response Process described in the Plan and follows this prescribed order.

The Checklists are designed to be reproduced as part of the Response Packet in this plan, and carried in all public safety agency vehicles which respond to railroad emergencies.

Checklist #1

First Arriving Unit – Size-Up

____ Announce Incident via Radio, quick size-up, establish Command and name

_____Announce, via radio, the quick size-up info to all incoming units with approach instructions for incoming units. (up wind etc.)

_____Secure the scene. Set roadblock parameters.

_____Contact RR Crew, Identify need for Coast Guard/DEQ/OERS

_____Confirm Haz Mat level and confirm team response.

_____Identify Product. (Placards, Shipping Paper [Train Consist], Train Crew, Car Number etc.

Product Name:_____

DOT 2016 ERG Guide No.: _____ (Orange border pages)

_____Complete a Detailed Size-Up

Area impacted by vapors, spills etc. _____

*Public Exposed*_____

*Fire or Fire potential*_____

*Exact nature of release/fire*_____

*Type of Container and its Condition*_____

*Wind Speed/Direction*_____

*Level of PPE (TO's, SCBA, etc.)*_____

*Miscellaneous*_____

_____Announce, via radio, the results of the Detailed Size-Up

_____Prepare for Transfer of Command

Checklist #2

Hazard Analysis

Product Name:_____

Flash Point:_____

Flammable/Explosive Range:_____

Vapor Pressure: (water=25 mm/Hg)_____

Vapor Density: (Air=1 <1 Rise >1 Sink) _____

Corrosivity: (Acid or Caustic)_____

Solubility: (Soluble-Yes or No)_____

Toxicity: (TLV, IDLH)_____

DOT 2016 ERG Guide Number: _____ (Orange border pages)

PPE requirements:

_____Contact Hazmat Team for assistance in interpretation of data.

_____If product is not identified or data is inconclusive, assume a worst case scenario and protect public/exposures.

_____Set Cold, Warm and Hot Zones if possible.

Checklist #3

Risk Assessment

_____Survey Scene from a 360 degree perspective

_____Identify Areas of Risk*

a. Public (Who and Where)_____

b. Environment (Location to waterways, sewers etc.)_____

c. Responders (location and PPE)_____

d. Container and its integrity (Damage, fire impingement, explosion potential)_____

e. Quantity of material involved or at risk_____

f. Rate of release (Estimated)_____

*See “Maps of Schools and Nursing Homes” in Appendix A, “Plume Projections” in Appendix B, “Railroad Mile Post Maps” Appendix C of the Response Packet.

Checklist #4

Incident Objectives (Strategic Goals)

__X__ Safety (Public and Personnel)

_____ Rescue

_____ Public Protection

_____ Spill Control

_____ Leak Control

_____ Fire Control

_____ Recovery

_____ Additional Objectives (List)

1._____

2. _____

3. _____

_____ **SAFETY is always an Objective.** OSHA requires that an Incident Safety Officer be appointed who is knowledgeable about the operations at hand. Has one been appointed and who? _____

Checklist #5

Tactics

Tactics are specific methods to meet the Objectives. The following is a list of general tactics that may be selected to meet Incident Objectives. Since every incident has its own variables and conditions, some of the tactics listed below may not be applicable and additional unlisted tactics may have to be added to the list on the lines called "Additional Tactics". Tactics may include:

_____ Evacuation (Specified area)

_____ Shelter-In-Place (Specified Area)

_____ Foam Application (See Foam Application Guide – in Appendix D)
(Consider two 500 lb PKW Dry Chemical Skid Mounted units)

_____ Rescue (Example: Entry and Rescue of Train Crew)

_____ Fog or Master Stream Applications (Fire Suppression/Vapor Control)

_____ Fire Extinguishment vs. Letting Fire Burn

_____ Diking/Damming of spilled product or firefighting runoff (Confinement)

_____ Patching or Stopping Leak (Containment)

_____ Venting/Flaring

Additional tactics (write in):

_____ - _____

_____ - _____

_____ - _____

_____ - _____

Checklist #6

Debriefing

To be conducted at the end of the incident or before units leave the scene.

Debriefing Elements:

_____ Name and type of material involved

_____ Symptoms of Exposure

_____ Any damaged equipment ?

_____ Any contaminated equipment, PPE, supplies?

_____ Who to contact if symptoms develop (Medical follow-up) ?

_____ Critical Incident Stress Debriefing (If applicable)

_____ Point of Contact for Post Incident Information?

_____ Thank personnel before leaving scene

Single Command Worksheet

Incident Commander:_____

Command Staff:

PIO:_____

Liaison:_____

Safety Officer:_____

Section Chiefs:

Operations:_____

Logistics:_____

Planning:_____

Finance:_____

Incident Objectives:

1._____

2._____

3._____

4._____

5._____

Unified Command Worksheet

(For All Level 2 and 3 Incidents)

Unified Command Members:

Fire:_____

Law Enforcement:_____

Railroad:_____

Other:_____

Other:_____

Other:_____

Other:_____

Section Chiefs:

Operations:_____

Logistics:_____

Planning:_____

Finance:_____

Incident Objectives:

1._____

2._____

3._____

4._____

5._____

Other Possible Agencies for Unified Command

United States Coast Guard

Federal Railroad Administration

Office of the State Fire Marshal

County Health (Medical)

Oregon DEQ (EPA)

Resource Worksheet

The type and kinds of resources are dependent on the nature of the incident. Resources should be managed by 3 basic types: Human, Equipment, Supplies. Resources listed on this worksheet may only be part of the resources required.

Probable Resources (Short List):

_____Railroad Operating Specialists

_____Hazmat Team and Specialists

_____Foam Application Apparatus – Airport Crash Units, Engines, etc.

_____Railroad Heavy Equipment (track clearing etc.)

_____Environmental Specialists (DEQ) and Railroad Contractor

_____Firefighters, Police, EMS, from mutual aid and other jurisdictions

_____County Emergency Management Officials

_____County Public Works Equipment

Possible Resources (Long List): In addition to the "Short List" resources, some of the following resources may be needed.

_____Tank Car Specialists

_____Foam Caches – State Fire Marshal, Clean Rivers Coop., Tank farms

_____EMS Units

_____State Emergency Management Officials

_____State Public Works Equipment

_____Product (Chemical) Specialists

_____State Incident Management Teams

_____National Transportation Safety Board

_____Federal Railway Administration

_____Federal EPA

_____Salvation Army

_____American Red Cross

_____Local Merchants (Food, Motel, Hardware etc.)

_____Safety Equipment Suppliers

_____Fish and Wildlife

_____County Health Dept.

_____US Coast Guard

_____Water and Sewage Departments

_____Oregon DOT

SCHOOLS:

Clatskanie Elementary School
815 S Nehalem St
Clatskanie, OR 97016

Clatskanie Middle/High School
471 SW Bel Air Drive
Clatskanie, OR 97016

Piercing Arrow Private School
330 N Nehalem
Clatskanie, OR 97016

Columbia City Elementary School
2000 Second Street
Columbia City, OR 97018

Hudson Park Elementary School
28176 Old Rainier Rd
Rainier, OR 97048

North Columbia Academy
28168 Old Rainier Rd
Rainier, OR 97048

Rainier Jr/Sr High School
28170 Old Rainier Rd
Rainier, OR 97048

Rainier Special Education
28166 Old Rainier Rd
Rainier, OR 97048

Creekside Jr Academy Pre-School
2696 Columbia Blvd
St Helens, OR 97051

St Helens High School
2375 Gable Rd
St Helens, OR 97051

St Helens Middle School
354 N 15th St
St Helens, OR 97051

CCEC High School
474 N 16th St
St Helens, OR 97051

Lewis & Clark Elementary School
111 S 9th St
St Helens, OR 97051

McBride Elementary School
2774 Columbia Blvd
St Helens, OR 97051

Connection Academy Pre School
1050 Old Portland Rd
St Helens, OR 97051

Grant Watts Elementary School
52000 SE Third Pl
Scappoose, OR 97056

Otto Peterson Elementary School
52050 SE 3rd Street
Scappoose, OR 97056

Scappoose High School
33700 SE HS Way
Scappoose, OR 97056

Scappoose Middle School
52265 Col River Hwy
Scappoose, OR 97056

Grace Christian Pre School
51737 Col River Hwy
Scappoose, OR 97056

Seventh Day Adventist School
54285 Columbia River Hwy
Scappoose, OR 97056

Warren Elementary School
34555 Berg Rd
Warren, OR 97053

S Columbia Family School
34555 Berg Rd
Warren, OR 97053

Columbia County Christian School
56523 Columbia River Hwy
Warren, OR 97053

NURSING HOMES/ASSISTED LIVING & URGENT CARE CENTER:

Amber Assisted Living, 365 SW Bel Aire Dr, Clatskanie, OR 97016 32 beds
Avamere Assisted Living, 2400 Gable Rd, St Helens, OR 97051
Meadow Park Health Specialty, 75 Shore Dr, St Helens, OR 97051 92 beds
Columbia Care Center, 33910 Columbia Ave, Scappoose, OR 97016 40 beds
Rose Valley Assisted Living, 33800 SE Fredericks, Scappoose, OR 97016
Legacy Urgent Care Center, 500 N Columbia River Highway, St Helens, OR 97051

SMALLER SAINT HELENS ASSISTED LIVING FACILITIES:

Alternatives CCMH, 105 S 3rd St
Company & Care Home, 2149 Columbia Blvd
Cornerstone CCMH, 271 Columbia Blvd
Creekside Center CCMH, 58646 McNulty Way
Detox Center CCMH, 185 N 4th St
Hope House Adult Foster Care, 59354 Cherrywood Dr
Our House Care Facility CCMH, 124 Forest Park Dr
Spring Meadows Assisted Living, 36070 Pittsburg Rd
Thanksgiving House Adult Foster Care, 184 N 2nd St

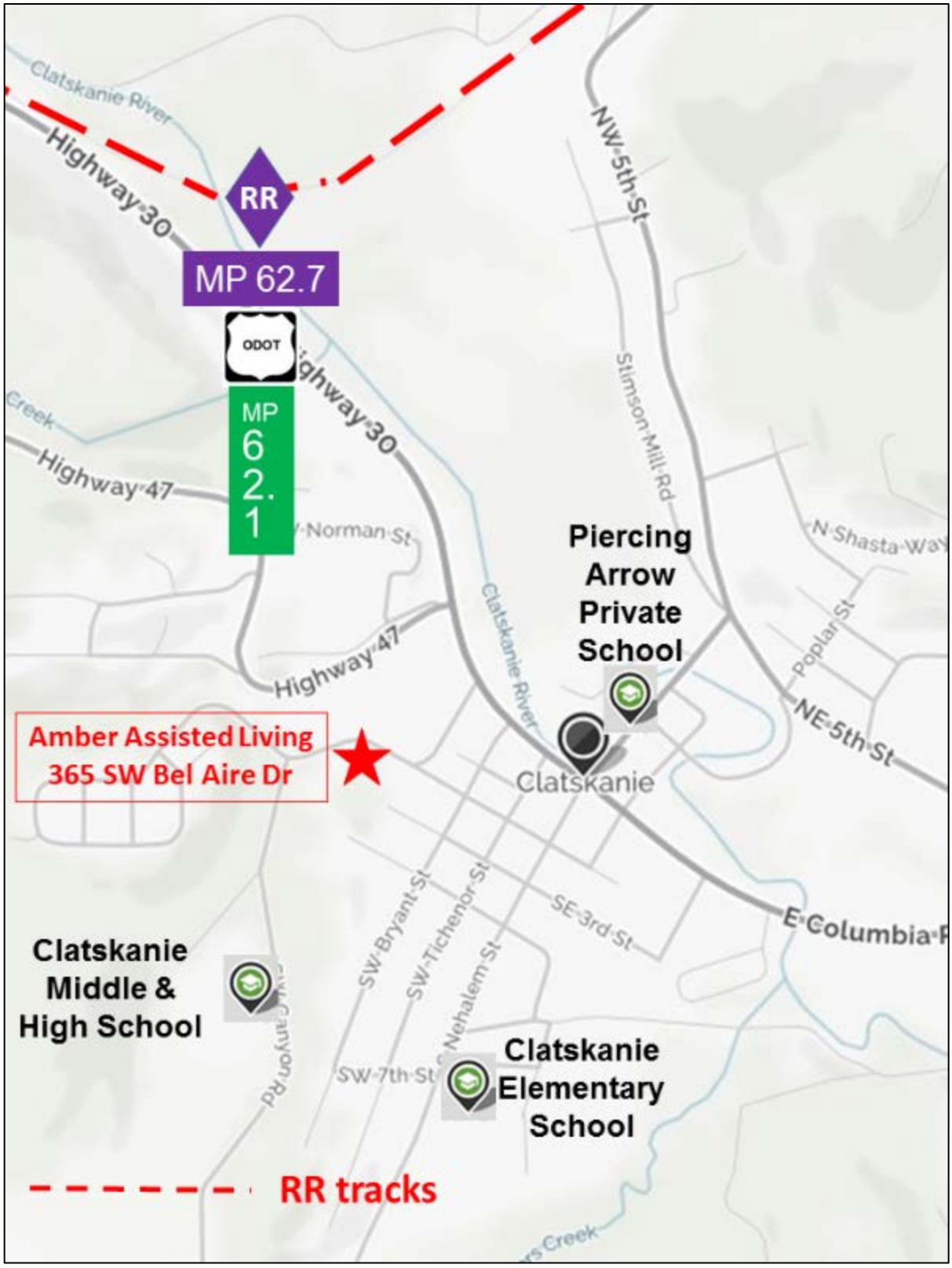
Response Packet Appendixes

The material in these Appendixes is designed to be reproduced as part of the Response Packet in this plan, and carried in all public safety agency vehicles which respond to railroad emergencies.

Appendix A

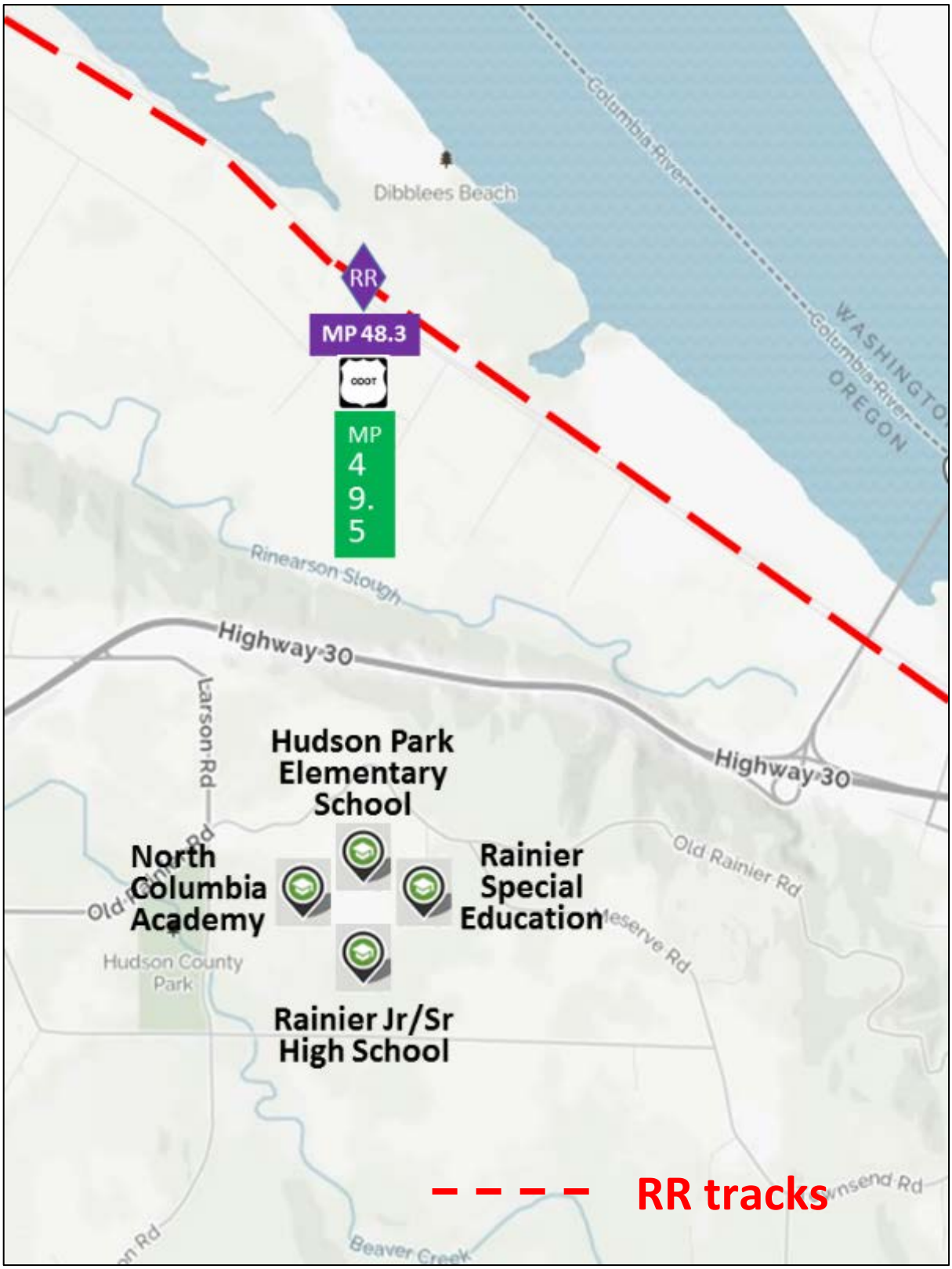
Maps of Schools & Nursing Homes Near RR

CLATSKANIE SCHOOLS

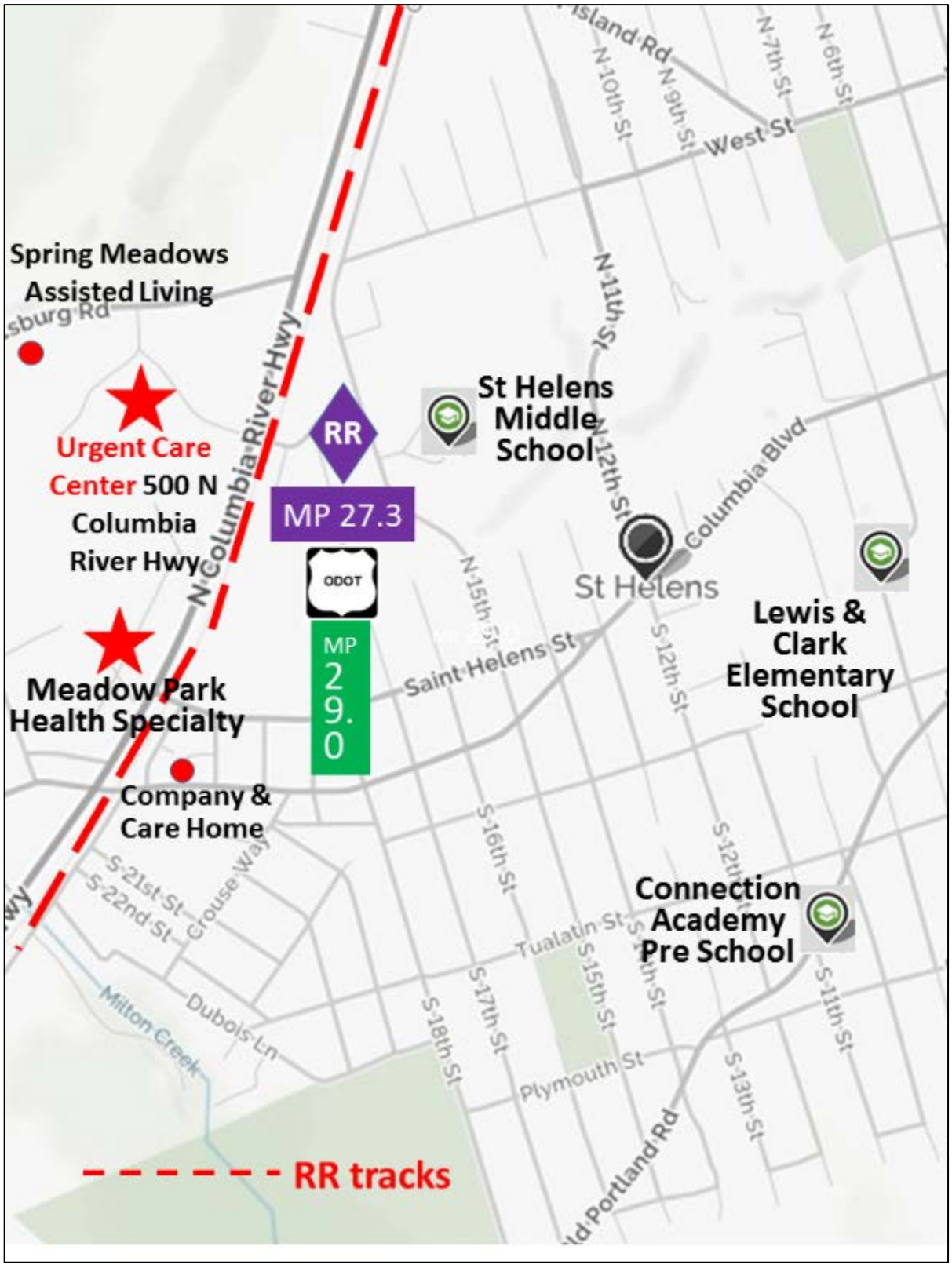


COLUMBIA CITY SCHOOL

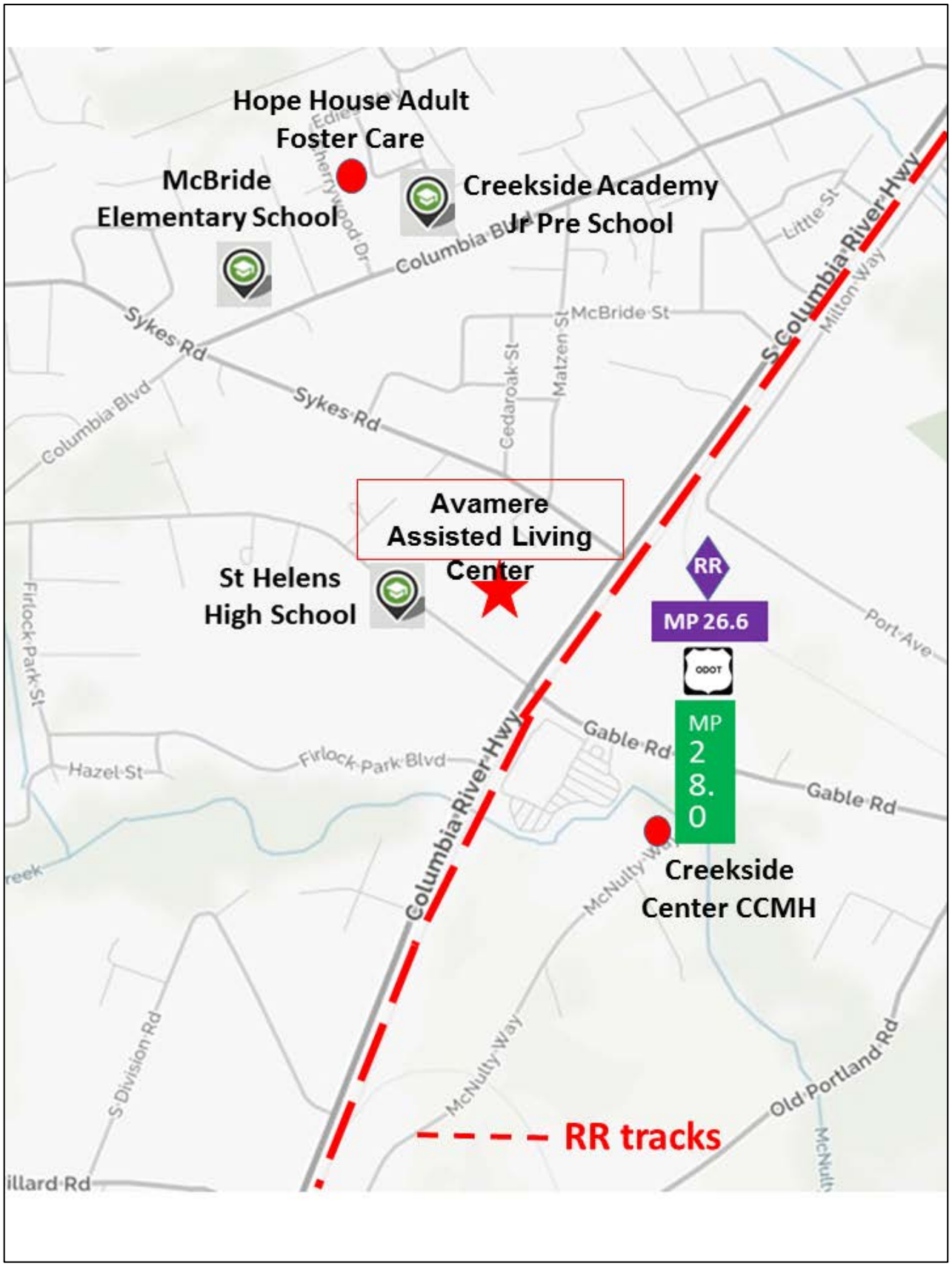
RAINIER SCHOOLS



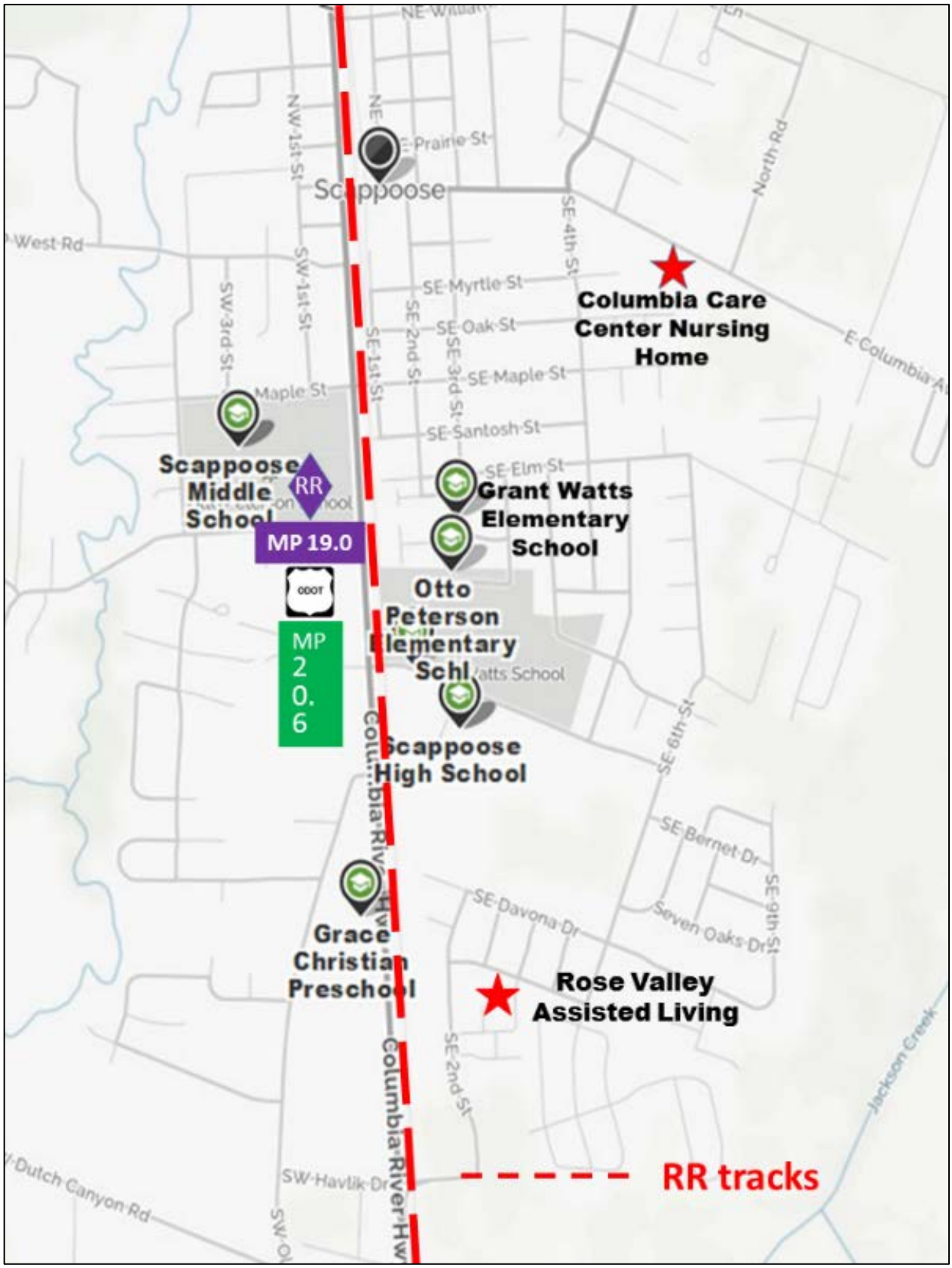
SAINT HELENS SCHOOLS NORTH



SAINT HELENS SCHOOLS SOUTH

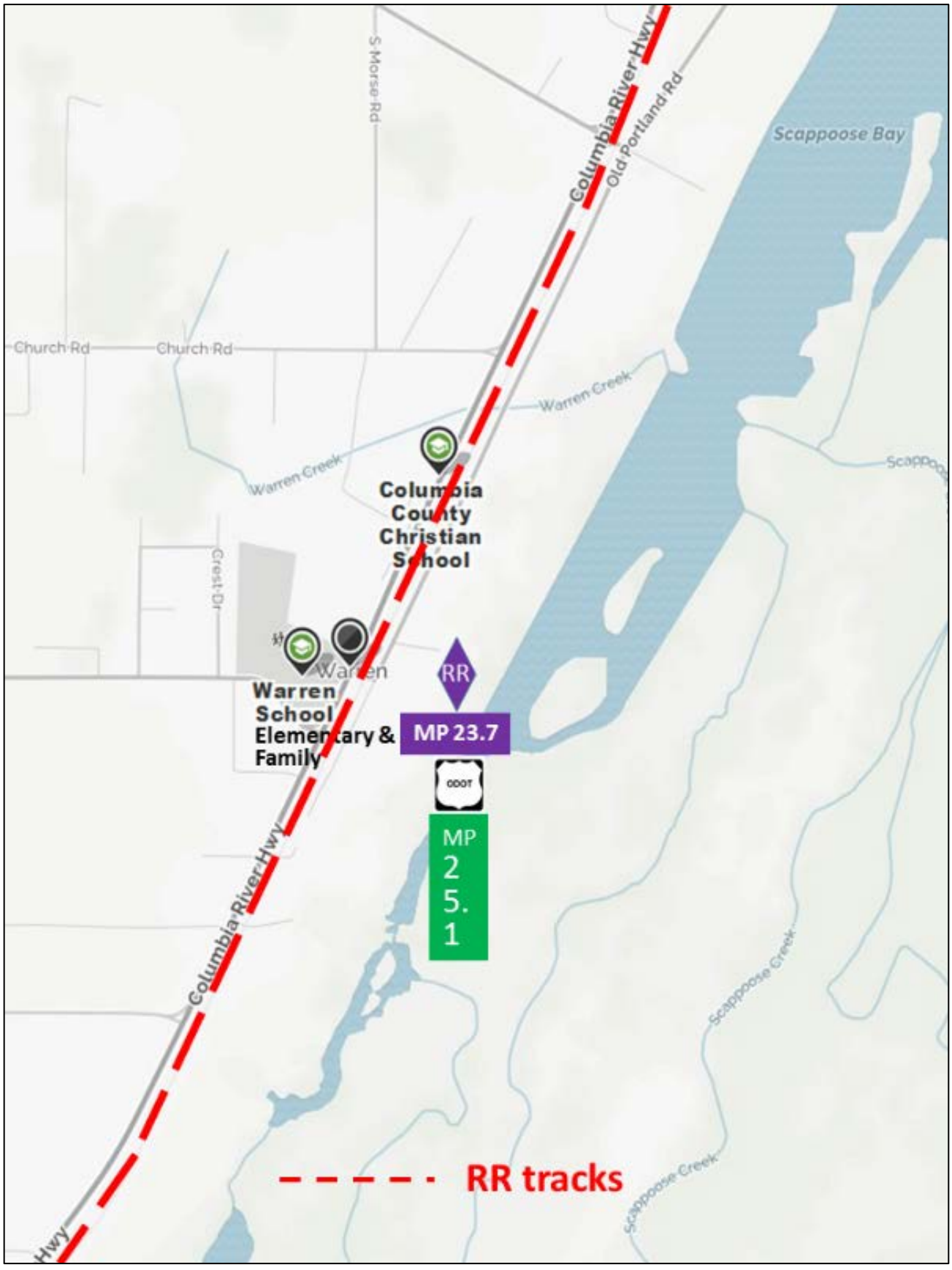


SCAPPOOSE SCHOOLS



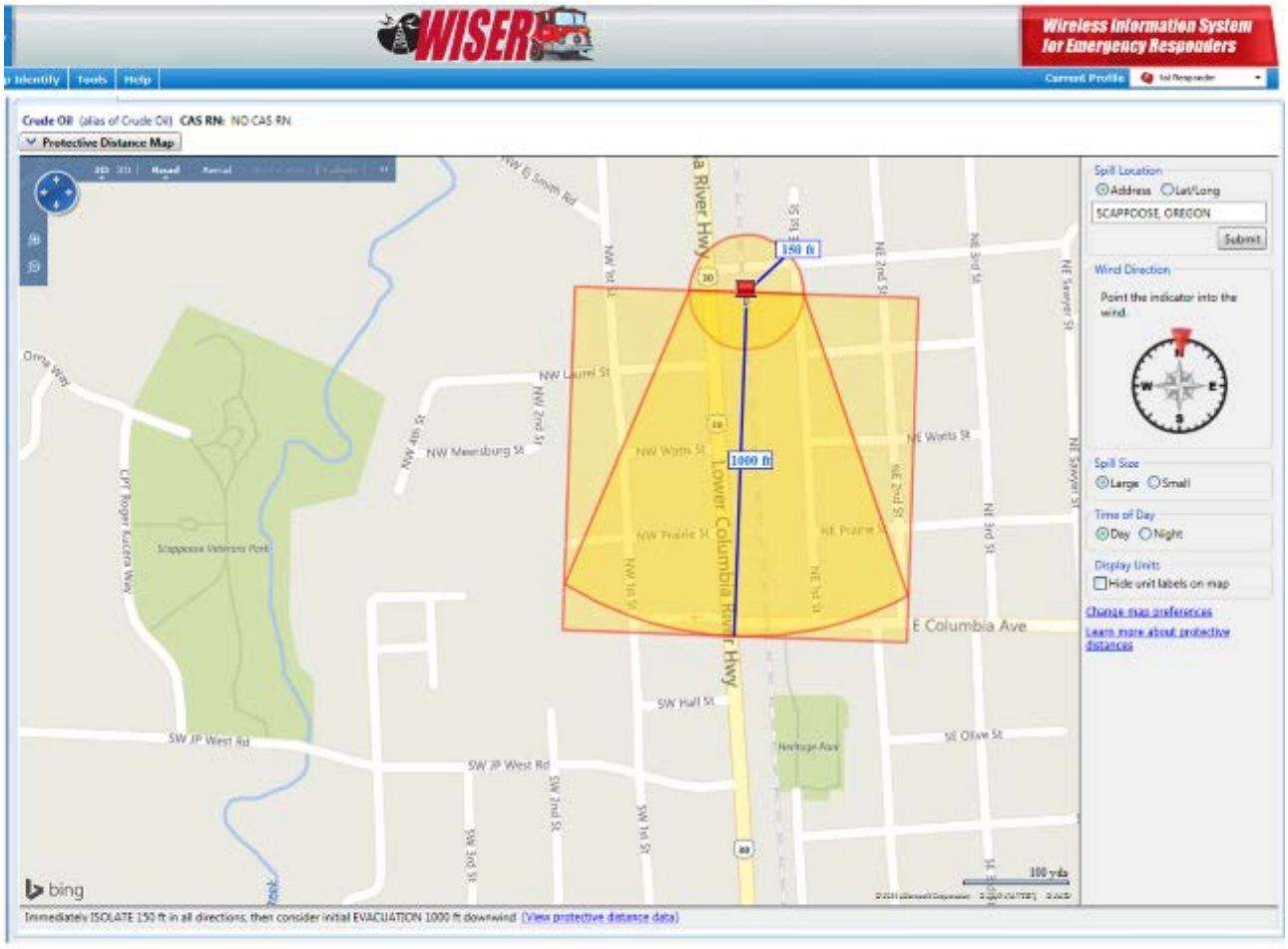
SCAPPOOSE SCHOOLS NORTH

WARREN SCHOOLS



PLUME PROJECTIONS & HAZARDOUS MATERIALS

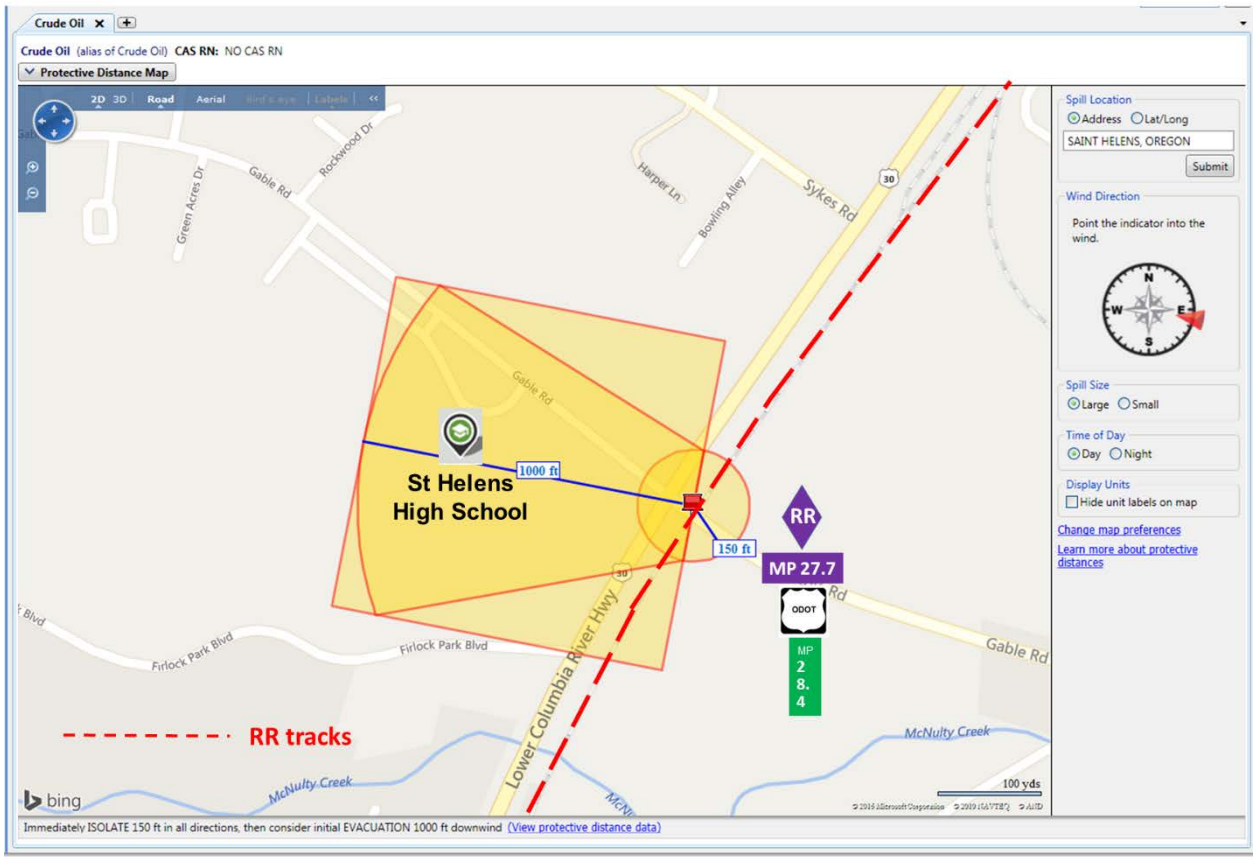
Crude oil, ethanol, anhydrous ammonia and sodium chlorate are 4 products selected for the most probable worst case scenario for a train derailment and chemical release in Columbia County. These products are routinely transported through the County on Portland & Western Railroad track. They all have toxic characteristics which can be calculated and plotted by a software program WISER, which then displays a downwind protective action distance (**PLUME PROJECTION**) , considering variables such as wind direction, size of spill and whether it occurs during the day or night.



WISER (Wireless Information System for Emergency Responders) is a free software program of the National Institutes of Health, National Library of Medicine. It provides first responders at the scene of an incident with integrated information and decision support tools, even with no access to the internet. It has a built-in database of 4,700 known substances which can display characteristics and detailed properties. It contains information on human exposure, industrial hygiene, emergency handling procedures, environmental data, regulatory requirements, OSHA exposure guidelines, and US DOT Emergency Response Guidebook data.

With access to the internet WISER can produce downwind map plots of protective action distances, showing results for large or small spills, and day or night incidents. It can be installed on Microsoft Windows PCs, Apple's IOS devices (iPhone, iPad, and iPod touch), Google Android devices, and BlackBerry devices (internet connectivity required). If a wireless connection is not available for the isolation/protective action distance overlays on maps, the handheld device still has full functionality with access to the critical data available on the device with the program.

Crude oil and ethanol both have the same initial isolation & protective action distances.



Downwind Protective Action Distance of 1,000 feet shown to the west of a large or small, day or night, crude oil release at Gable Road (PNWR milepost 27.7, US Highway 30 milepost 28.4), with the wind coming out of the east.

On all of the plume projections depicted in Appendix B, the railroad tracks are represented by the red dashed line. The exact railroad milepost location for the spill is located by the point of the red "push pin" at the center of the Initial Isolation Distance circle, in this case, 150 feet. The center of the purple "RR" diamond is located perpendicular from the spill, and the railroad milepost number is in the purple rectangle under the diamond, and above the white and black ODOT shield, which designates the Oregon Department of Transportation highway milepost marker adjacent to the spill, shown in the green vertical rectangle.

Individuals within the downwind Protective Action Zone square will either shelter in-place, evacuate, or a combination of both, depending on exact circumstances and emergency response resources. Individuals in the Protection Action Zone may become incapacitated and unable to take protective action and/or incur serious or irreversible health effects. Persons in the Initial Isolation Zone may7 be exposed to dangerous (upwind) and life threatening (downwind) concentrations of material.

PROTECTIVE ACTION DETERMINATION – EVACUATE OR SHELTER IN-PLACE

A **Hazard Analysis** is the use of a model or methodology to estimate the movement of hazardous materials at a concentration level of concern from an accident site, either at a fixed site or on a transportation route to the surrounding area in order to determine which portions of a community may be at risk by a release of such materials. The fastest field method is to utilize the US DOT Emergency Response Guidebook Table of Isolation and Protective Action Distances to determine the appropriate protective action.

The choice of protective actions for a given situation depends on a number of factors. For some cases, evacuation may be the best option; in others, sheltering in-place may be the best course. Sometimes, these two actions may be used in combination. In any emergency, officials need to quickly give the public instructions. The public will need continuing information and instructions while being evacuated or sheltered in-place.

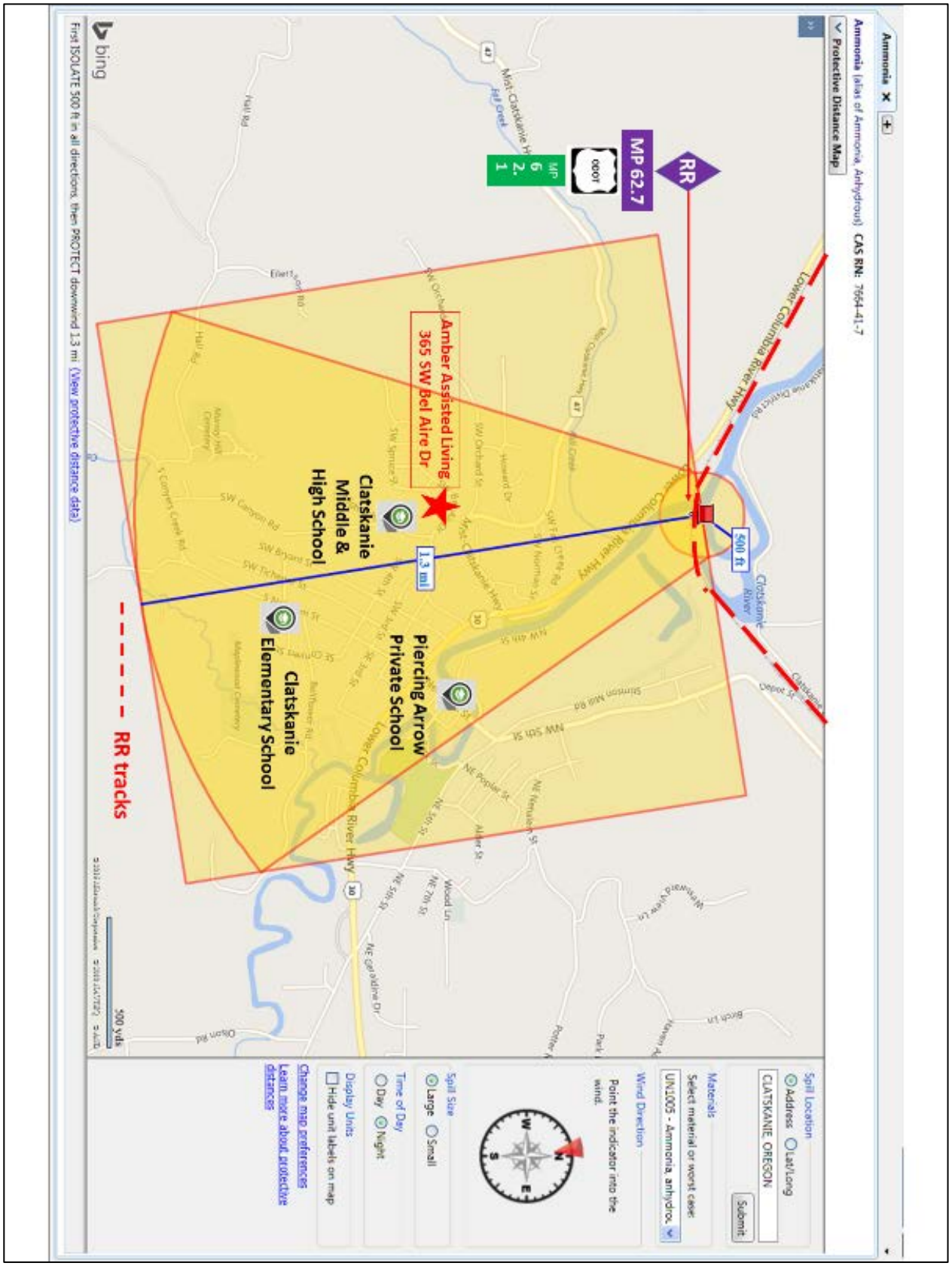
Proper evaluation of the factors listed below will determine the effectiveness of evacuation or in-place protection (shelter in-place). The importance of these factors can vary with emergency conditions. In specific emergencies, other factors may need to be identified and considered as well. This list indicates what kind of information may be needed to make the initial decision:

The Hazardous Material
- Degree of health hazard
- Chemical and physical properties
- Amount involved
- Containment/control of release
- Rate of vapor movement

The Population Threatened
- Location
- Number of people
- Time available to evacuate or shelter in-place
- Ability to control evacuation or shelter in-place
- Building types and availability
- Special institutions or populations, e.g., nursing homes, hospitals, prisons

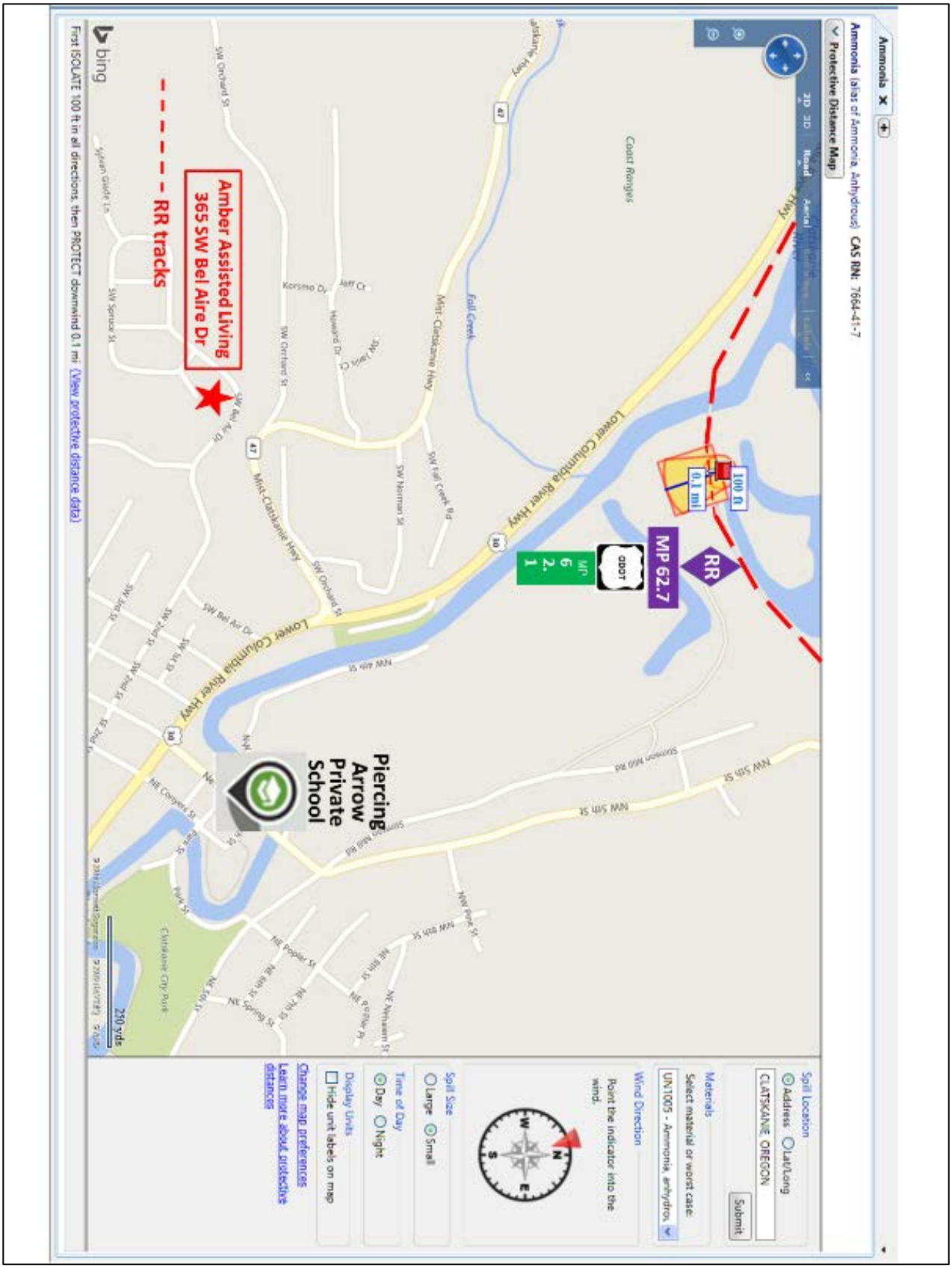
Weather Conditions
- Effect on vapor and cloud movement
- Potential for change
- Effect on evacuation or shelter in-place

CLATSKANIE ANHYDROUS AMMONIA LARGE NIGHT RELEASE

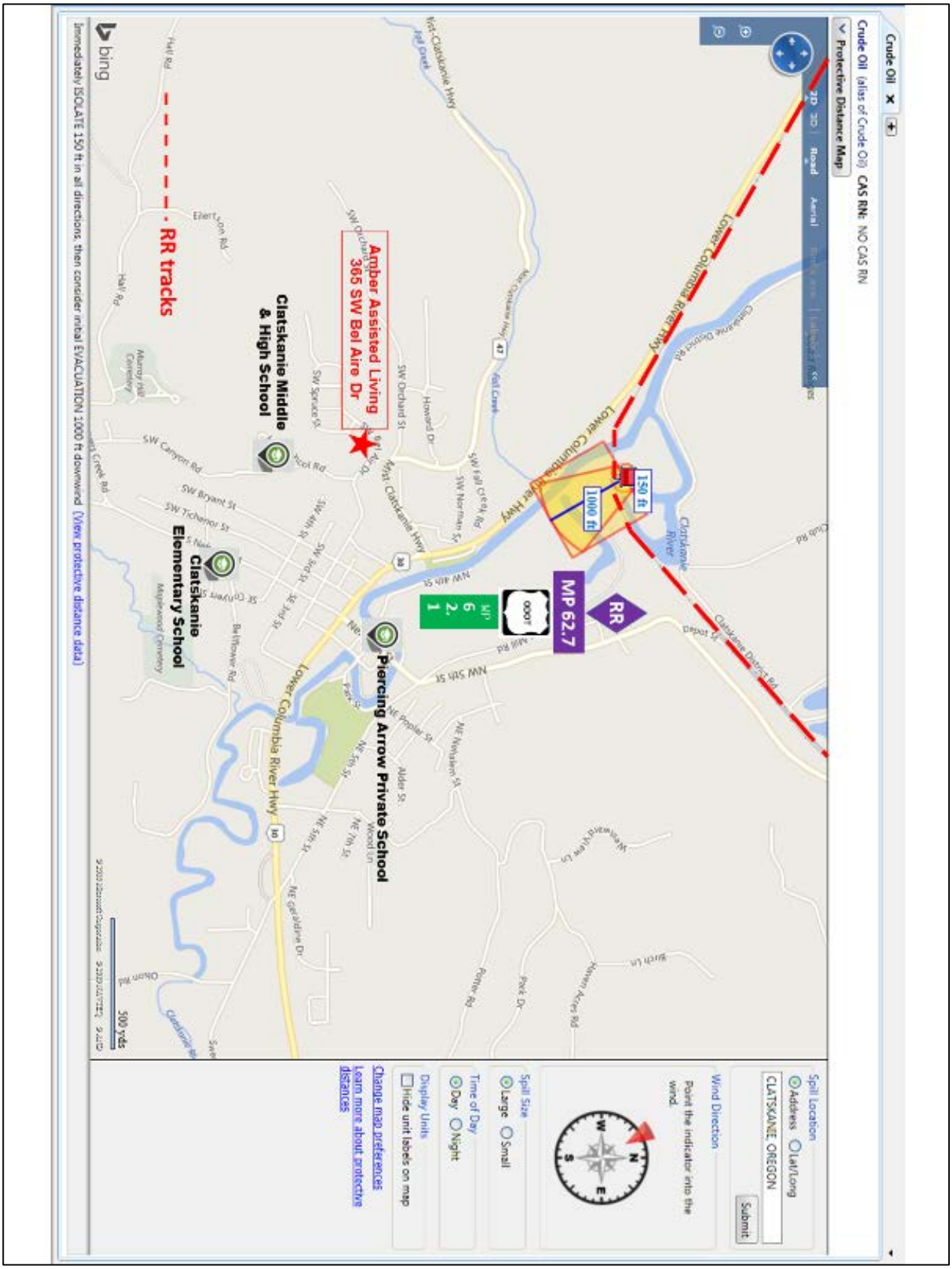


CLATSKANIE ANHYDROUS AMMONIA DAY LARGE RELEASE

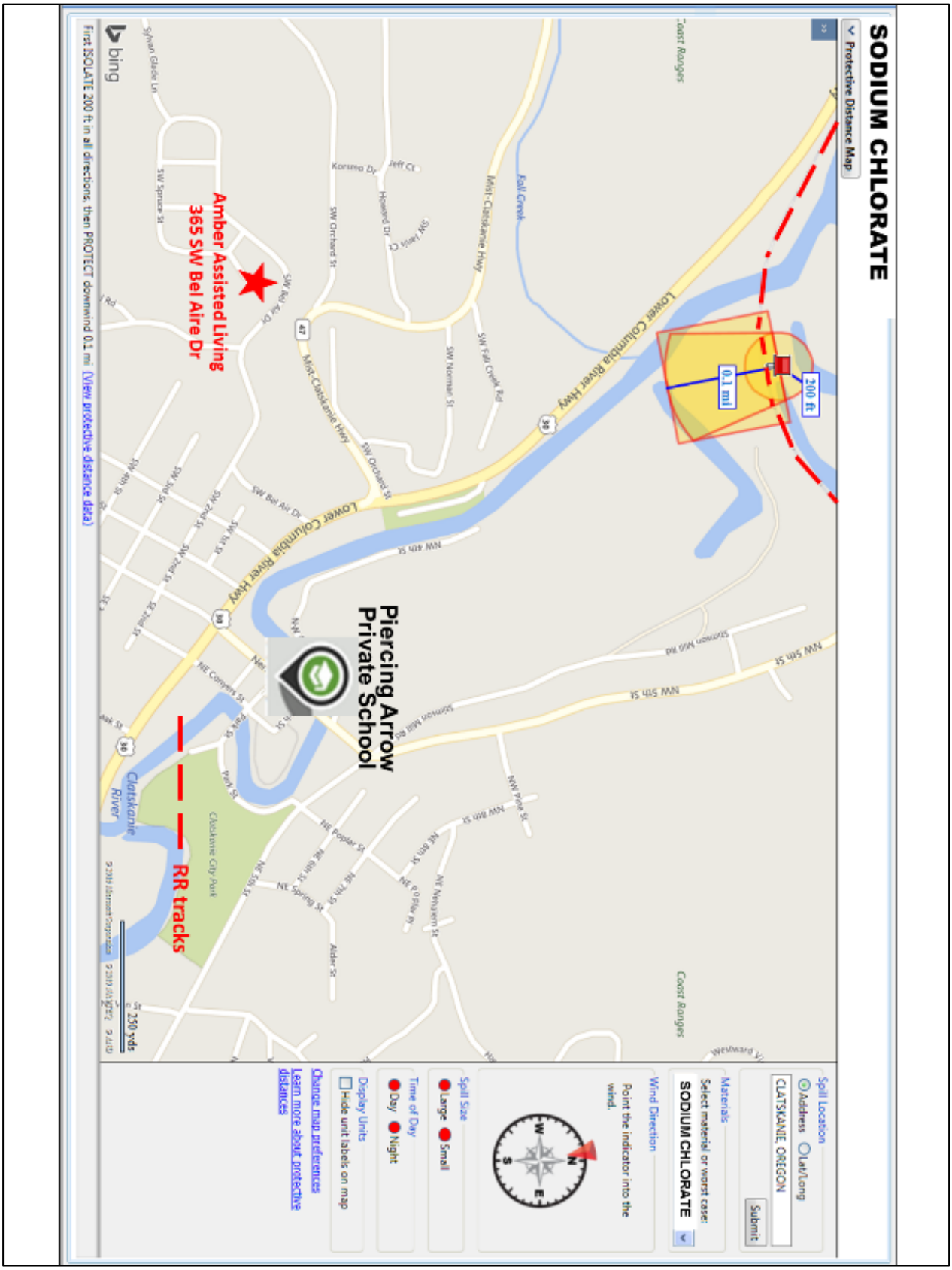
CLATSKANIE ANHYDROUS AMMONIA DAY SMALL RELEASE



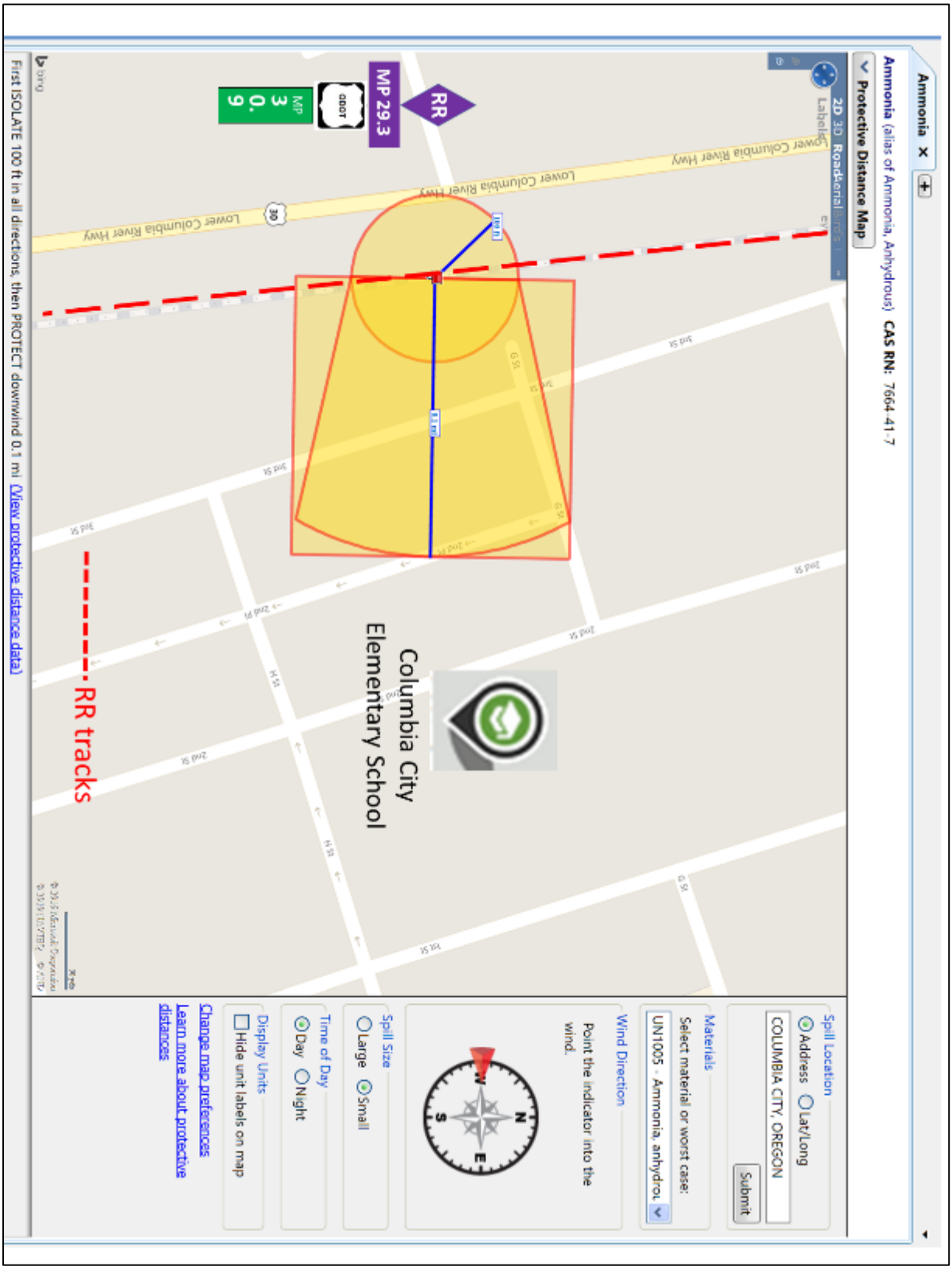
CLATSKANIE CRUDE OIL/ETHANOL DAY/NIGHT LARGE/SMALL SPILL



CLATSKANIE SODIUM CHLORATE DAY/NIGHT LARGE/SMALL RELEASE



COLUMBIA CITY ANHYDROUS AMMONIA DAY SMALL RELEASE



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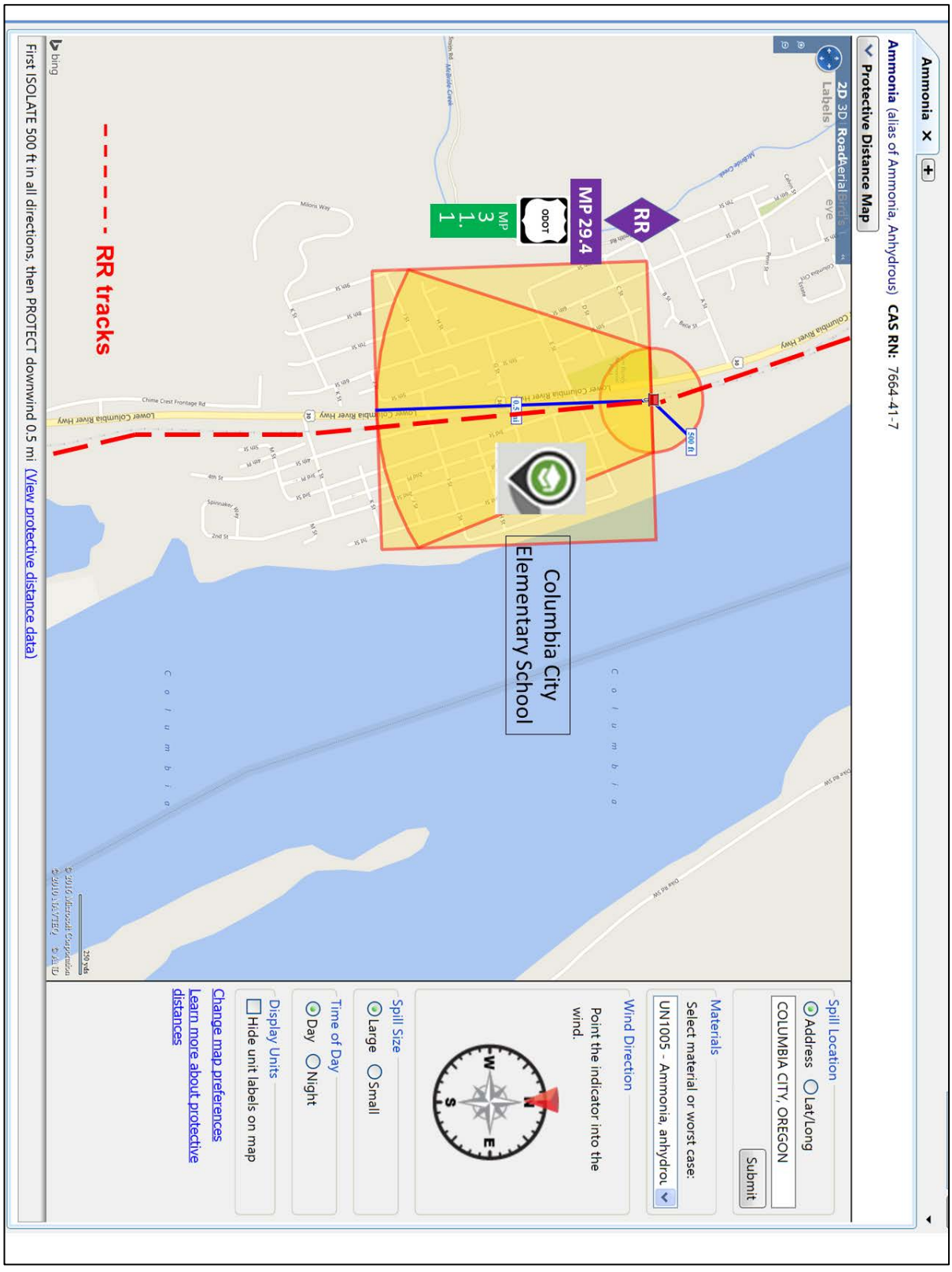
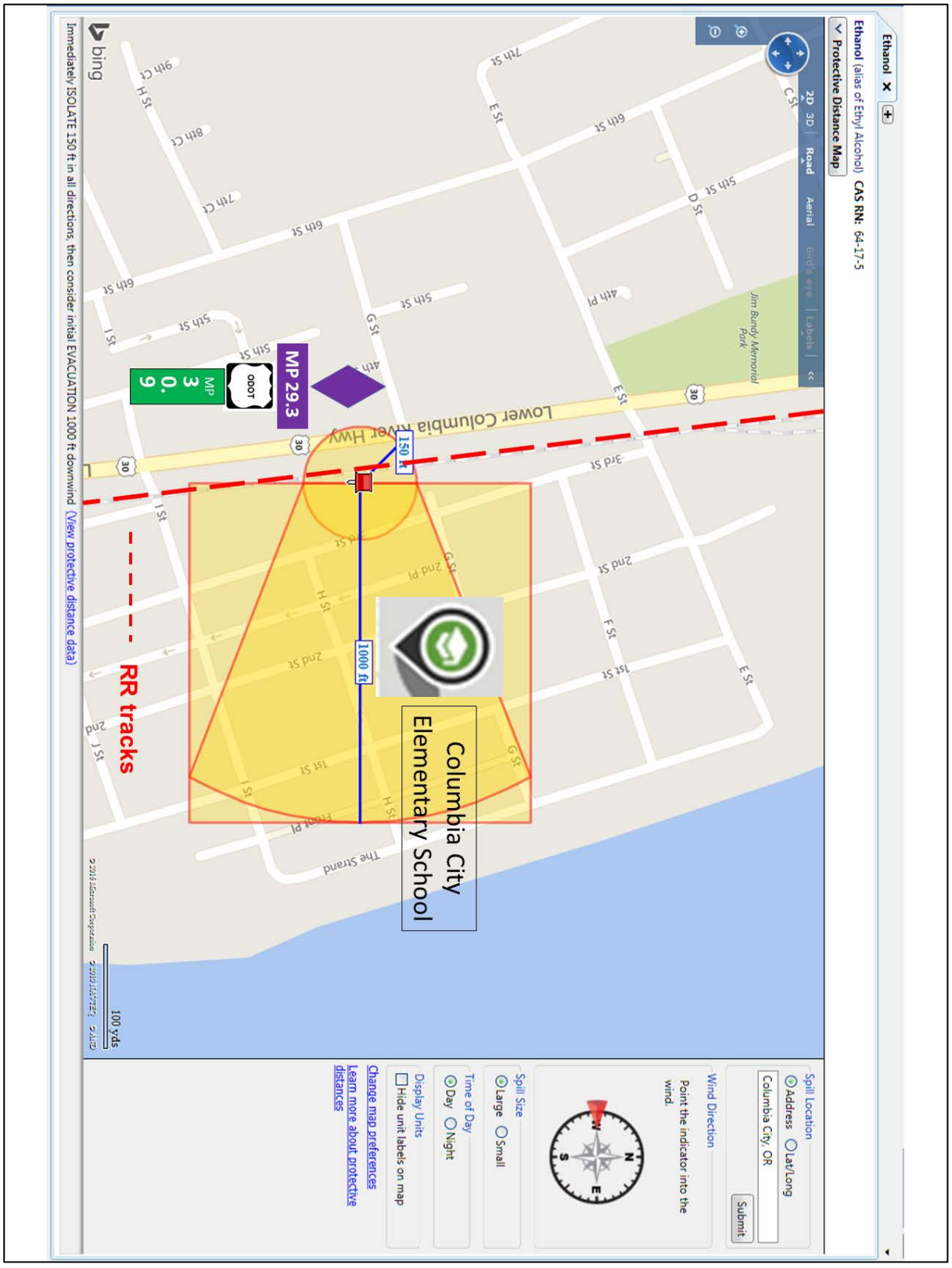
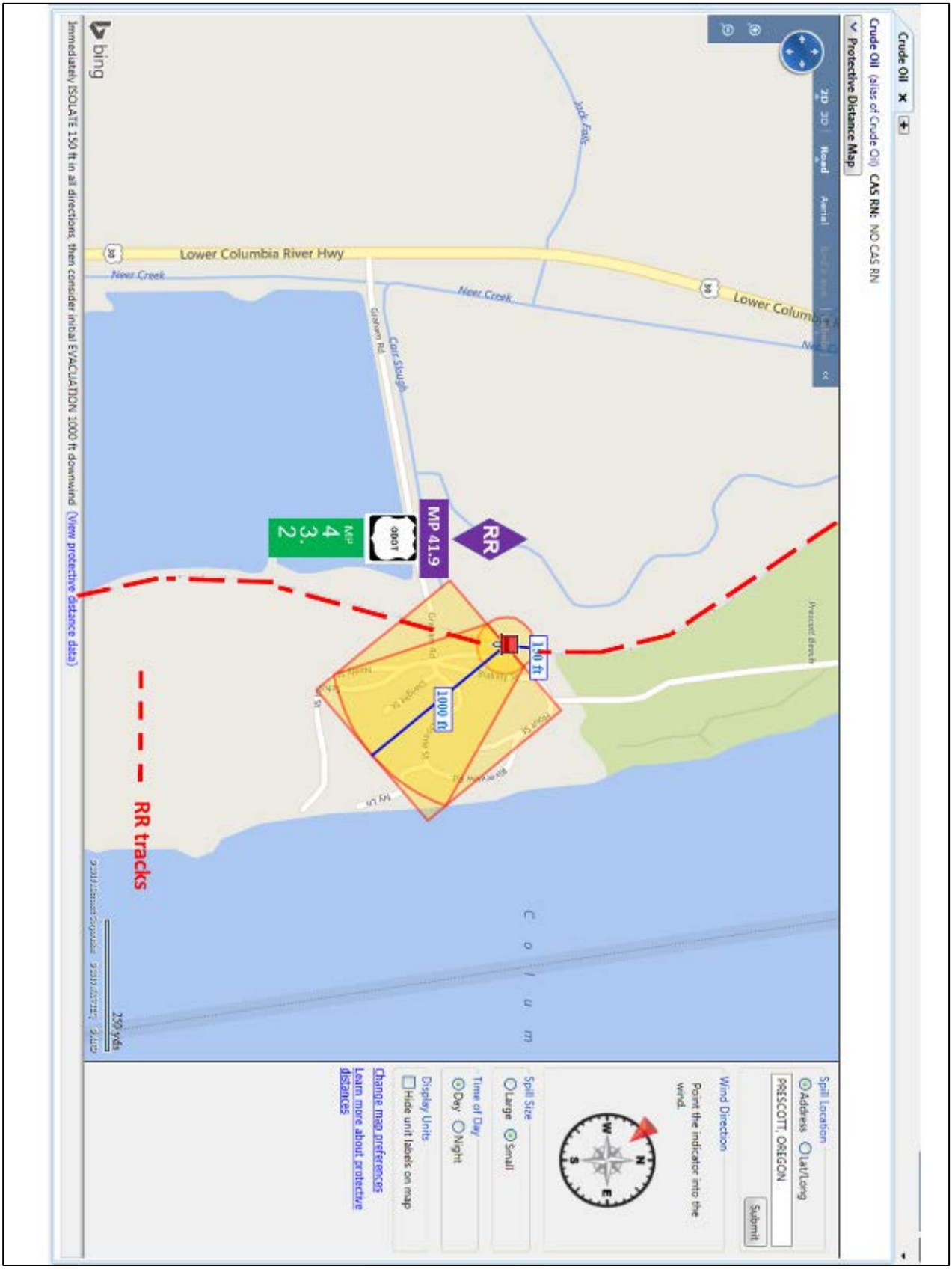


COLUMBIA CITY ETHYL ALCOHOL (ETHANOL) DAY/NIGHT LARGE/SMALL RELEASE

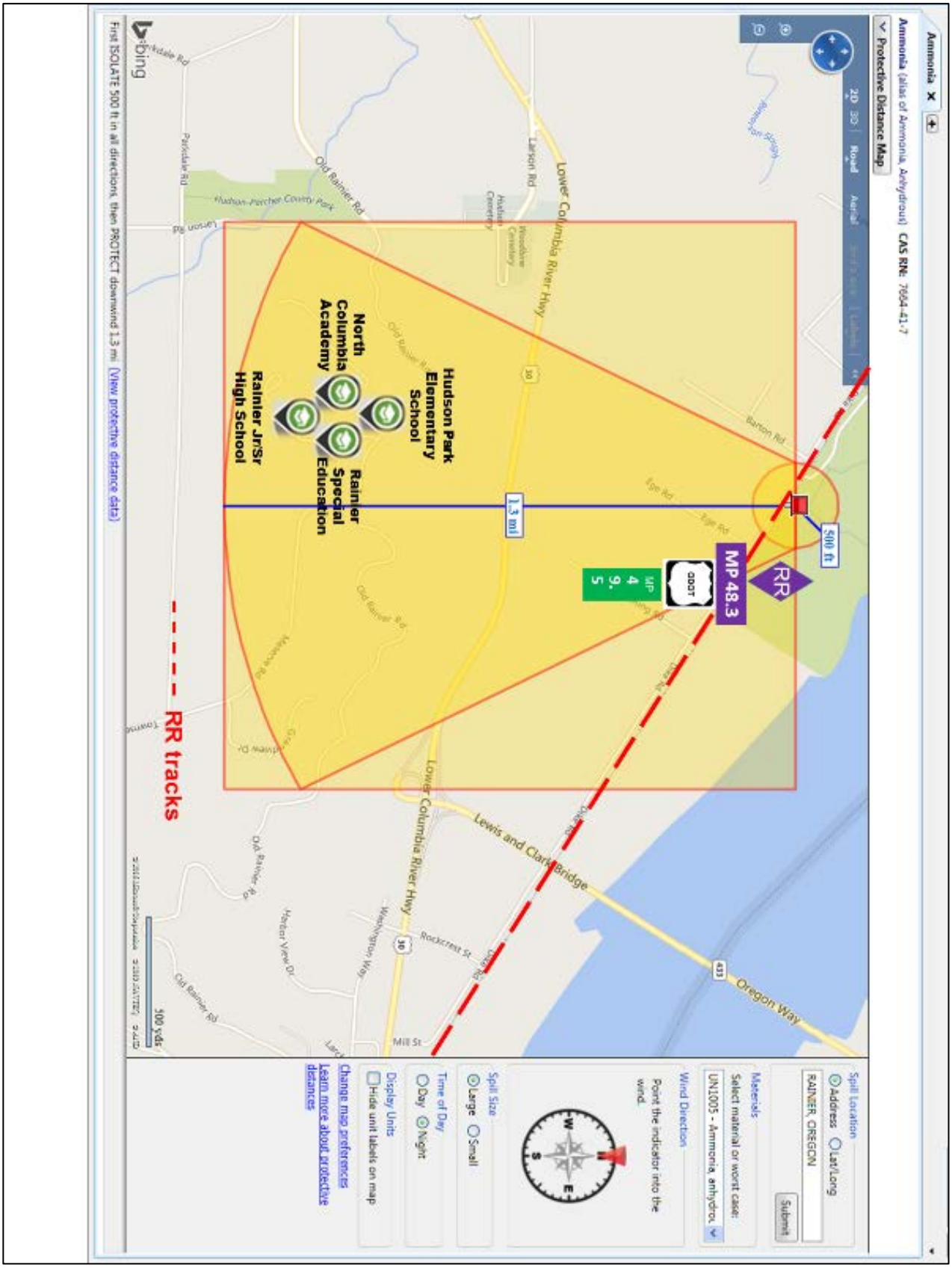


PRESCOTT CRUDE OIL/ETHANOL DAY/NIGHT LARGE/SMALL RELEASE



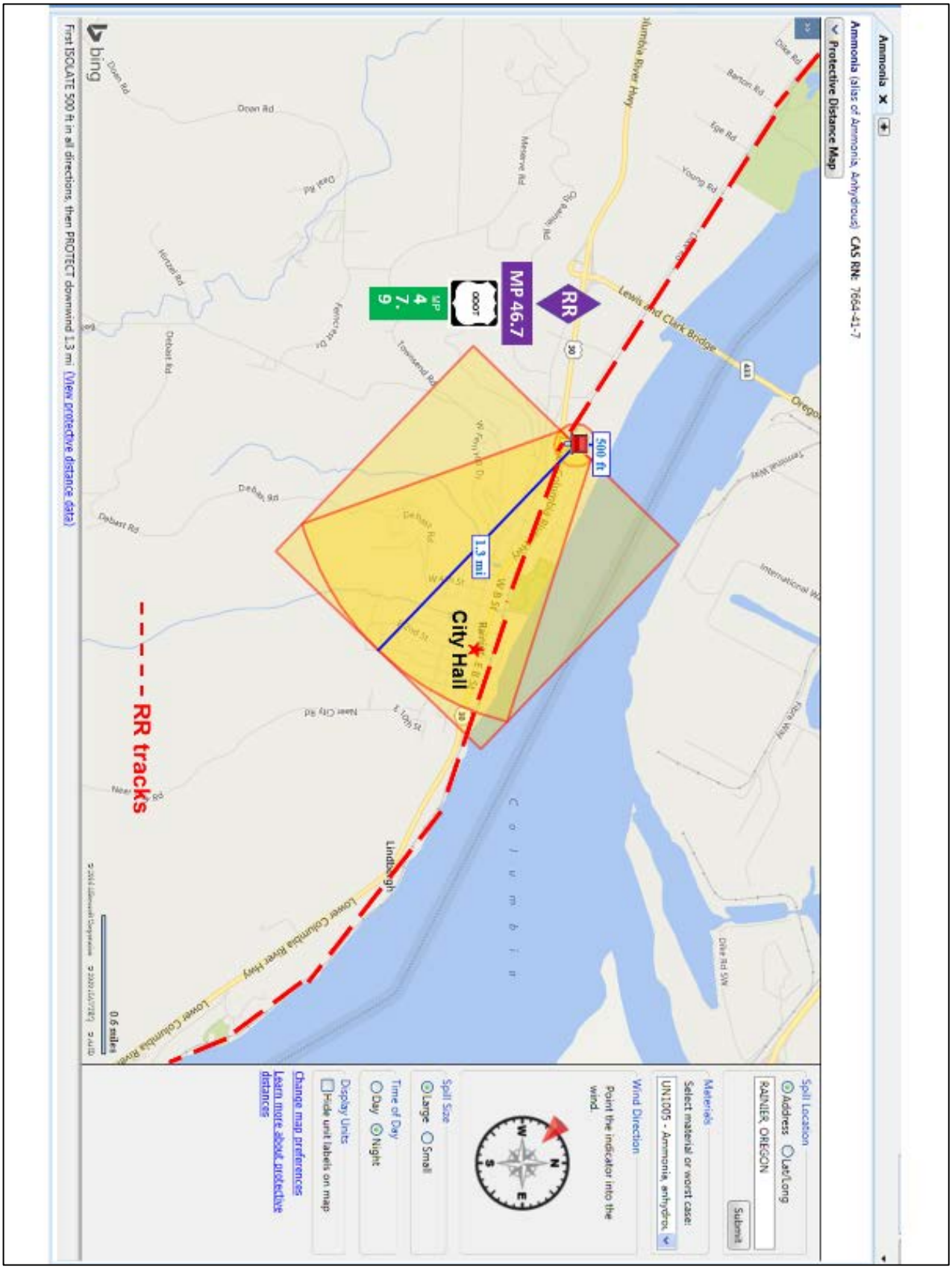
PRESCOTT SODIUM CHLORATE DAY/NIGHT LARGE/SMALL RELEASE

RAINIER ANHYDROUS AMMONIA LARGE NIGHT RELEASE



RAINIER ANHYDROUS AMMONIA DAY LARGE RELEASE

RAINIER ANHYDROUS AMMONIA NIGHT LARGE RELEASE TOWN



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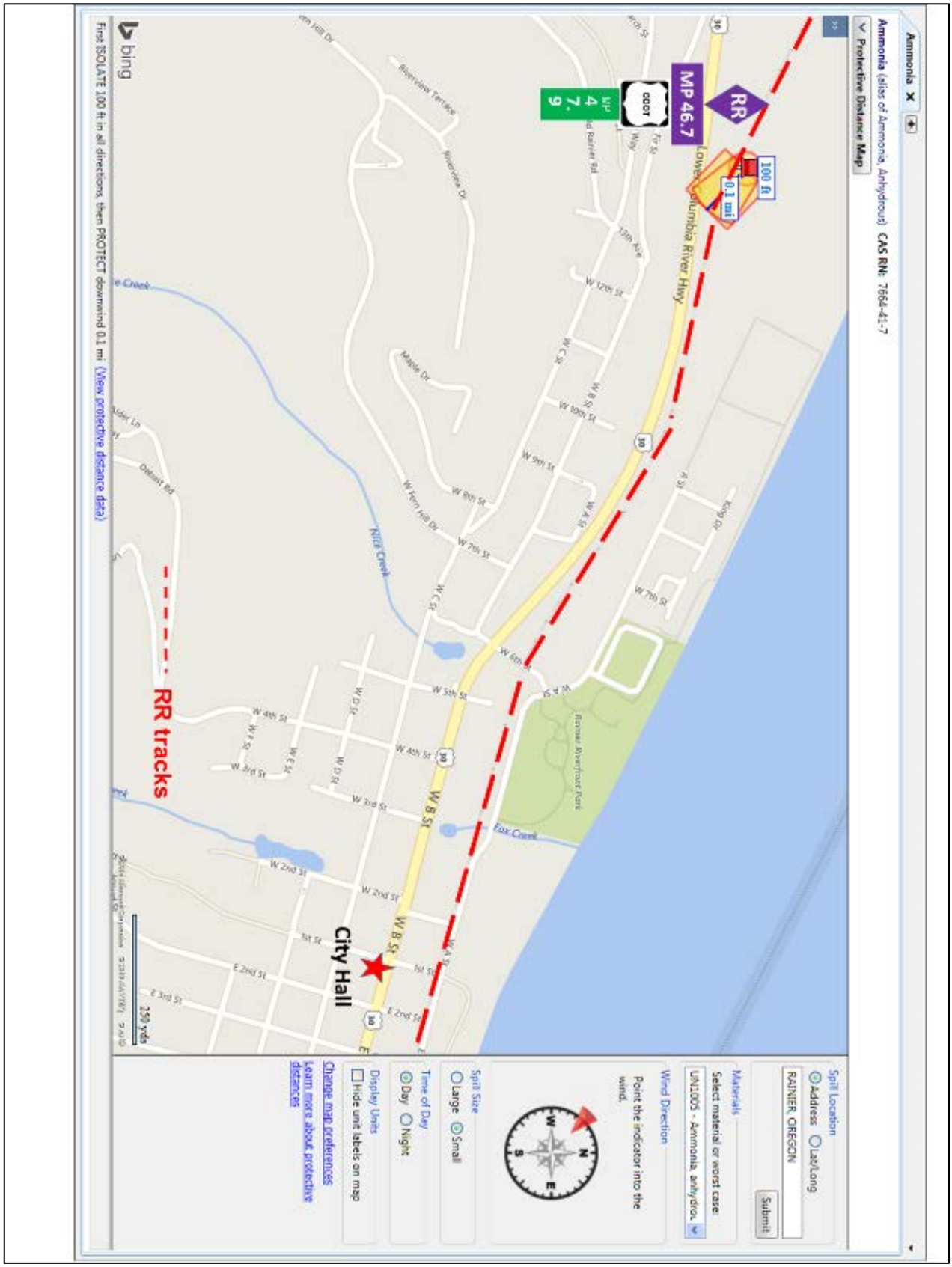
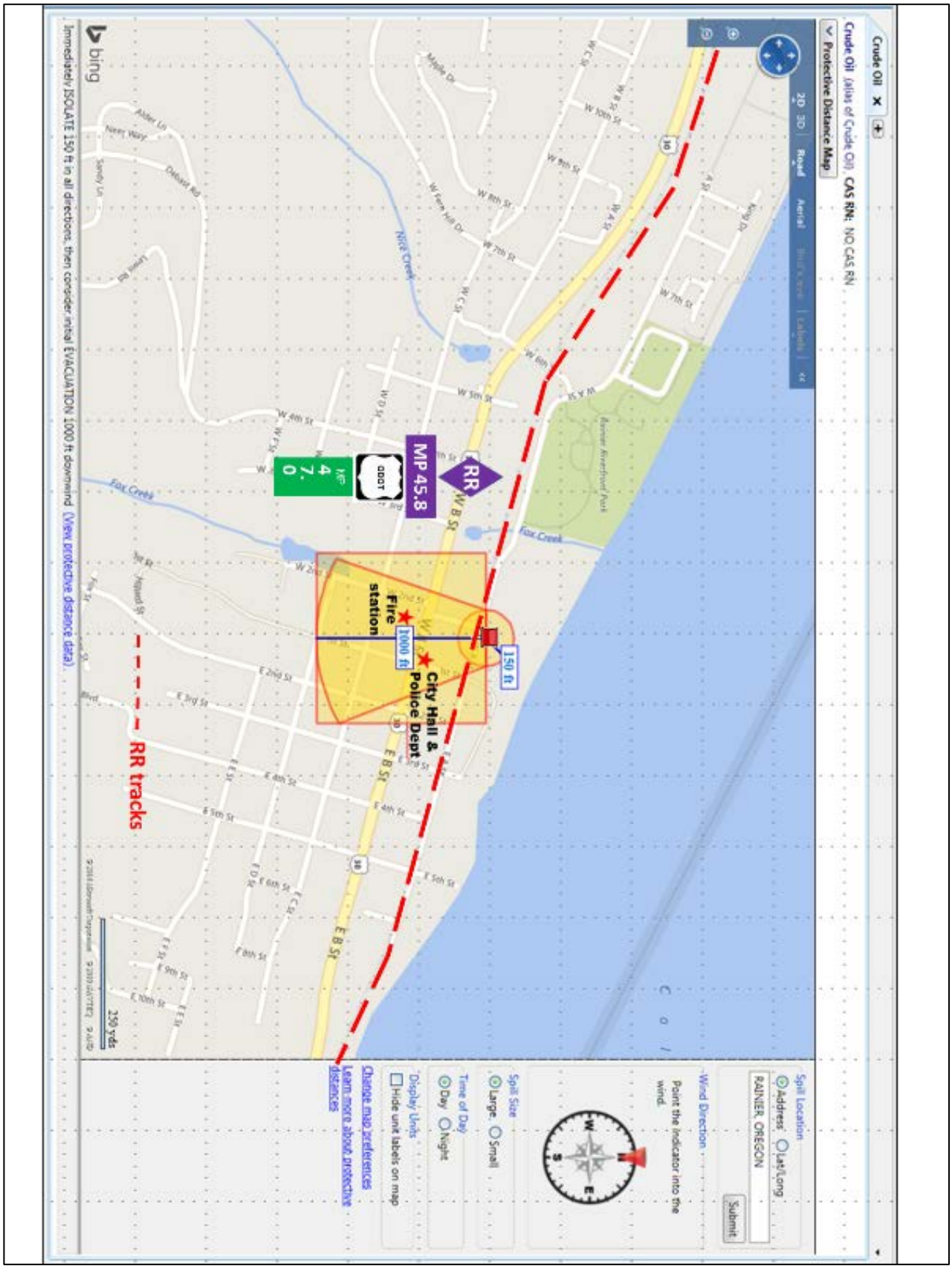
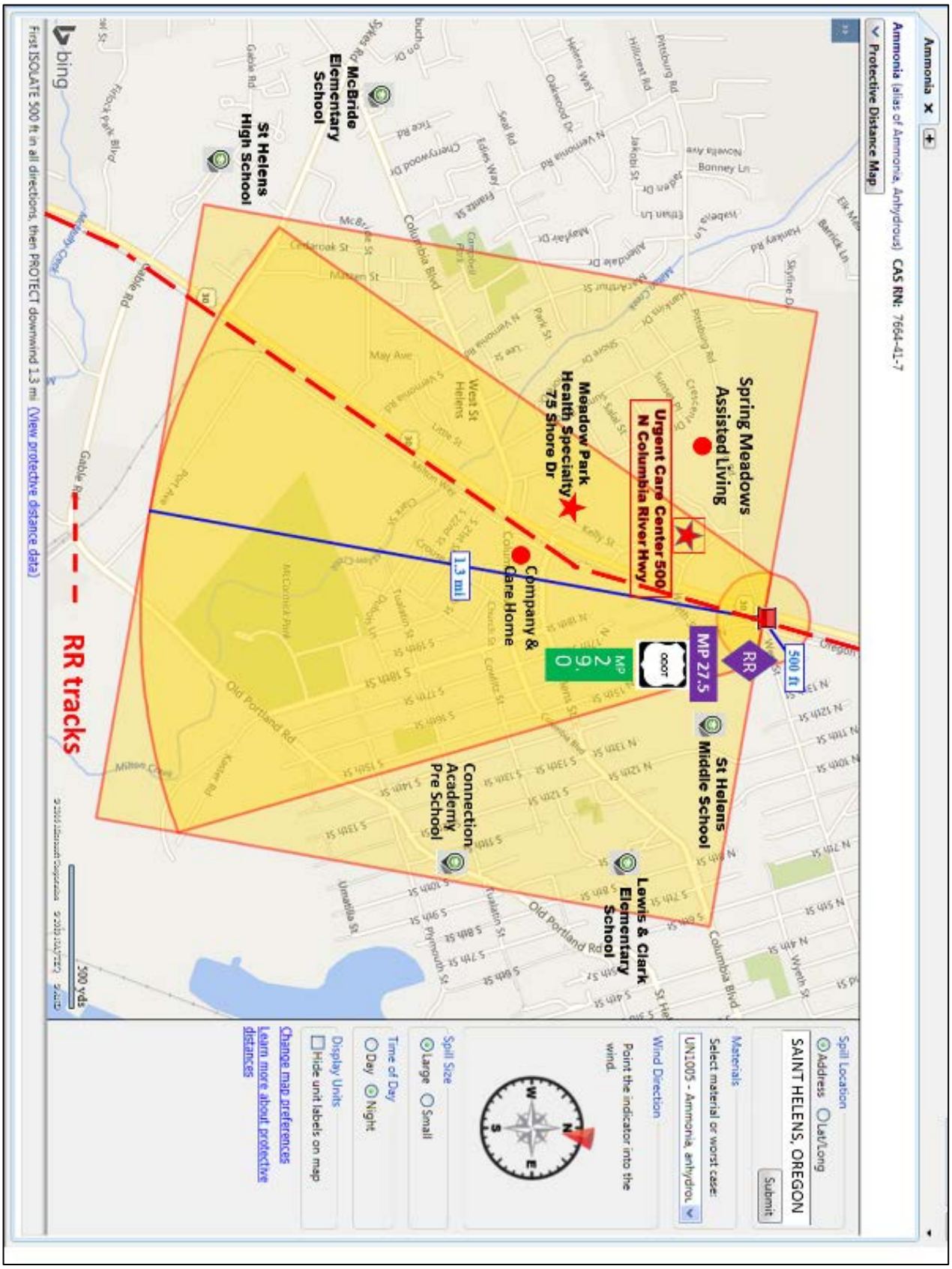


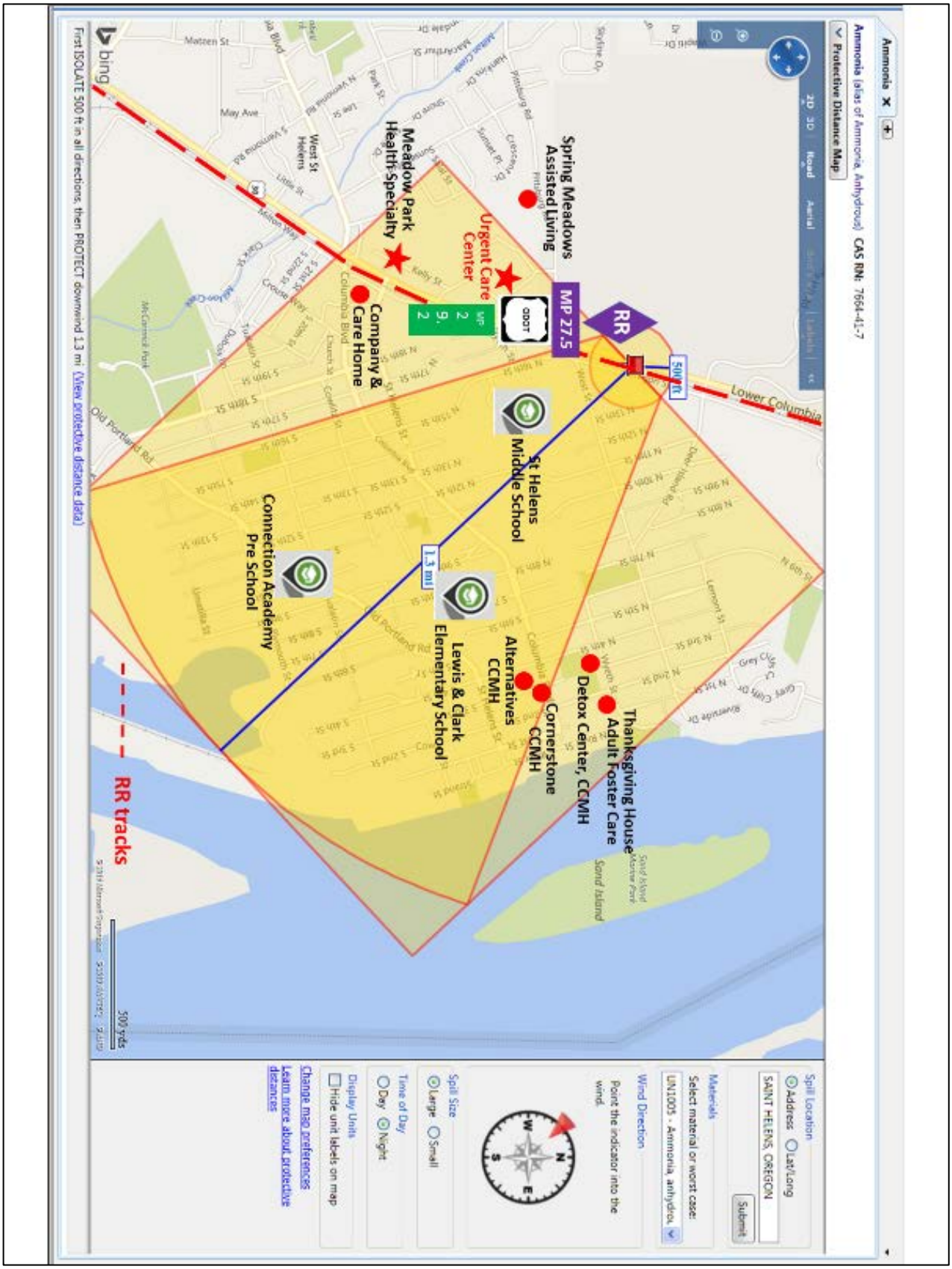
RAINIER CRUDE OIL/ETHANOL DAY/NIGHT LARGE/SMALL RELEASE TOWN



ST HELENS ANYHRDOUS AMMONIA LARGE NIGHT RELEASE



SAINT HELENS ANHYDROUS AMMONIA NIGHT LARGE RELEASE NORTH



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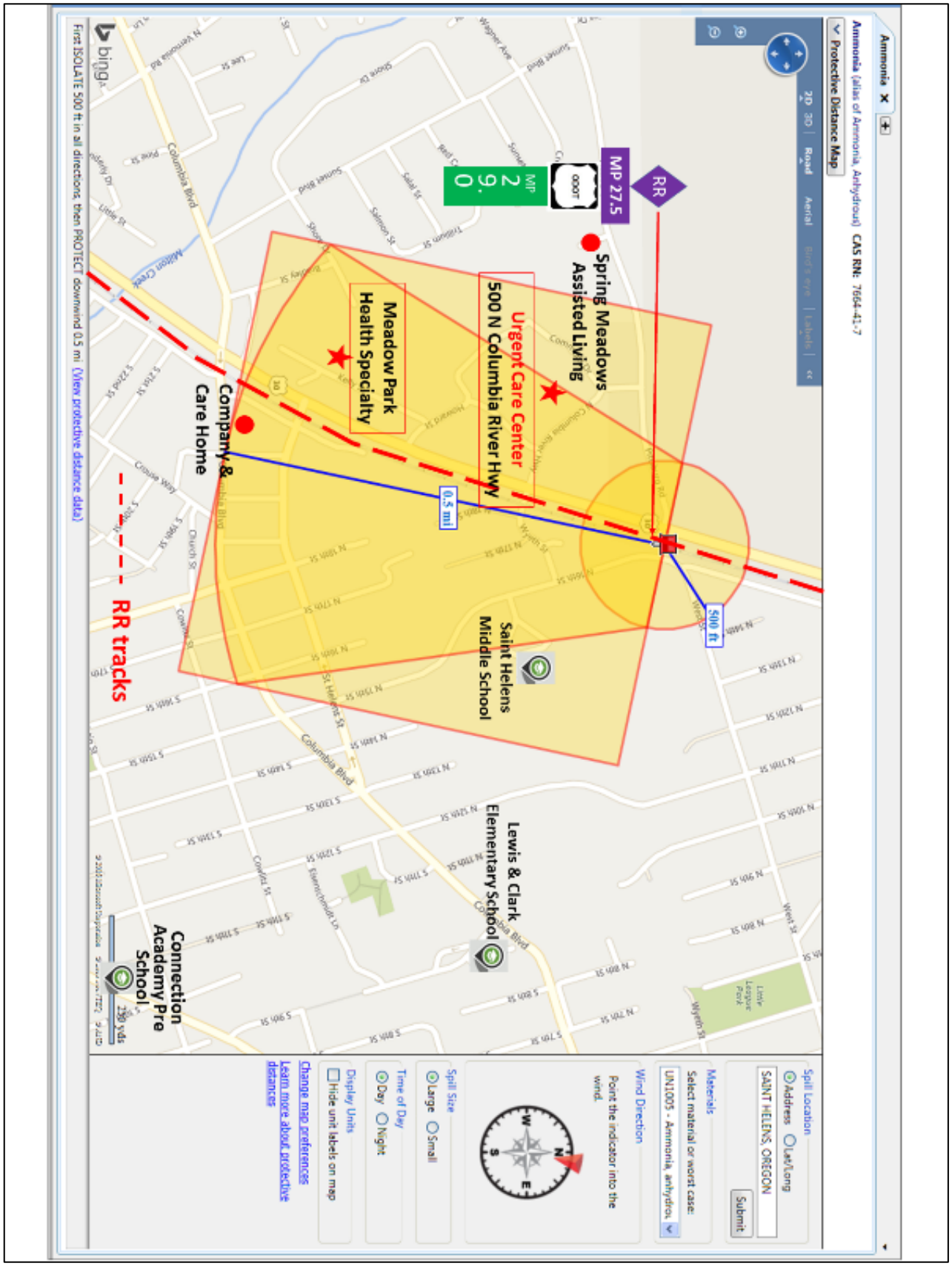
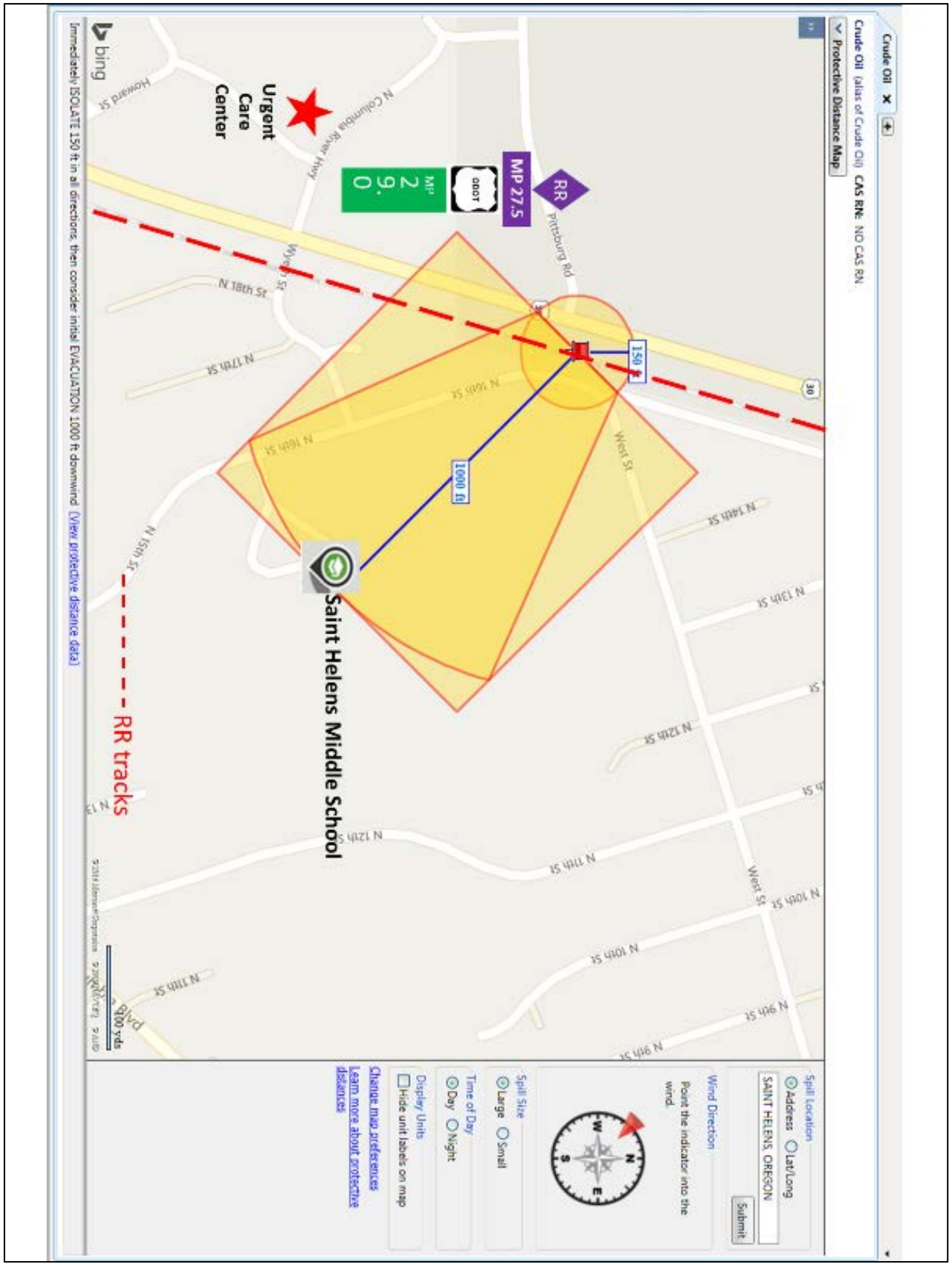


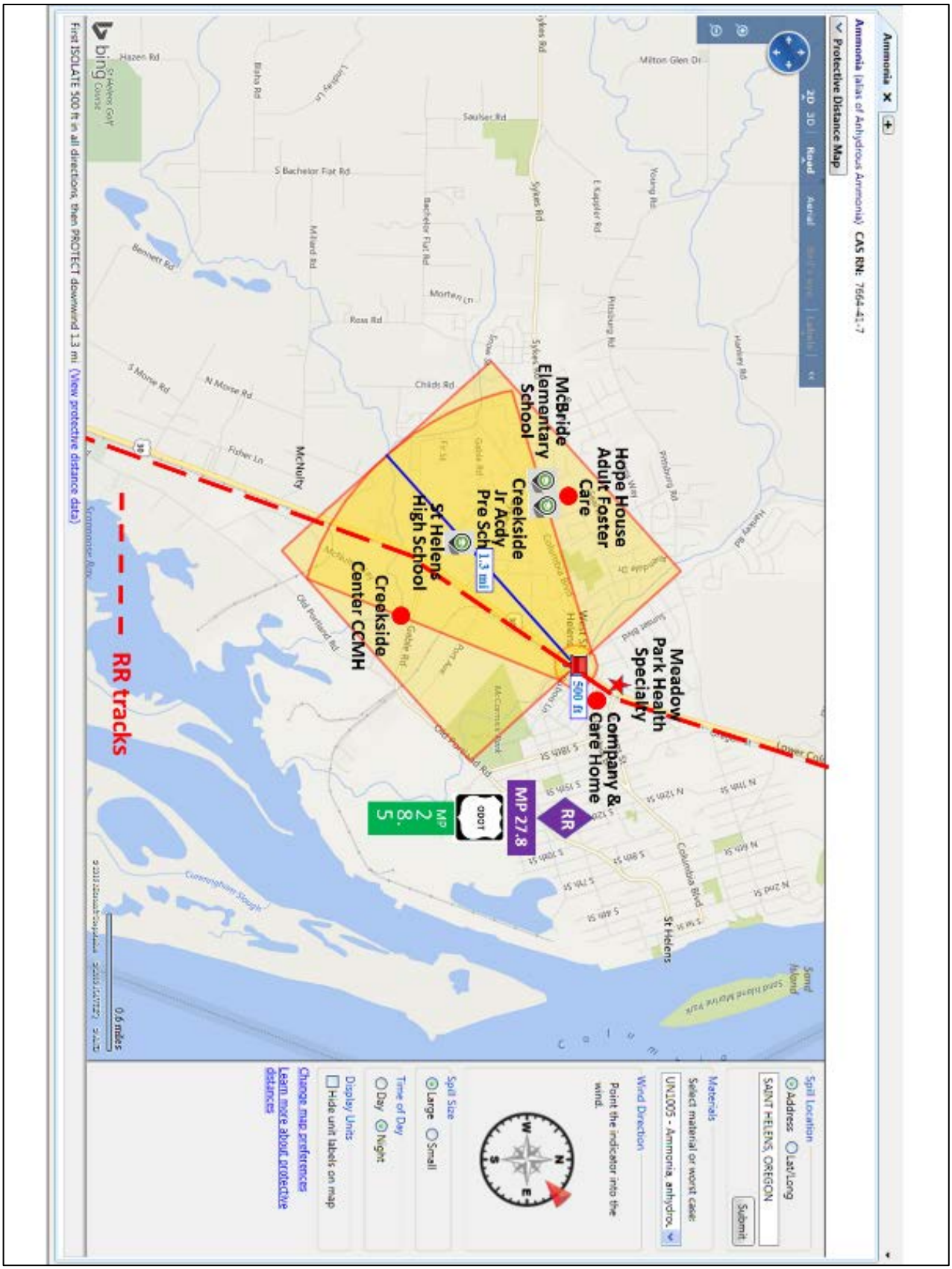
ST HELENS CRUDE OIL/ETHANOL DAY/NIGHT LARGE/SMALL RELEASE NORTH



SAINT HELENS SODIUM CHLORATE DAY LARGE/SMALL RELEASE NORTH

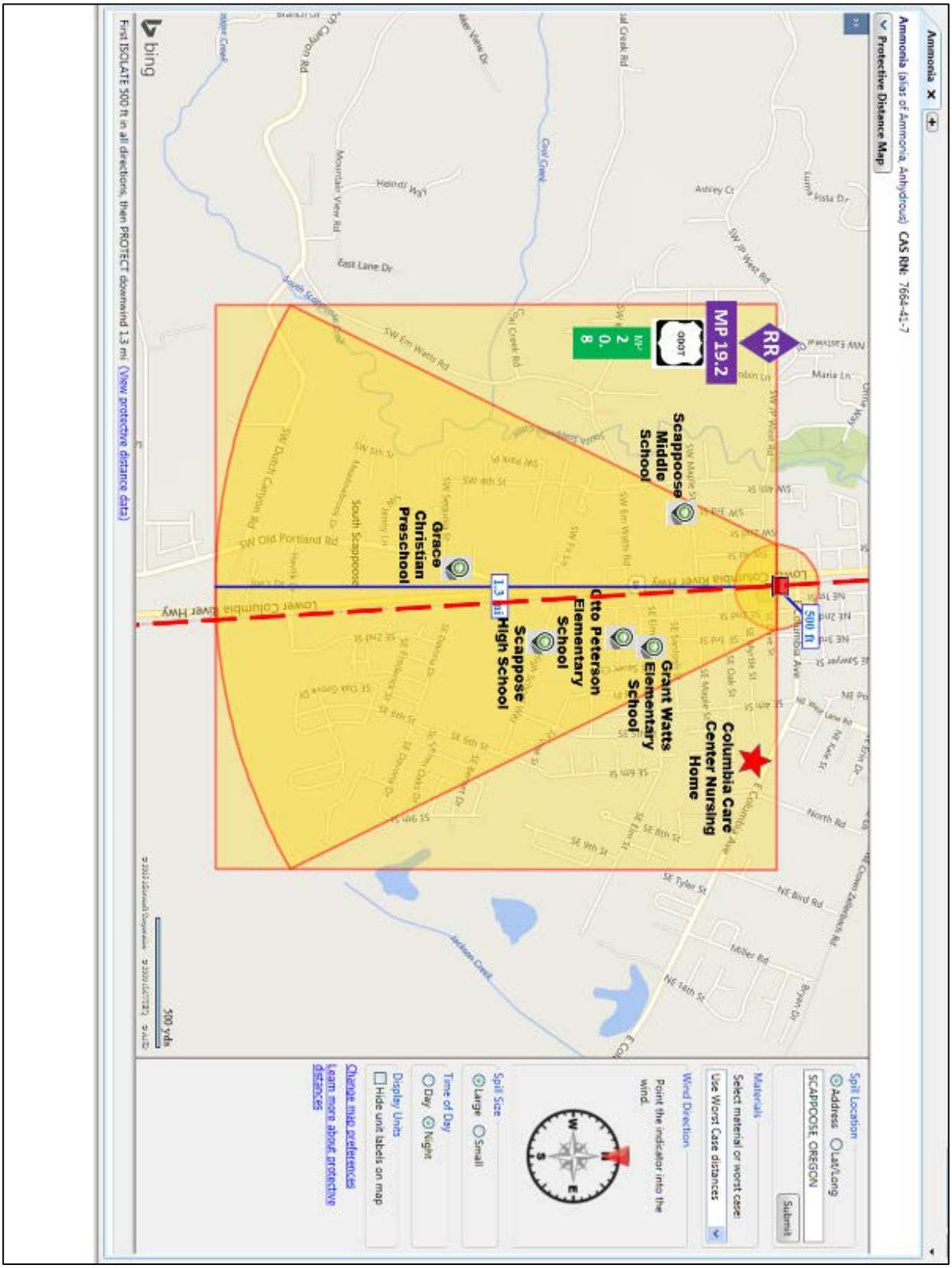
SAINT HELENS ANHYDROUS AMMONIA DAY LARGE RELEASE SOUTH

SAINT HELENS ANHYDROUS AMMONIA NIGHT LARGE RELEASE SOUTH

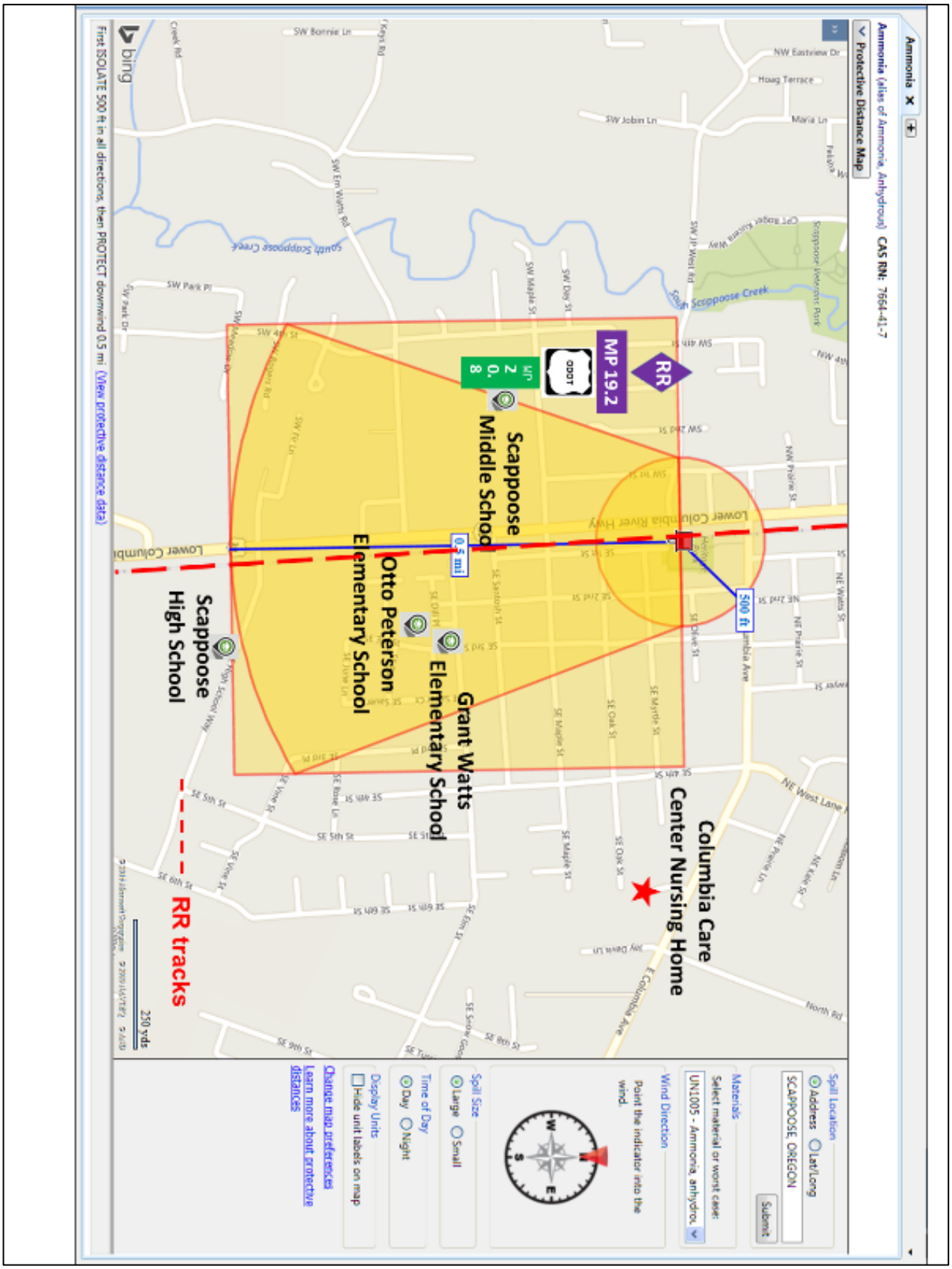


ST HELENS CRUDE OIL/ETHANOL DAY/NIGHT LARGE/SMALL RELEASE SOUTH

SCAPPOOSE ANHYDROUS AMMONIA NIGHT LARGE RELEASE



SCAPPOOSE ANHYDROUS AMMONIA DAY LARGE RELEASE



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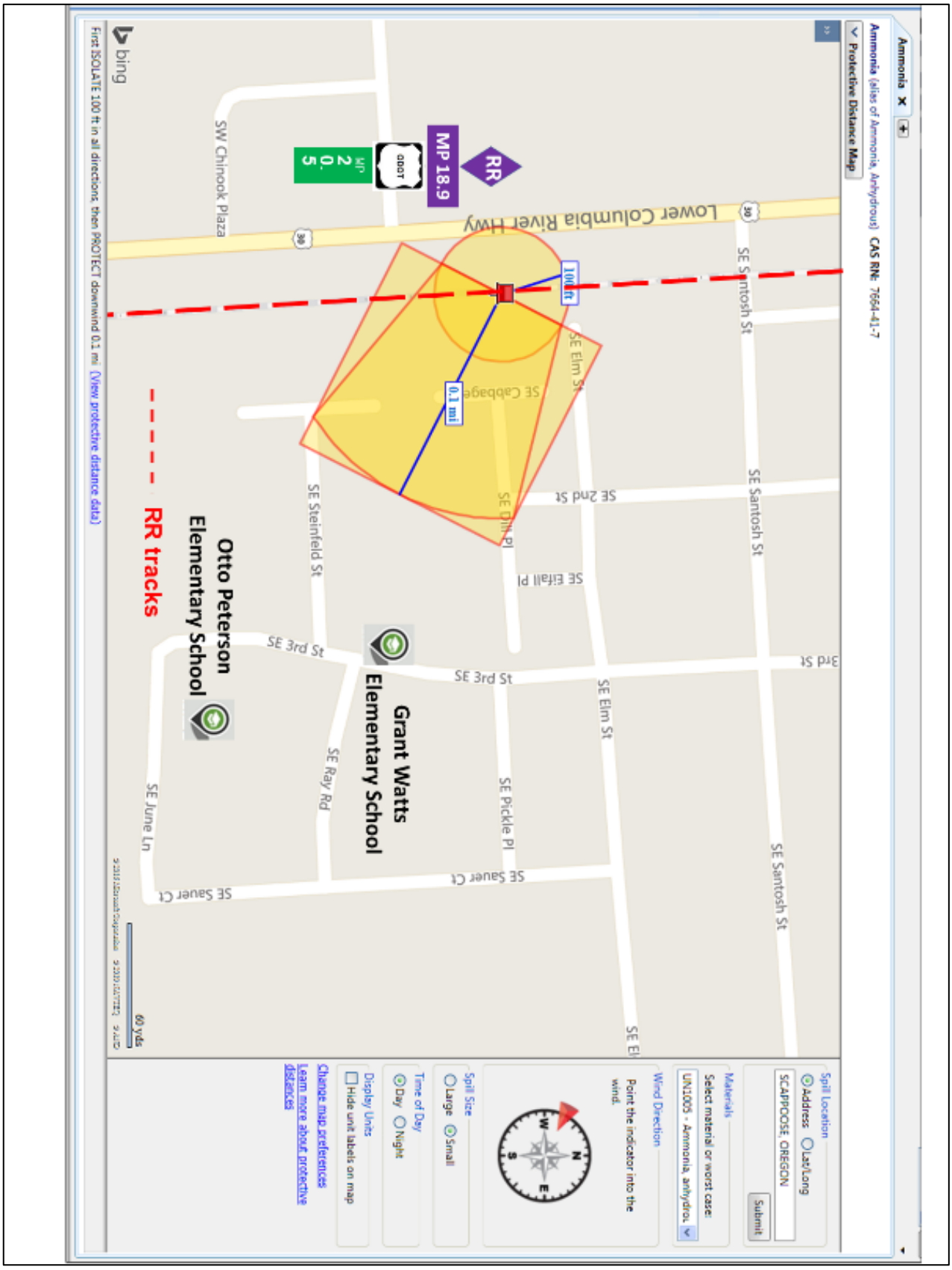

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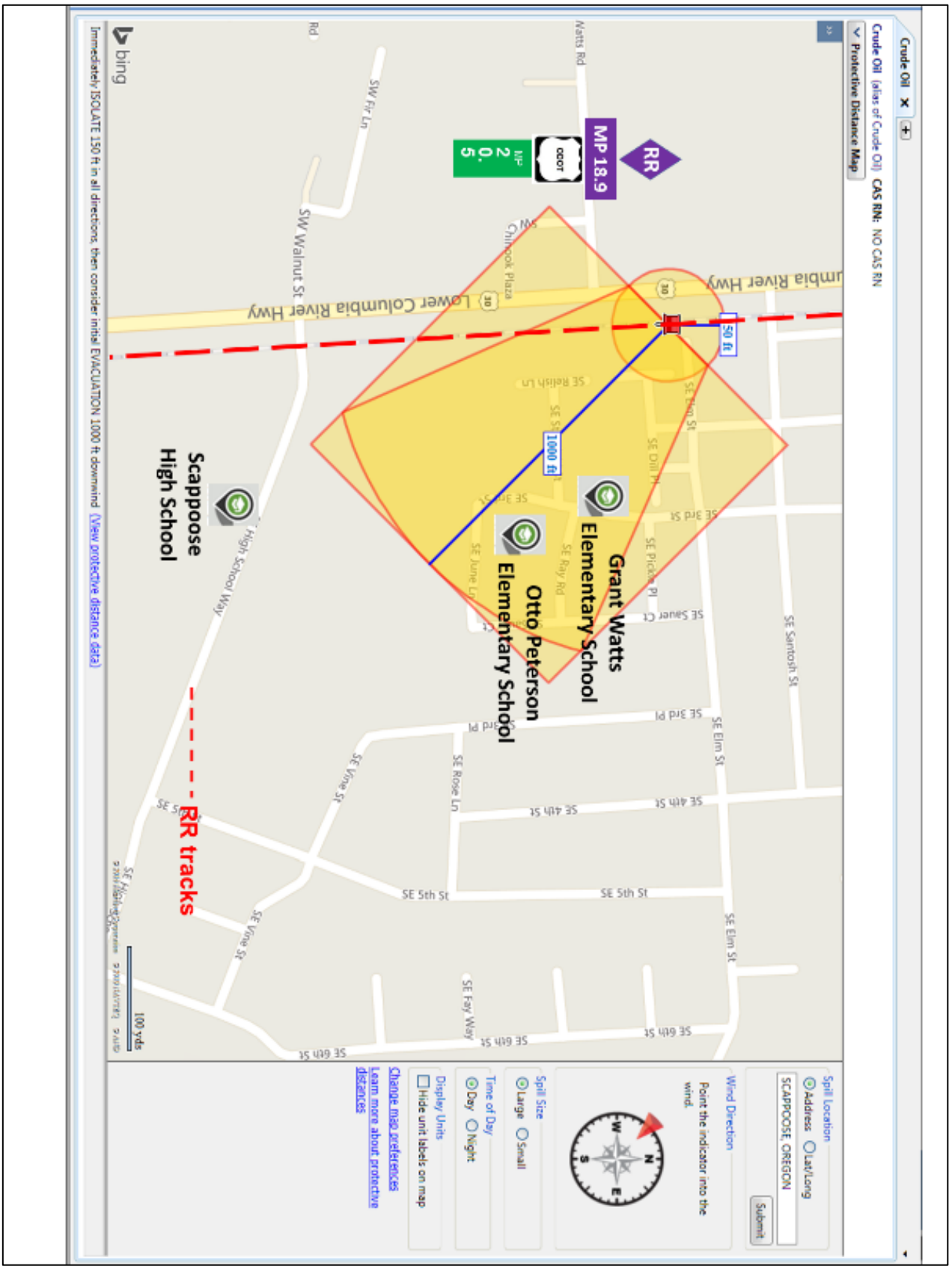

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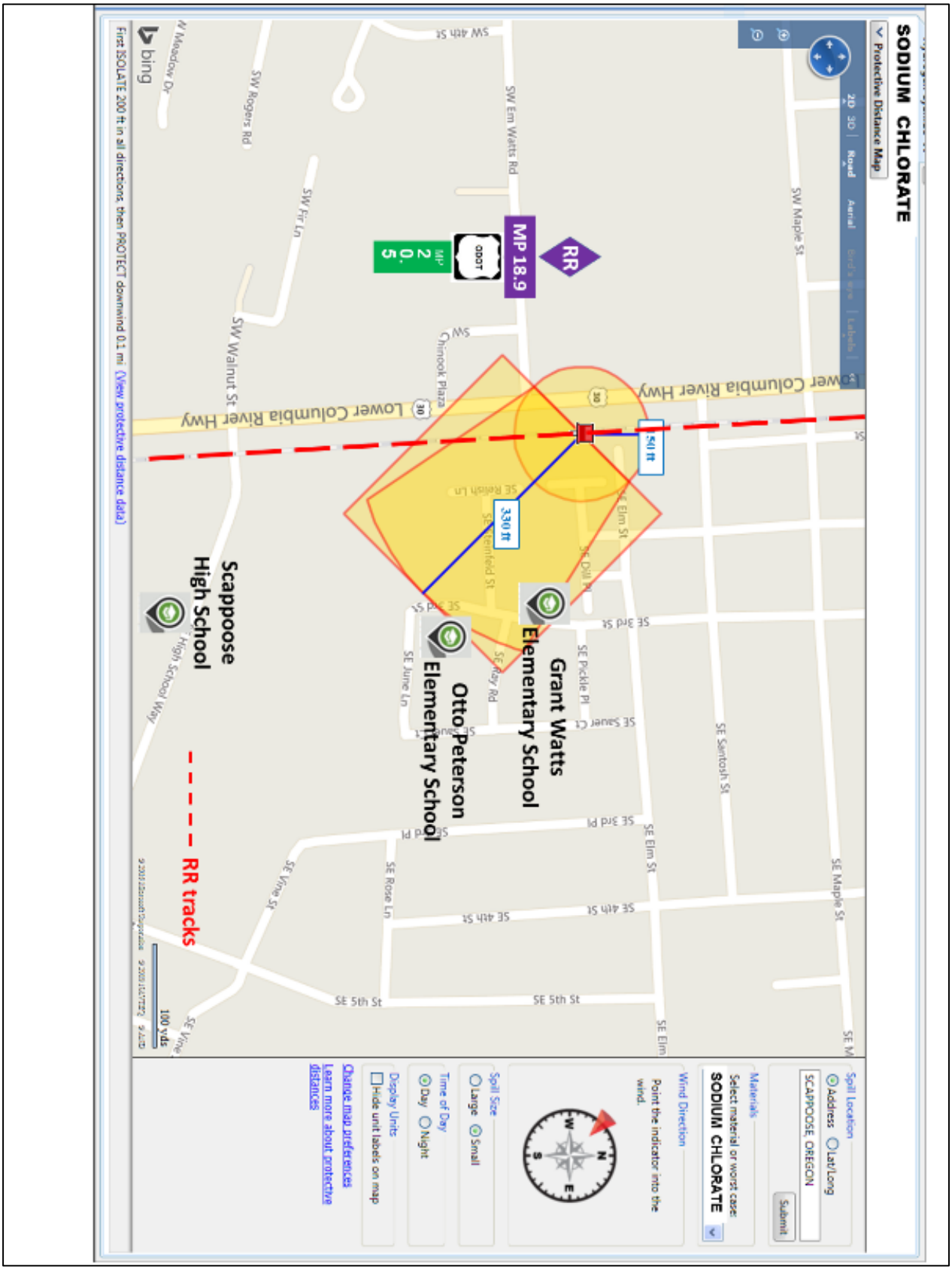

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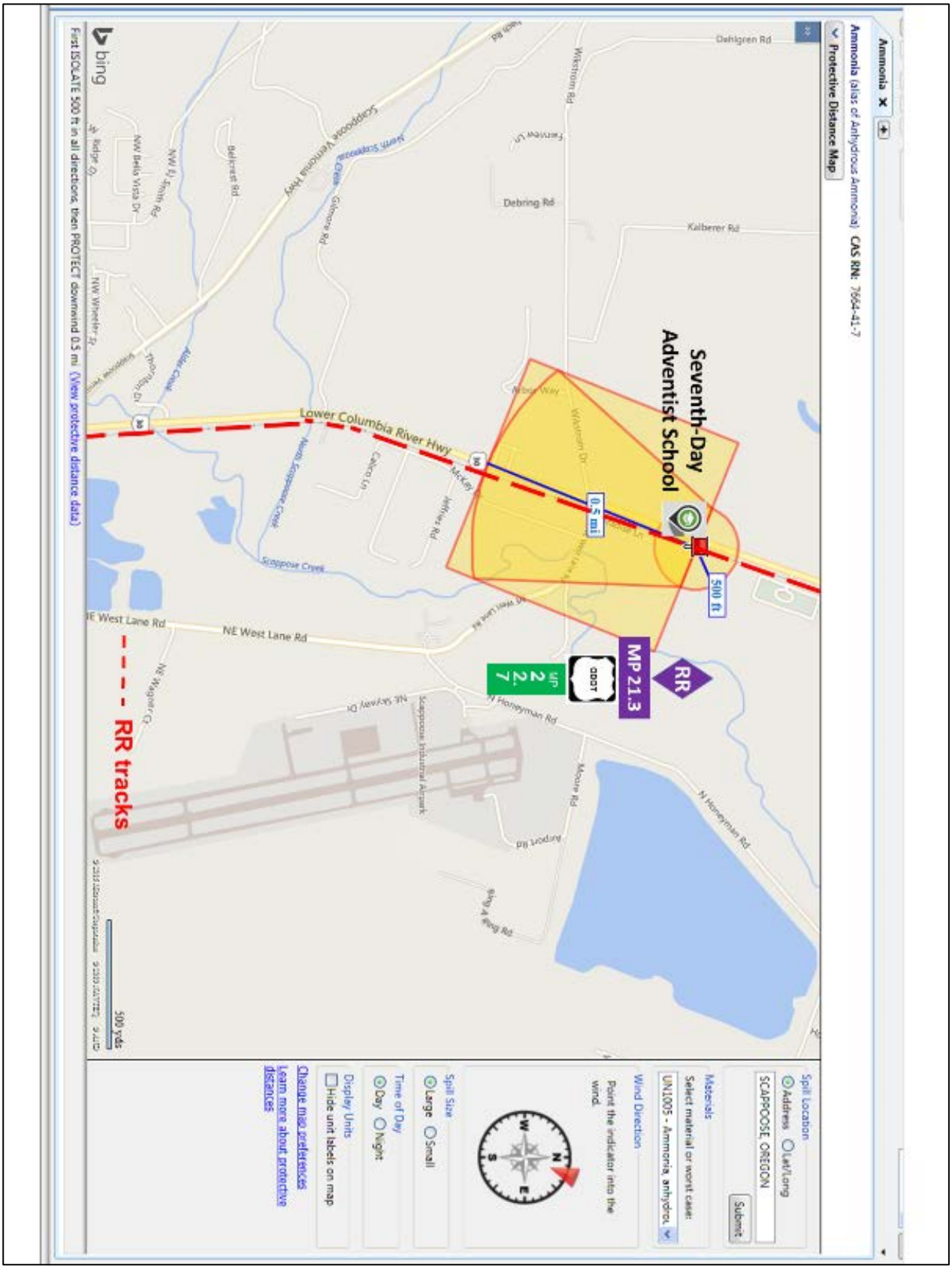

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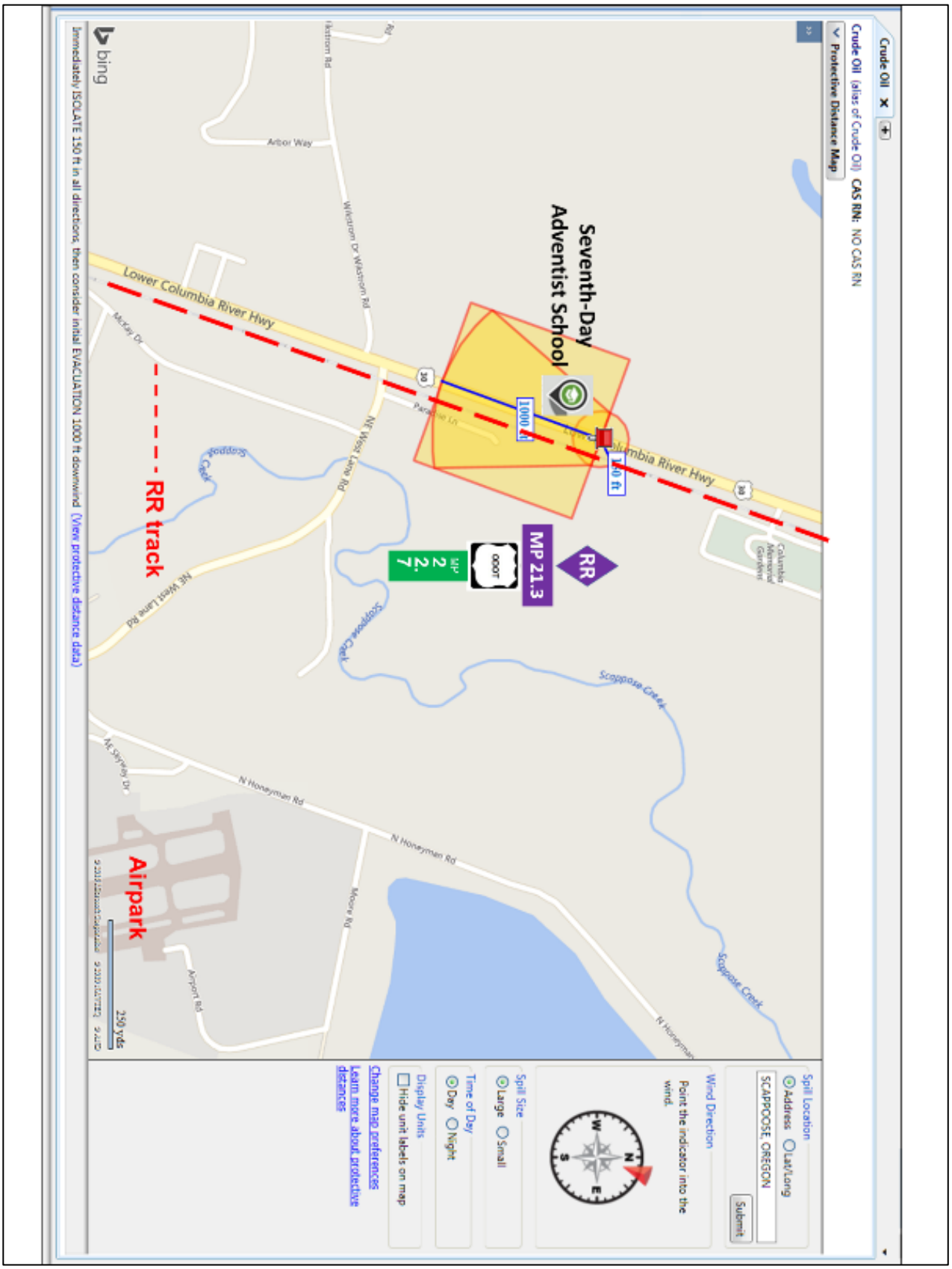

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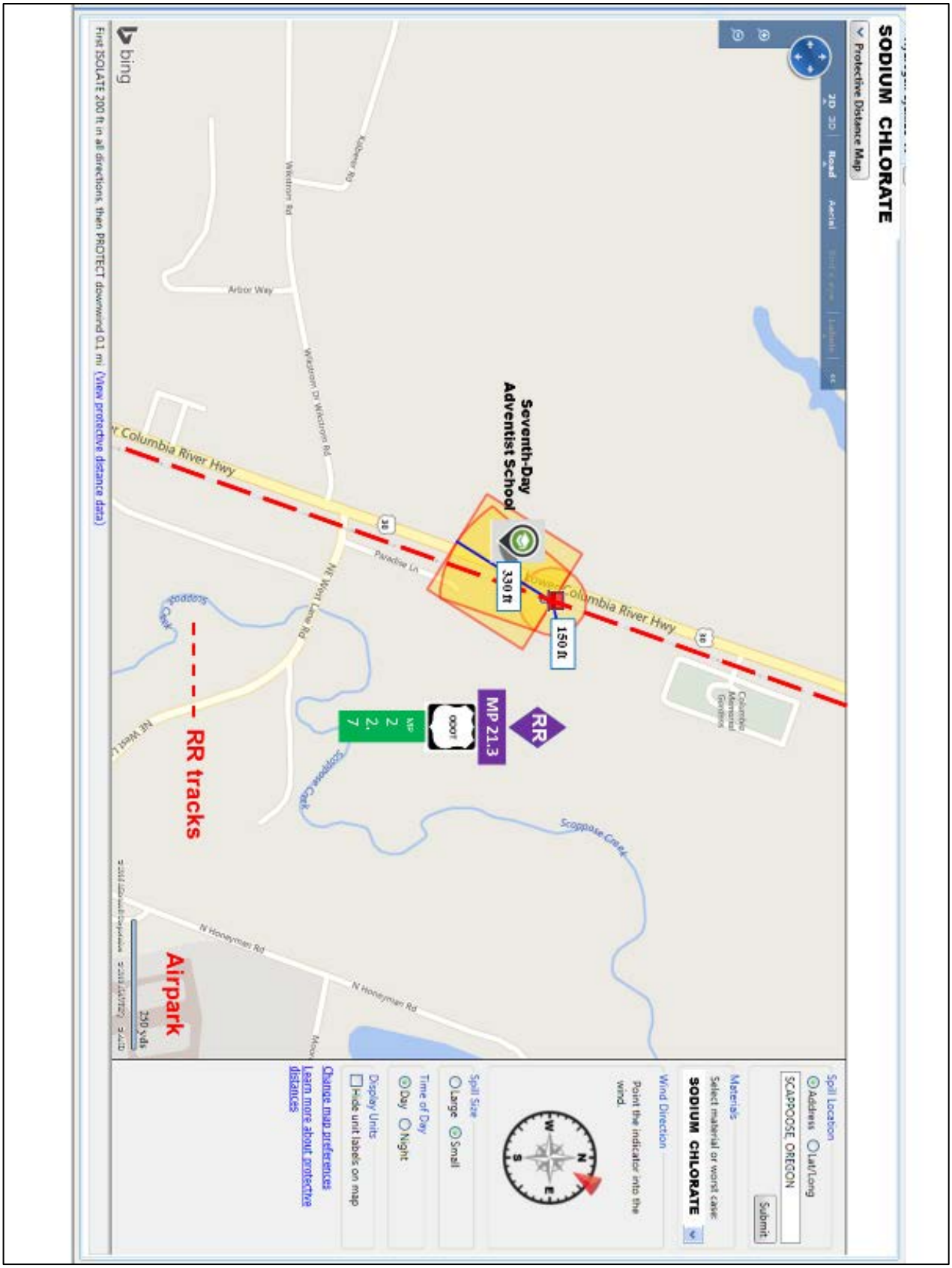
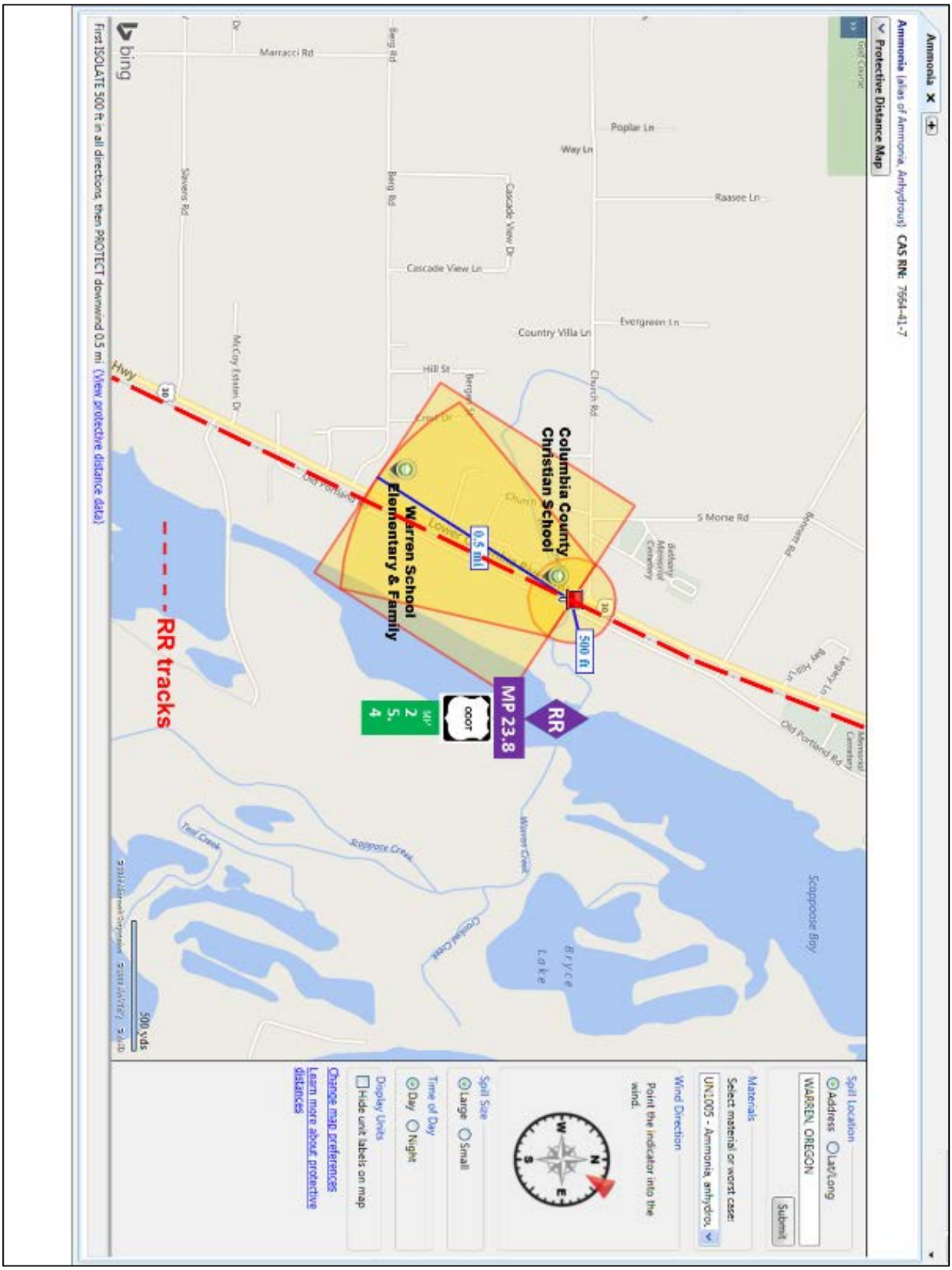


WARREN ANHYDROUS AMMONIA DAY LARGE RELEASE



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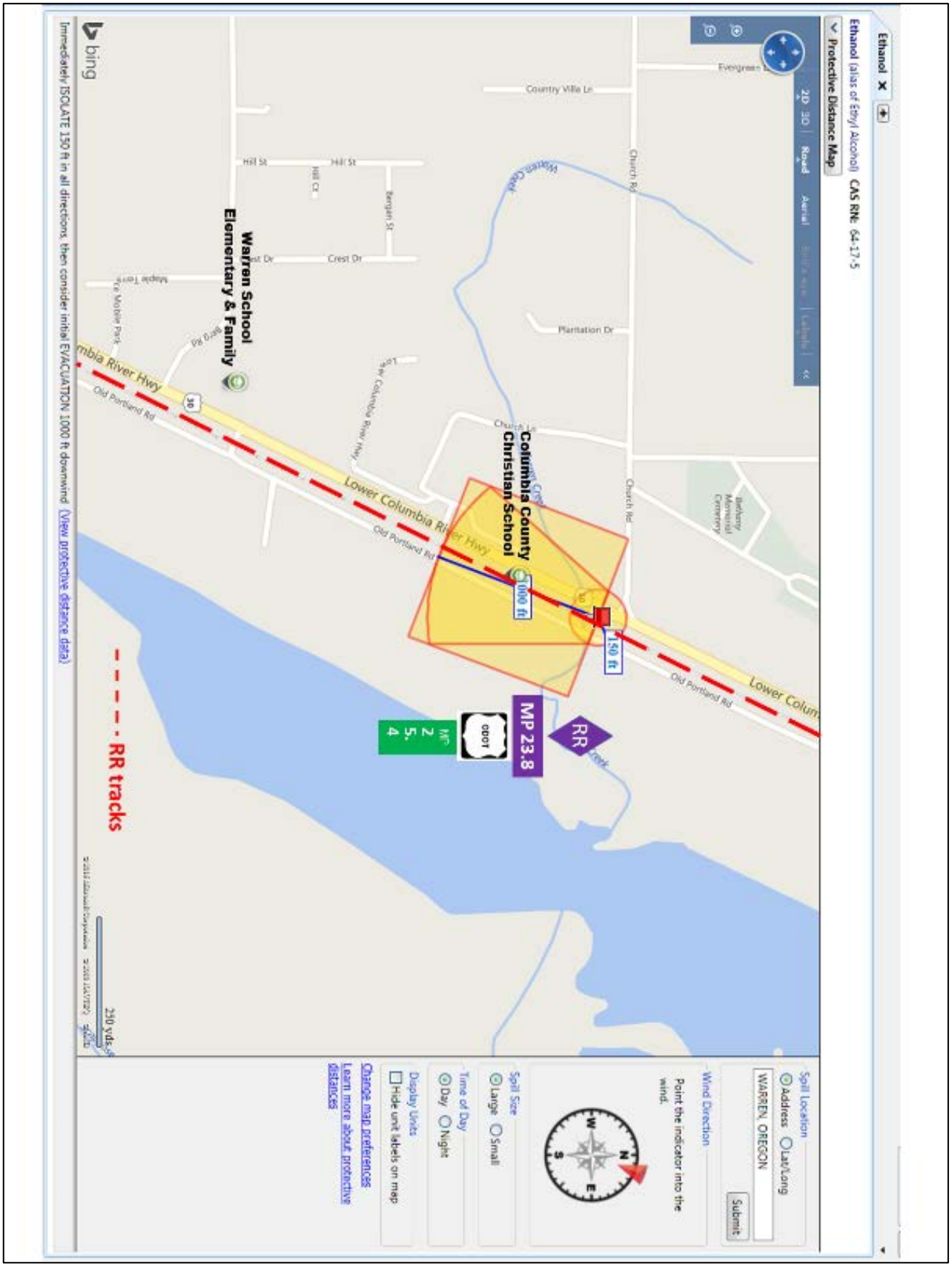

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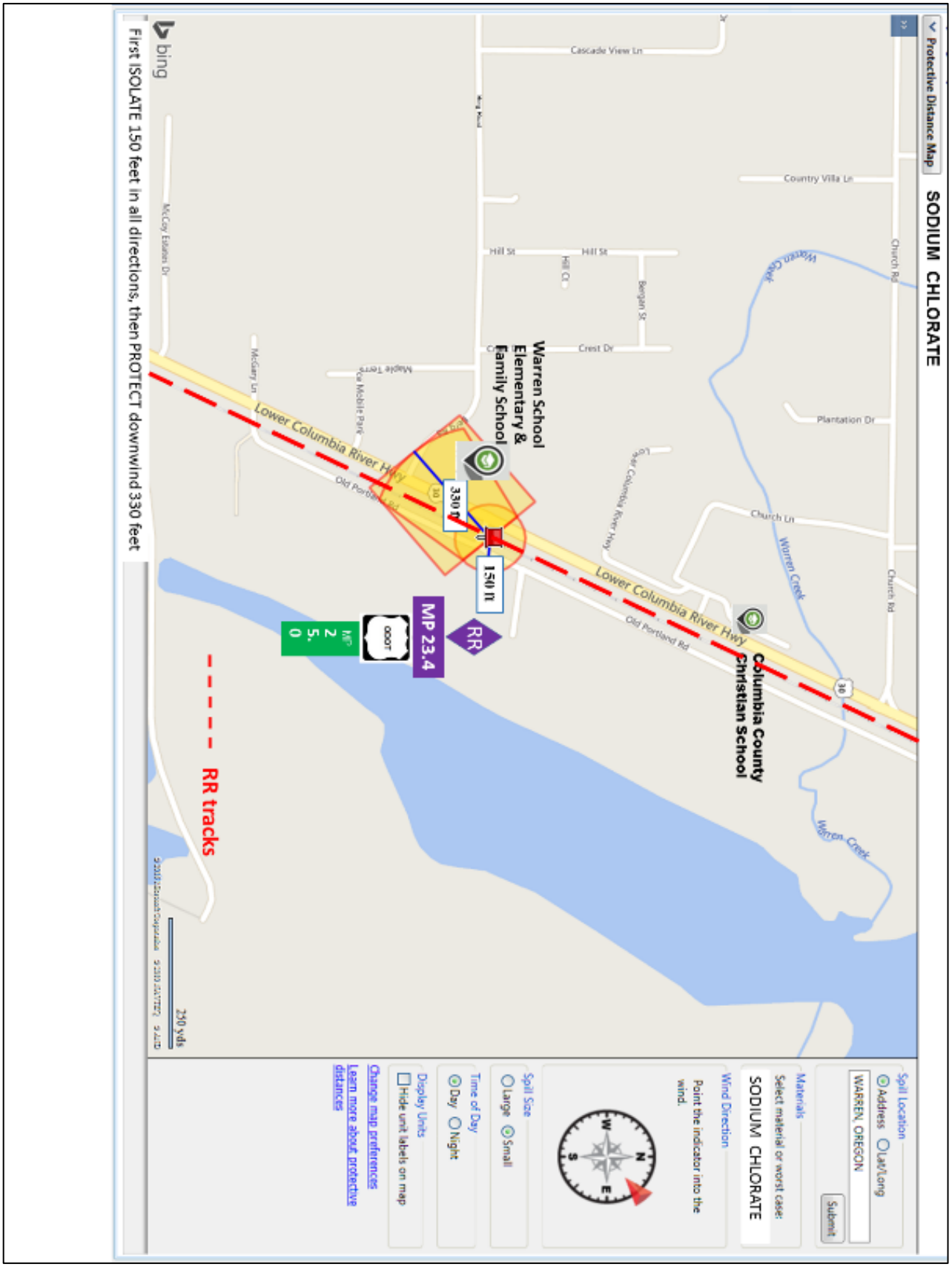

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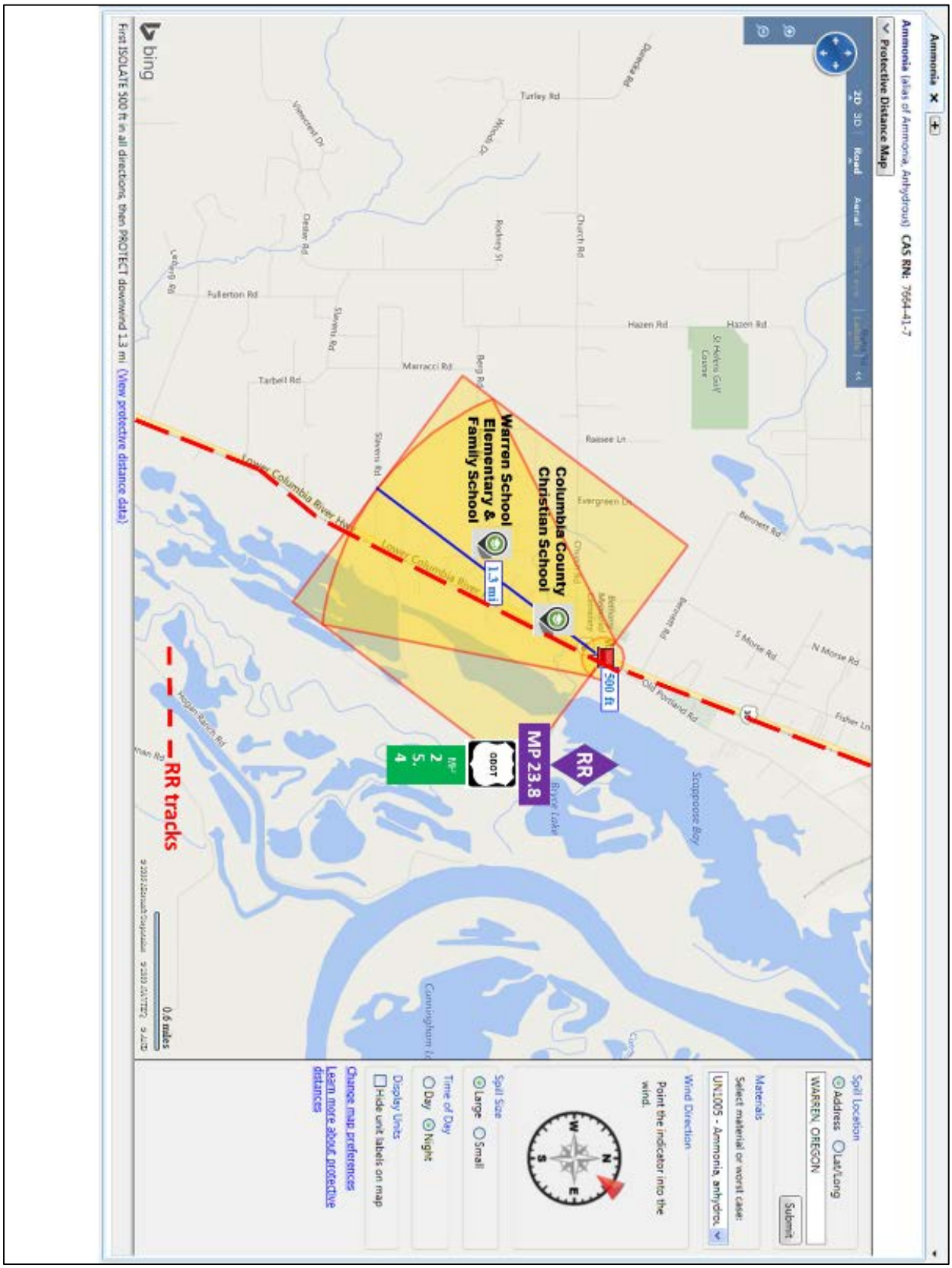
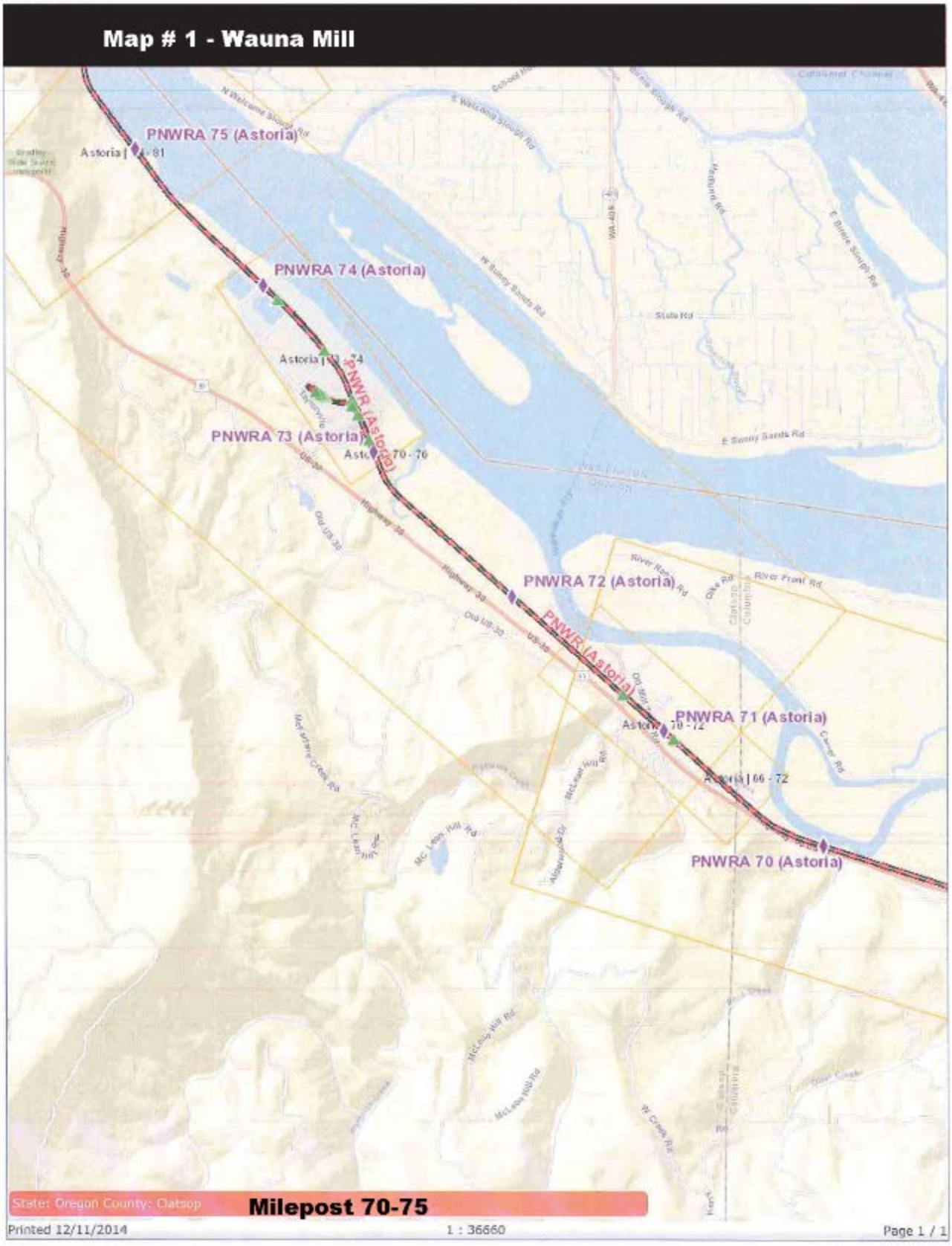


Appendix C

Railroad Milepost Maps

Map 1	**Wauna Mill**	**Milepost 70-75**
Map 2	**West County Border**	**Milepost 68-72**
Map 3	**Wallace Island**	**Milepost 64-68**
Map 4	**Clatskanie**	**Milepost 59-64**
Map 5	**Quincy Mayger Road/Beaver Falls Road**	**Milepost 56-61**
Map 6	**Crims Island**	**Milepost 54-60**
Map 7	**Lord Island**	**Milepost 51-56**
Map 8	**Rainier/Lewis & Clark Bridge**	**Milepost 45-50**
Map 9	**Prescott**	**Milepost 39-45**
Map 10	**Sandy Island**	**Milepost 35-41**
Map 11	**Columbia City**	**Milepost 29-34**
Map 12	**Saint Helen**	**Milepost 24-30**
Map 13	**Warren/Airpark**	**Milepost 20-25**
Map 14	**Scappoose**	**Milepost 17-22**


Map # 1 - Wauna Mill
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PNWRA 74 (Astoria)
PNWRA 73 (Astoria)
PNWRA 72 (Astoria)
PNWRA 71 (Astoria)
PNWRA 70 (Astoria)
PNWR (Astoria)
State: Oregon County: Clatsop
Milepost 70-75
Printed 12/11/2014
1 : 36660
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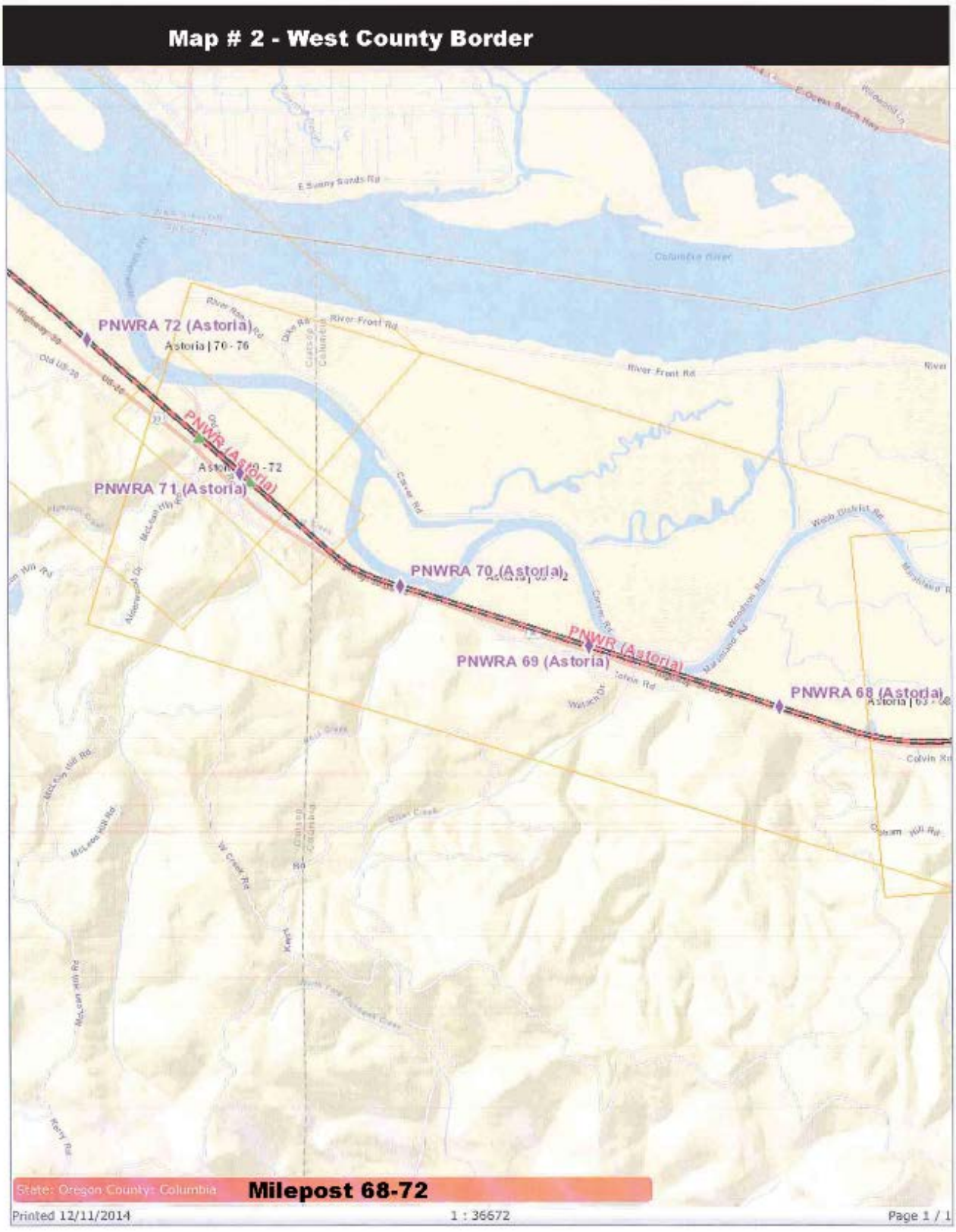
Map # 2 - West County Border
PNWRA 72 (Astoria)
Astoria | 70 - 76
PNWRA 71 (Astoria)
PNWRA 70 (Astoria)
PNWRA 69 (Astoria)
PNWRA 68 (Astoria)
River Front Rd
Columbia River
State: Oregon County: Columbia
Milepost 68-72
Printed 12/11/2014
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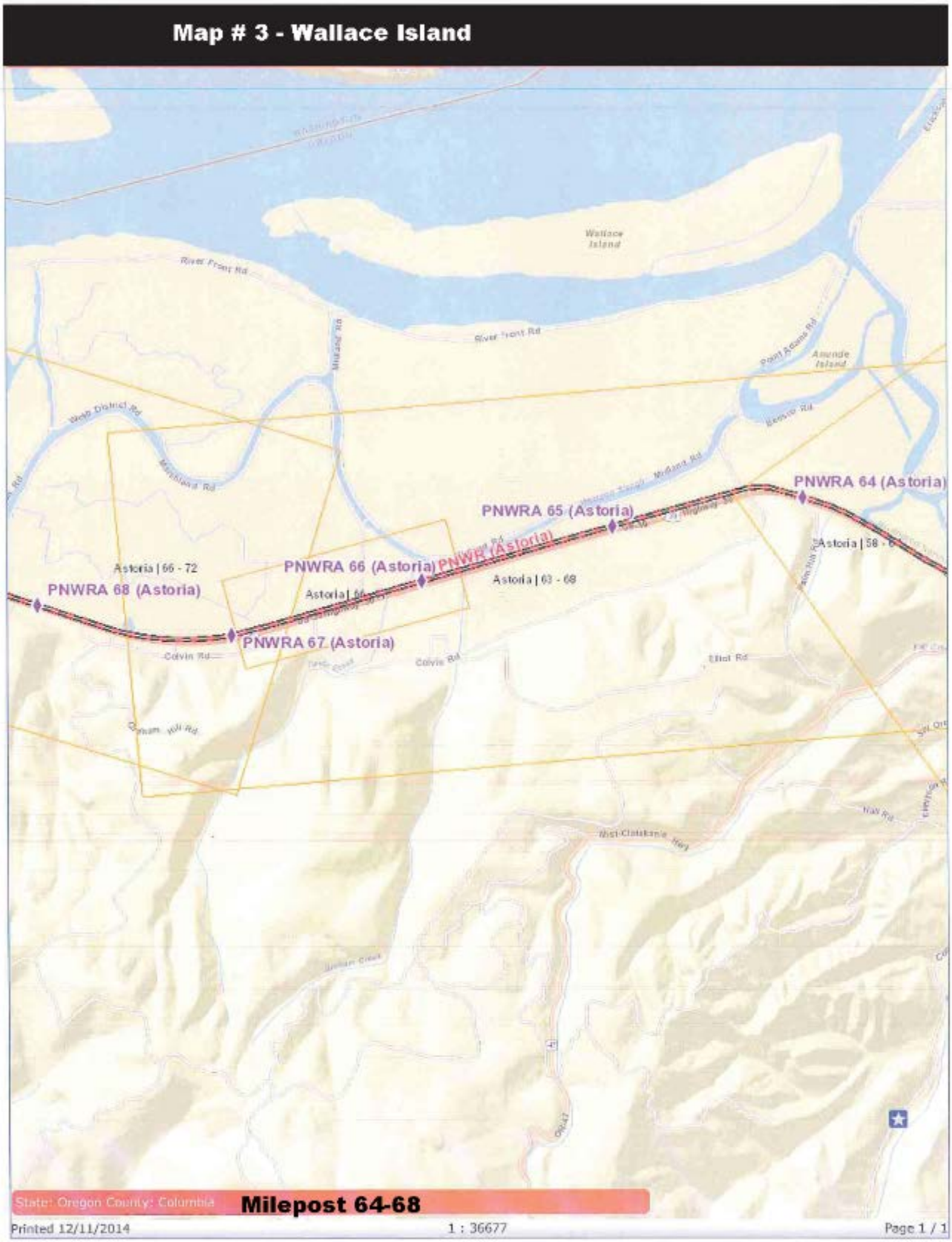
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Wallace Island
River Front Rd
Amende Island
PNWRA 64 (Astoria)
PNWRA 65 (Astoria)
PNWRA 66 (Astoria)
PNWRA 67 (Astoria)
PNWRA 68 (Astoria)
Astoria | 66 - 72
Astoria | 63 - 68
Colvin Rd
Elliot Rd
State: Oregon County: Columbia
Milepost 64-68
Printed 12/11/2014
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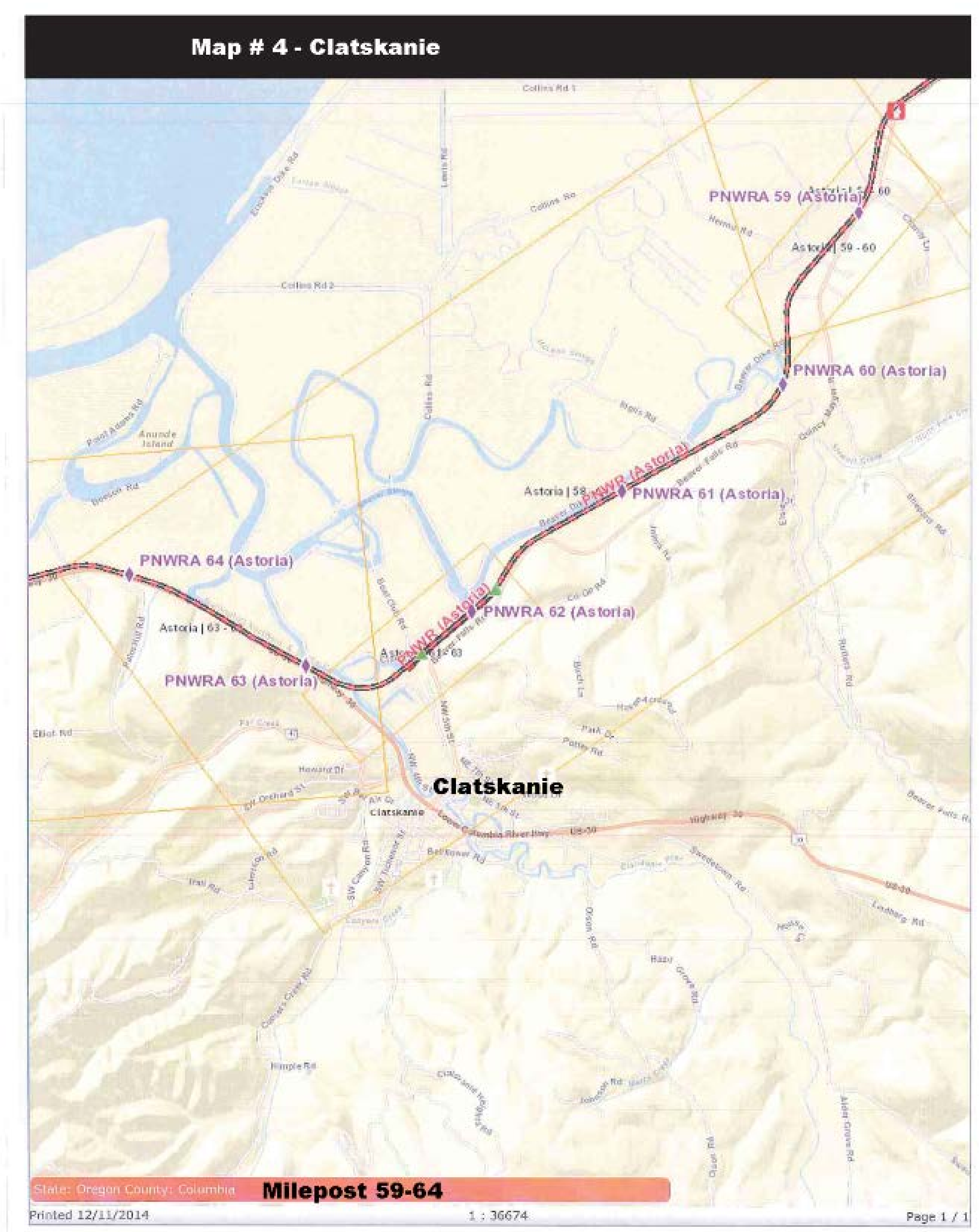
Map # 4 - Clatskanie
PNWRA 59 (Astoria)
Astoria | 59 - 60
PNWRA 60 (Astoria)
PNWR (Astoria)
Astoria | 58
PNWRA 61 (Astoria)
PNWRA 64 (Astoria)
PNWRA 62 (Astoria)
Astoria | 63 -
PNWRA 63 (Astoria)
Clatskanie
State: Oregon County: Columbia
Milepost 59-64
Printed 12/11/2014
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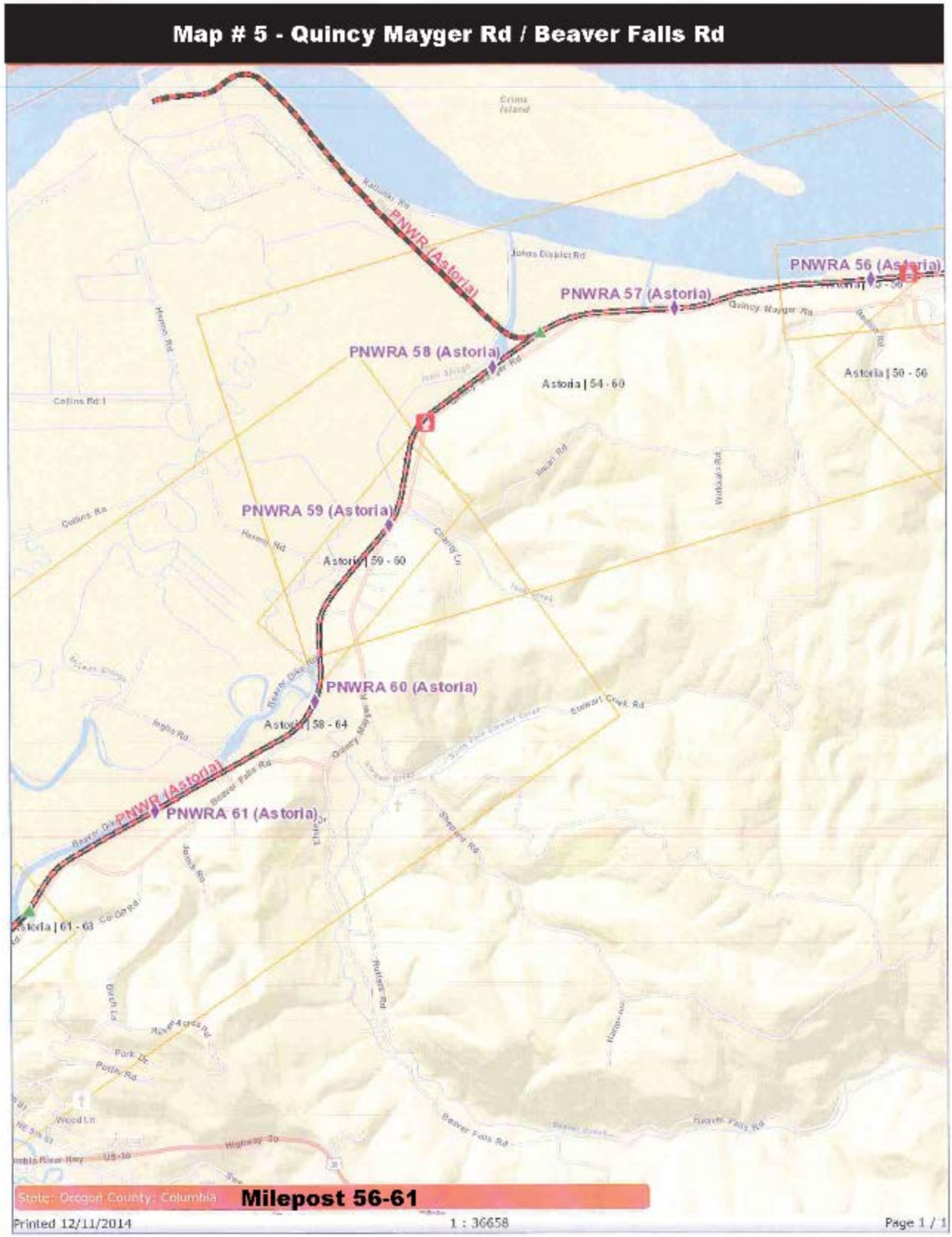
Map # 5 - Quincy Mayger Rd / Beaver Falls Rd
PNWR (Astoria)
PNWRA 56 (Astoria)
PNWRA 57 (Astoria)
PNWRA 58 (Astoria)
Astoria | 54 - 60
Astoria | 50 - 56
PNWRA 59 (Astoria)
Astoria | 59 - 60
PNWRA 60 (Astoria)
Astoria | 58 - 64
PNWR (Astoria)
PNWRA 61 (Astoria)
Astoria | 61 - 63
State: Oregon County: Columbia
Milepost 56-61
Printed 12/11/2014
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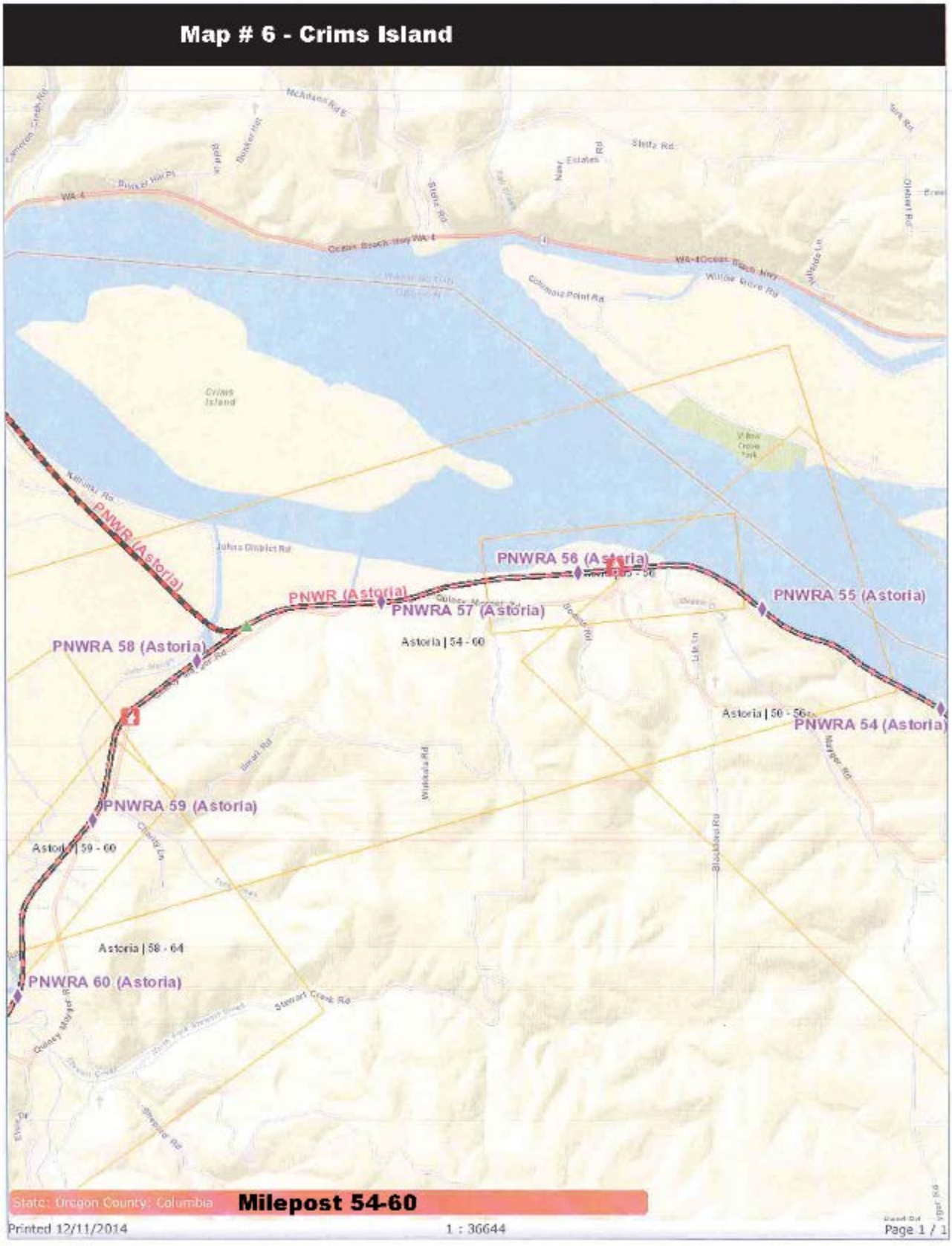
Map # 6 - Crims Island
PNWR (Astoria)
PNWR (Astoria)
PNWRA 56 (Astoria)
PNWRA 57 (Astoria)
PNWRA 55 (Astoria)
PNWRA 58 (Astoria)
PNWRA 54 (Astoria)
PNWRA 59 (Astoria)
PNWRA 60 (Astoria)
Astoria | 54 - 60
Astoria | 59 - 60
Astoria | 58 - 64
Crims Island
Ocean Beach Hwy WA-4
Columbia Point Rd
Stewart Crek Rd
State: Oregon County: Columbia
Milepost 54-60
Printed 12/11/2014
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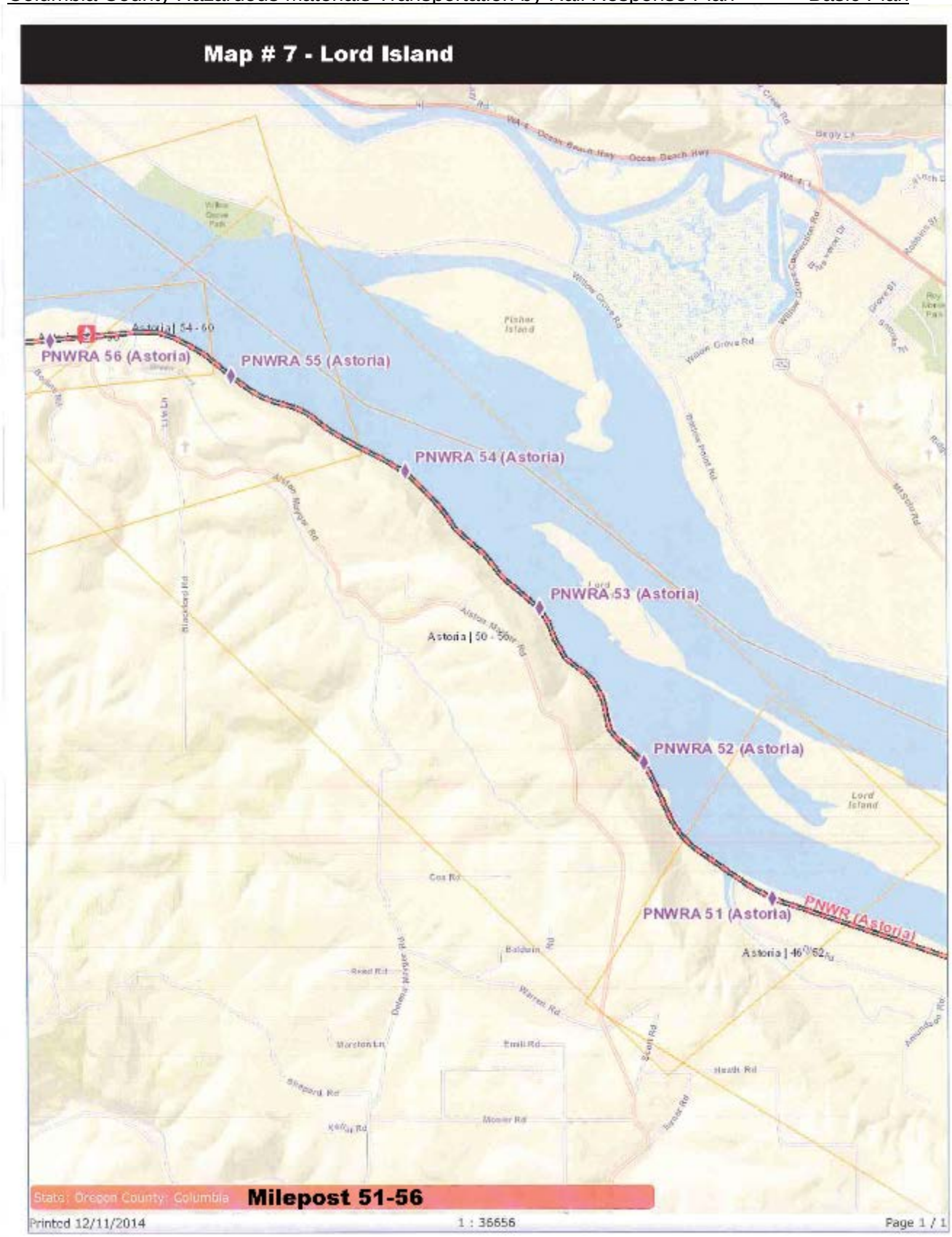
Map # 7 - Lord Island
PNWRA 56 (Astoria)
PNWRA 55 (Astoria)
PNWRA 54 (Astoria)
PNWRA 53 (Astoria)
PNWRA 52 (Astoria)
PNWRA 51 (Astoria)
Milepost 51-56
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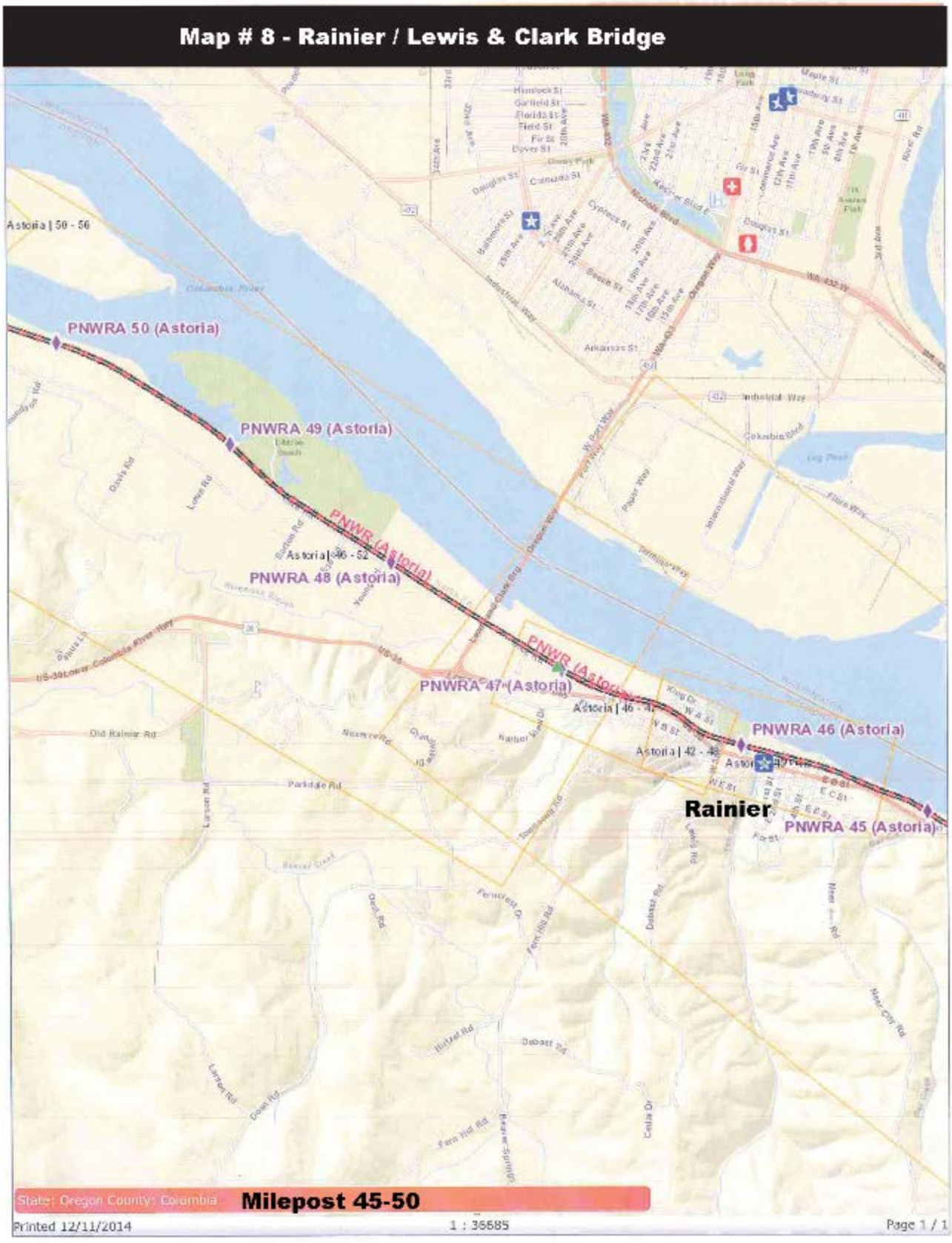
Map # 8 - Rainier / Lewis & Clark Bridge
PNWRA 50 (Astoria)
PNWRA 49 (Astoria)
PNWRA 48 (Astoria)
PNWRA 47 (Astoria)
PNWRA 46 (Astoria)
PNWRA 45 (Astoria)
Rainier
Astoria | 50 - 56
Astoria | 46 - 52
Astoria | 46 - 47
Astoria | 42 - 43
Columbia River
Lewis and Clark Bridge
US-30 Lower Columbia River Hwy
Old Rainier Rd
Parkdale Rd
Industrial Way
Oregon Way
Port Way
Columbia Blvd
Log Pond
Nicolai Slough
Rainier Slough
Dairy Creek
Fern Hill Rd
Dibasit Rd
Hillcrest Rd
Larson Rd
Dow Rd
Deer Island Rd
Maple St
Hemlock St
Garfield St
Florida St
Field St
Fir St
Dover St
Douglas St
Colorado St
Cypress St
Beech St
Alabama St
Arkansas St
Commerce Ave
Nicolai Blvd
Rainier Blvd E
Forest St
State: Oregon County: Columbia
Milepost 45-50
Printed 12/11/2014
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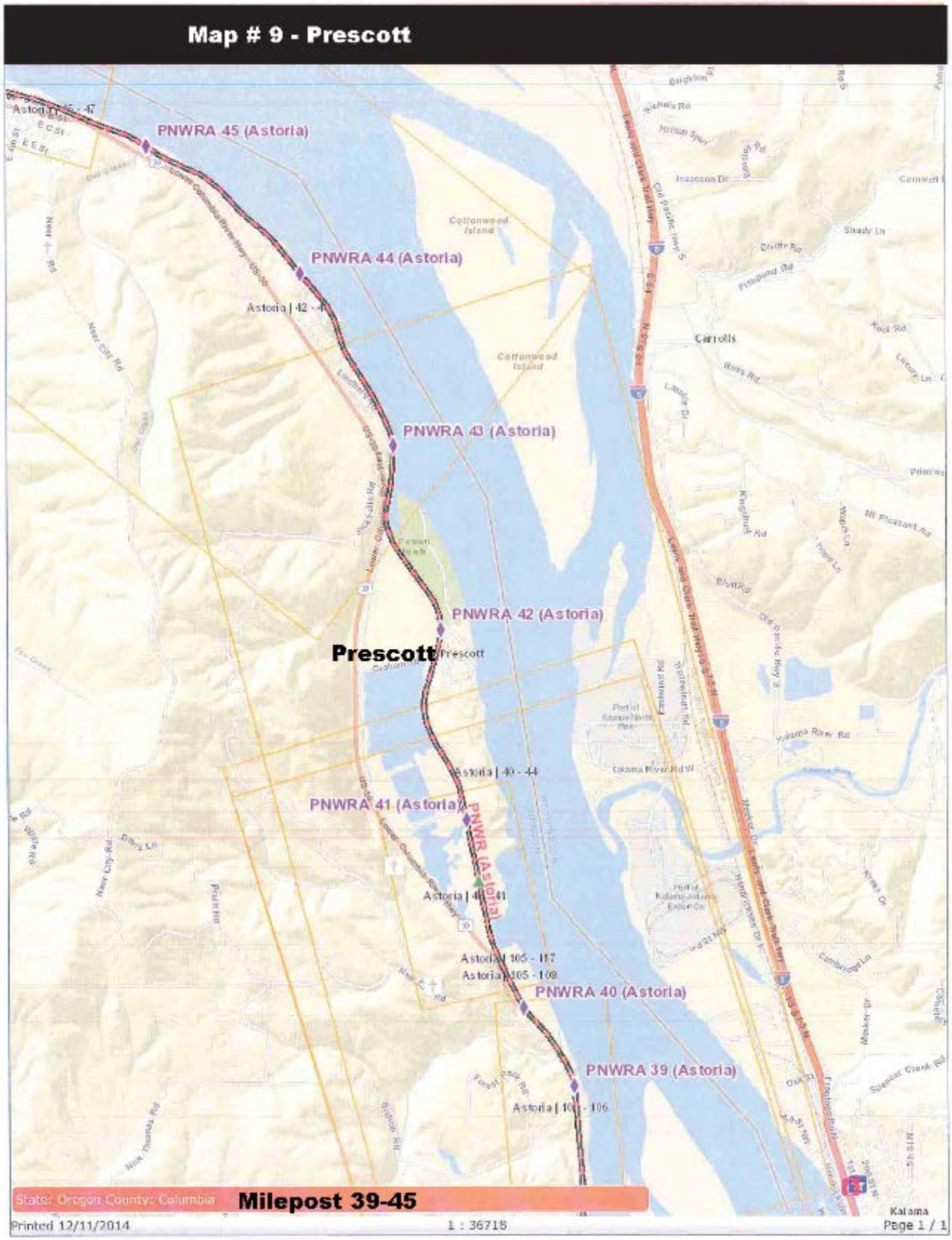
Page 1 / 1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PNWRA 45 (Astoria)
PNWRA 44 (Astoria)
PNWRA 43 (Astoria)
PNWRA 42 (Astoria)
Prescott
PNWRA 41 (Astoria)
PNWRA 40 (Astoria)
PNWRA 39 (Astoria)
Carrolls
State: Oregon County: Columbia
Milepost 39-45
Printed 12/11/2014
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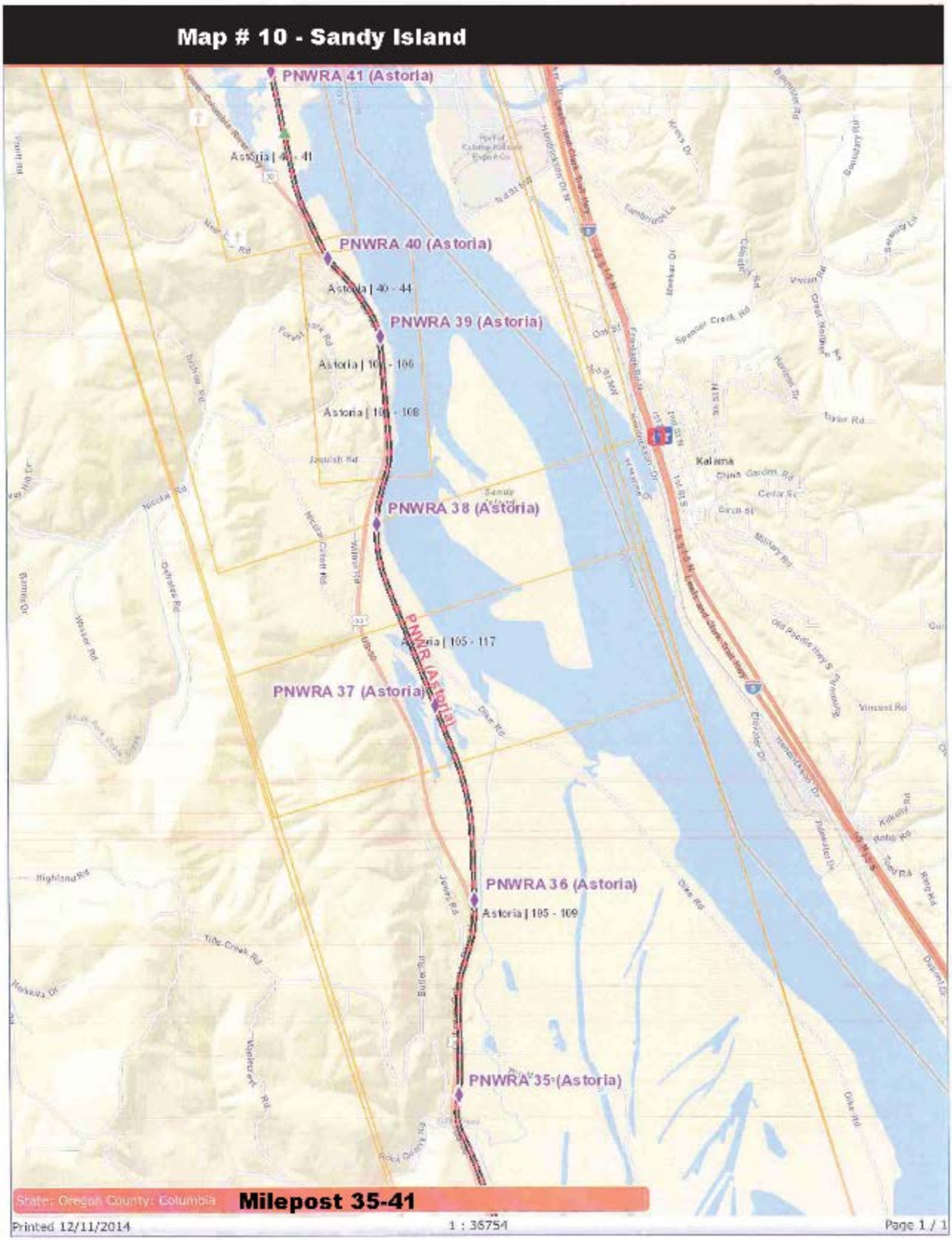
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PNWRA 41 (Astoria)
PNWRA 40 (Astoria)
PNWRA 39 (Astoria)
PNWRA 38 (Astoria)
PNWRA 37 (Astoria)
PNWRA 36 (Astoria)
PNWRA 35 (Astoria)
Kalama
State: Oregon County: Columbia
Milepost 35-41
Printed 12/11/2014
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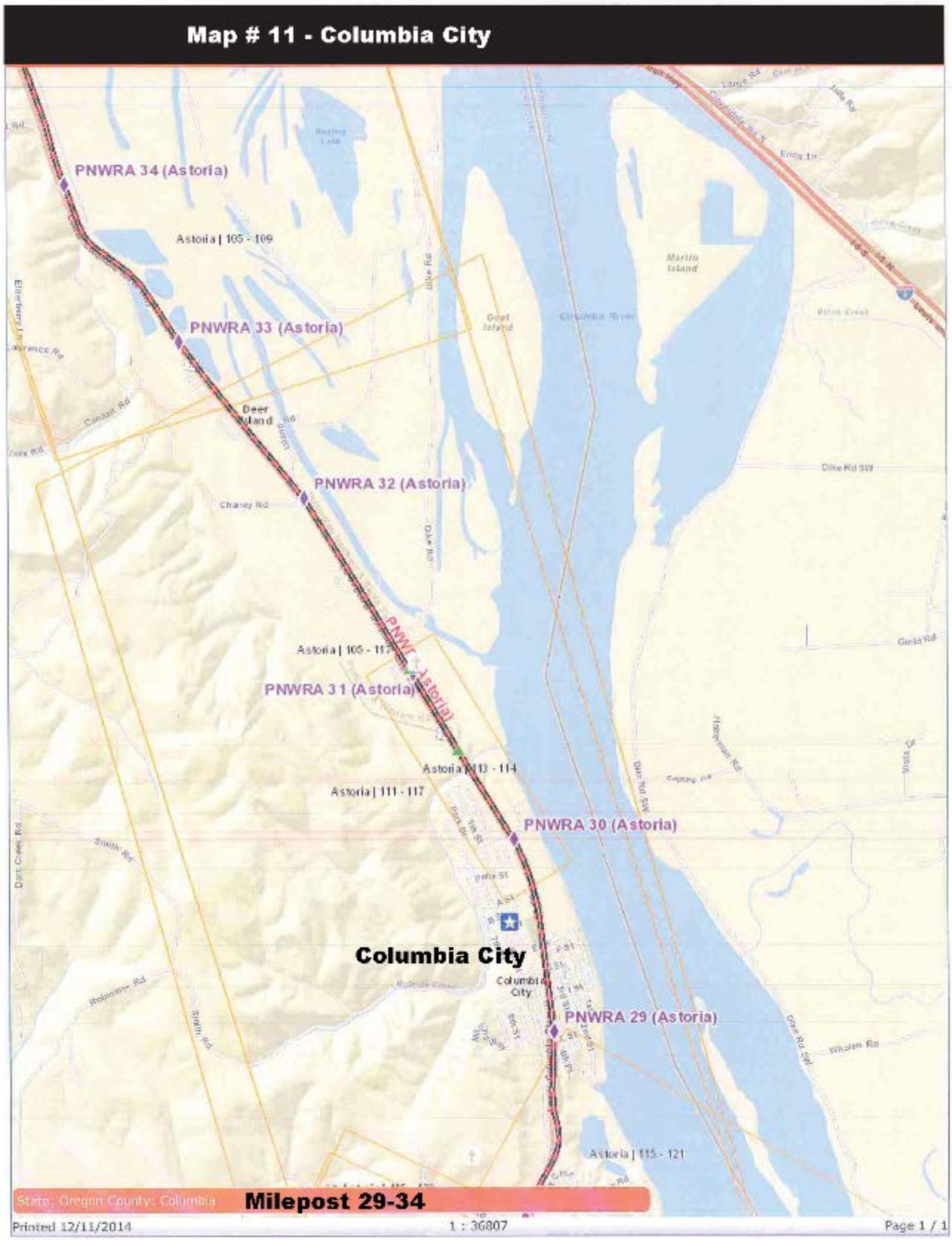
Map # 11 - Columbia City
PNWRA 34 (Astoria)
Astoria | 105 - 109
PNWRA 33 (Astoria)
Deer Island
PNWRA 32 (Astoria)
Astoria | 105 - 117
PNWRA 31 (Astoria)
Astoria | 113 - 114
Astoria | 111 - 117
PNWRA 30 (Astoria)
Columbia City
PNWRA 29 (Astoria)
Astoria | 115 - 121
State: Oregon County: Columbia
Milepost 29-34
Printed 12/11/2014
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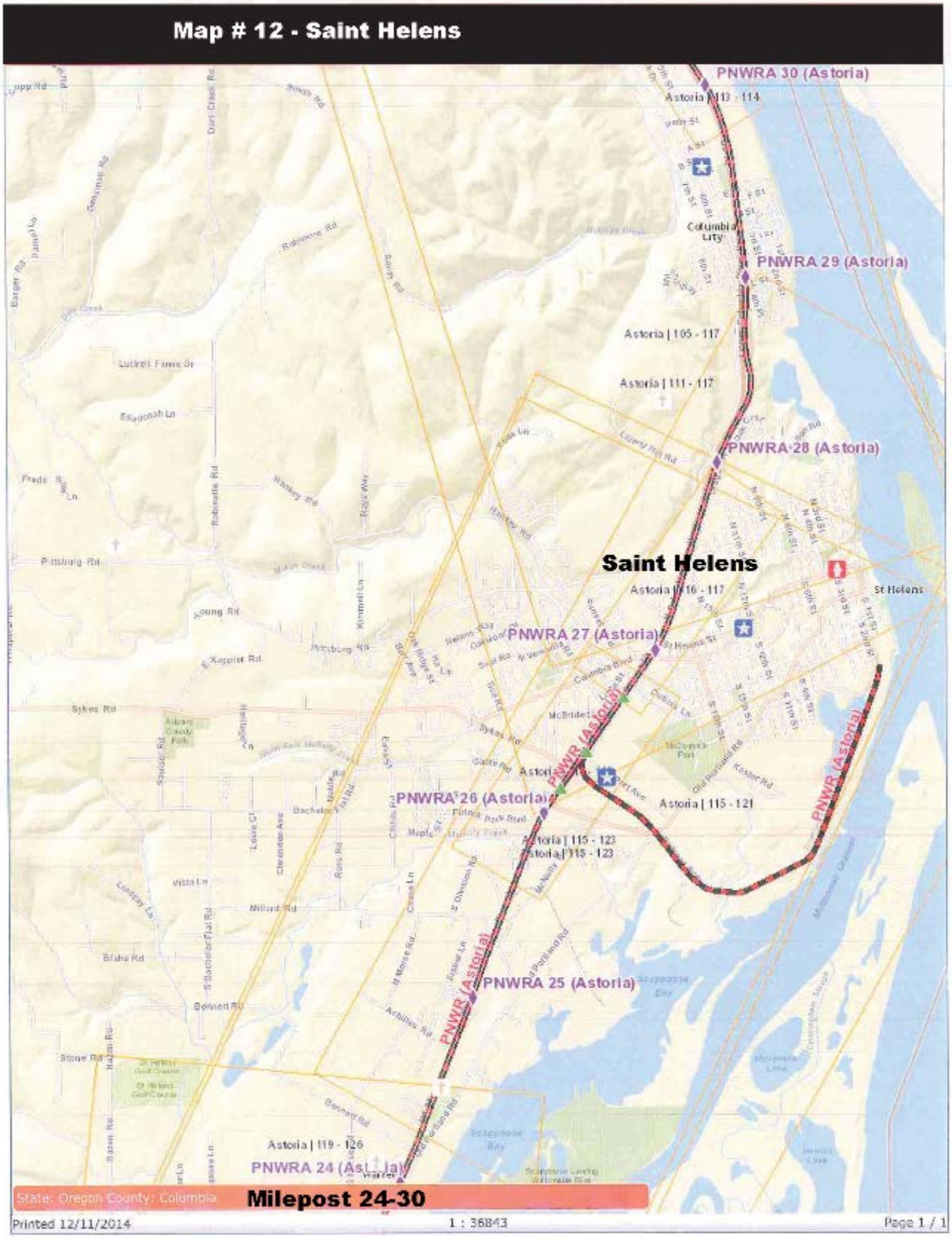
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PNWRA 30 (Astoria)
Astoria | 113 - 114
PNWRA 29 (Astoria)
Astoria | 105 - 117
Astoria | 111 - 117
PNWRA 28 (Astoria)
Saint Helens
Astoria | 116 - 117
PNWRA 27 (Astoria)
PNWR (Astoria)
PNWRA 26 (Astoria)
Astoria | 115 - 121
Astoria | 115 - 123
PNWR (Astoria)
PNWRA 25 (Astoria)
PNWR (Astoria)
Astoria | 119 - 126
PNWRA 24 (Astoria)
State: Oregon County: Columbia
Milepost 24-30
Printed 12/11/2014
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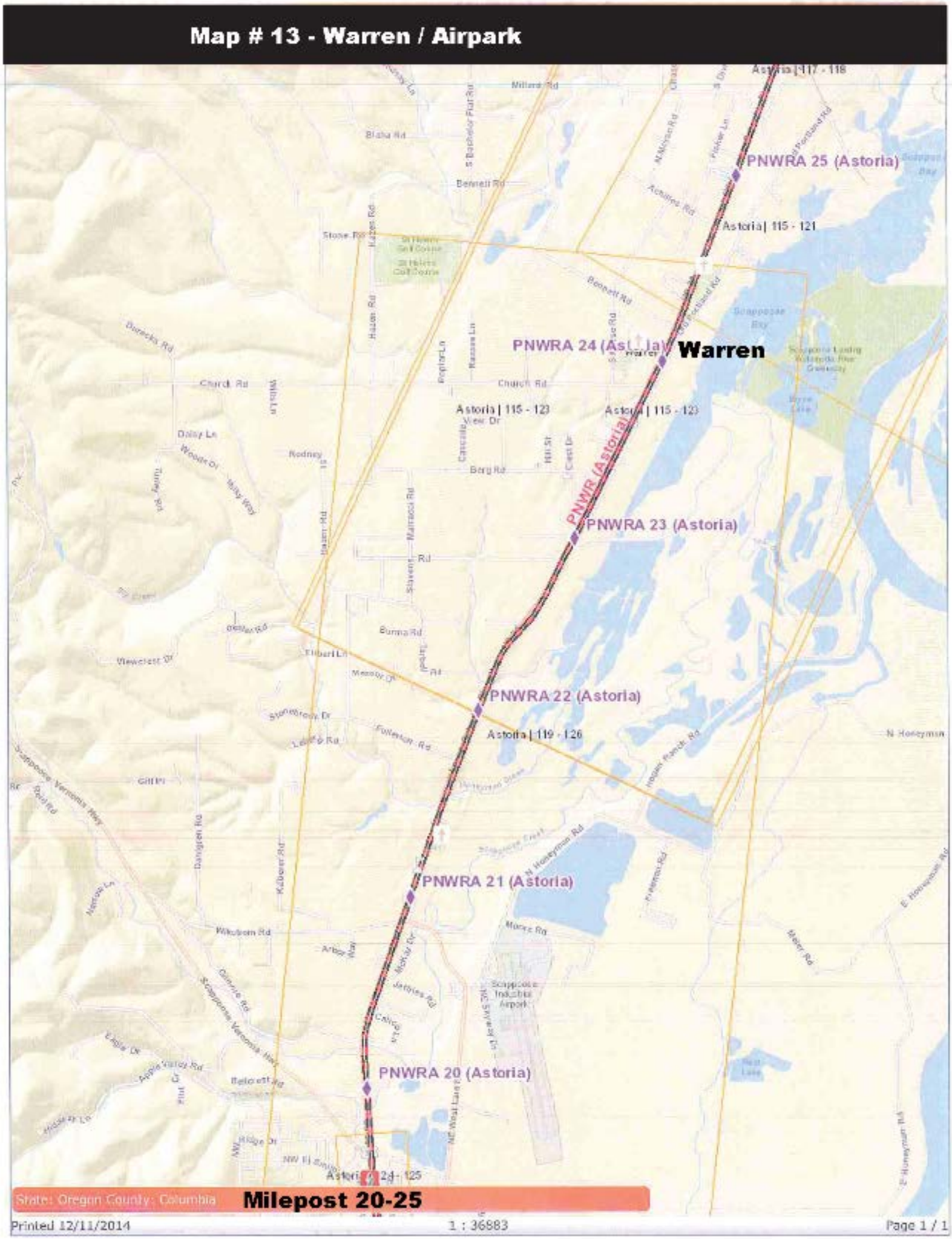
Map # 13 - Warren / Airpark
PNWRA 25 (Astoria)
Astoria | 115 - 121
PNWRA 24 (Astoria)
Warren
Astoria | 115 - 123
Astoria | 115 - 123
PNWR (Astoria)
PNWRA 23 (Astoria)
PNWRA 22 (Astoria)
Astoria | 119 - 126
PNWRA 21 (Astoria)
PNWRA 20 (Astoria)
State: Oregon County: Columbia
Milepost 20-25
Printed 12/11/2014
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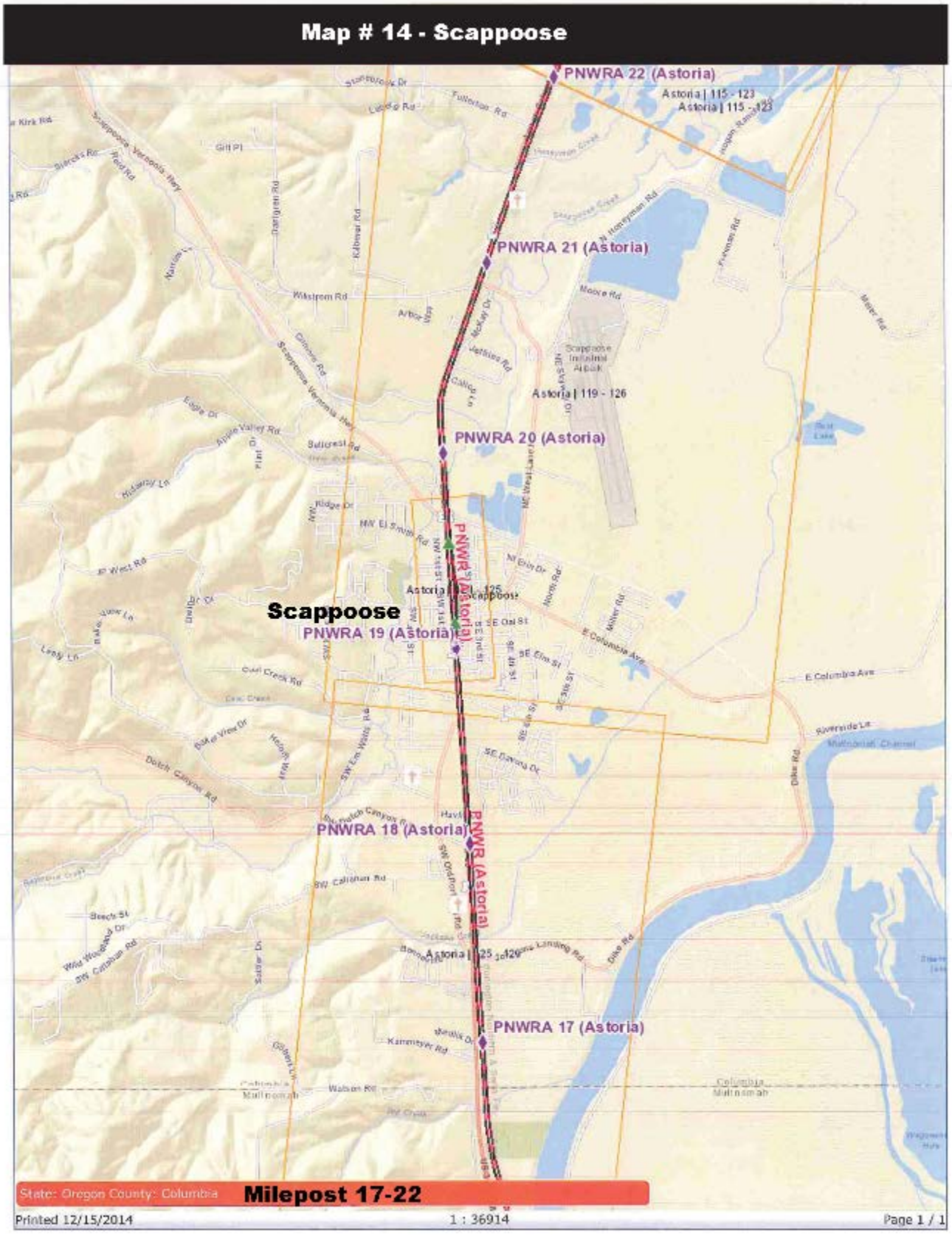
Map # 14 - Scappoose
PNWRA 22 (Astoria)
PNWRA 21 (Astoria)
PNWRA 20 (Astoria)
PNWRA 19 (Astoria)
PNWRA 18 (Astoria)
PNWRA 17 (Astoria)
Scappoose
PNWR (Astoria)
Milepost 17-22
State: Oregon County: Columbia
Printed 12/15/2014
1 : 36914
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Appendix D

Foam Application Guide

SINGLE CAR RELEASE, CONTAINED SPILL, WITH FIRE

If fire suppression operations are initiated, responders need sufficient foam concentrate supplies, adequate water supply, foam appliances, equipment and properly trained personnel to effectively implement and sustain fire suppression and post-fire suppression operations.

CRITICAL QUESTION: Do you have the ability to extinguish a single tank car containing 30,000 gallons of crude oil? Based on the guidance in NFPA 11, *Standard for Low-Medium- and High-Expansion Foam* (2011 edition) -- for a spill scenario greater than one (1) inch in depth**,** agencies will need a minimum of approximately **216 gallons of 3% foam concentrate** available for the first 15 minutes of the operation based on a spill area of approximately 3,000 sq. ft. In addition, reapplication of foam will normally be necessary to maintain an adequate foam blanket.

Note: ***If 1% foam concentrate is available and used, approximately 72 gallons of foam concentrate would be required for the first 15 minutes of the operations.***

If you do not have the capability to safely and effectively implement and sustain this tactic, defensive or non-intervention strategies should be pursued.

MULTIPLE CARS, RELEASE, SPILL WITH FIRE

The resource requirements to safely and effectively respond to an incident of this magnitude will exceed the capabilities of most emergency response organizations. In situations of this nature, the amount of foam concentrate that is required to be available on-site to begin suppression operations per NFPA 11 (2011 edition), -- for a spill scenario greater than one (1) inch in depth**,** is approximately **26,000 gallons of 3% foam concentrate** for the first 15 minutes of the operation based on a spill area of approximately 360,000 sq. ft. In addition, reapplication of foam will normally be necessary to maintain an adequate foam blanket.

Note: ***If 1% foam concentrate is available and used, approximately 8,666 gallons of foam concentrate would be required for the first 15 minutes of the operations.***

NOTE: THE TACTIC FOR THIS TYPE OF INCIDENT THAT PROVIDES THE HIGHEST LEVEL OF SAFETY TO RESPONDERS IS DEFENSIVE TO PROTECT EXPOSURES OR NON-INTERVENTION.

See “Tactical Worksheet” and the above “Foam Application Guide” in Appendix D, Response Packet

AR-AFFF @ 3 %	Hydro carbon						
Spill size Sq ft.	Rail Car Sq ft.	Total Sq ft.	Application Rate	Total flow solution GPM	Total Flow solution 65 minutes	Total flow foam GPM	Total Foam Required 65 minutes
2490	510	3000	0.16	480	31200	14.4	936
4980	1020	6000	0.16	960	62400	28.8	1872
7470	1530	9000	0.16	1440	93600	43	2795
AR-AFFF @ 3%	Polar solvents						
2490	510	3000	0.2	600	39000	18	1170
4980	1020	6000	0.2	1200	78000	36	2340
7470	1530	9000	0.2	1800	117000	54	3510
When foam is ordered for an incident the order should be doubled to include possible incident esculation and restocking fire service inventories and cashes back to previous levels.							
When replacing AR-AFFF United States Envirnmental Protection Agency Stewartship Program Requirments should be considered.							
Spills							
Spill area (sq ft) x Application Rate (.10 or .16) = GPM Foam Solution							
GPM Foam Solution X Percentage of foam (.10, .01, .03, or .(06) = GPM Foam							
GPM foam X 15 minutes = Foam Required							
Tanks or Hot Metal							
Area (sq ft) X Application Rate (.16 or .20) = GPM		GPM Foam Solution					
GPM Foam Solution x Percentage of Foam (.	.01, .03, or .06) = GPM Foam						
GPM Foam X 65 Minutes = Foam Required							
PKP Extinguishment application resources will be necessary to extinguish three dimensional fire or fire separated from foam blanket.							

Appendix E

Hazard Analysis Checklists (Checklist #2): Anhydrous Ammonia, Crude Oil, Ethyl Alcohol (Ethanol), Sodium Chlorate

Safety Data Sheets (SDSs): – Anhydrous Ammonia, Crude Oil, Ethyl Alcohol (Ethanol), Sodium Chlorate

NIOSH Pocket Guides data- Anhydrous Ammonia, Ethyl Alcohol (Ethanol)

Checklist #2 - **Hazard Analysis**

Product Name: **Anhydrous Ammonia**

Flash Point: N/A

Flammable/Explosive Range: 15% - 28% (LEL-UEL)

Vapor Pressure: (water=25 mm/Hg) 8.5 atm

Vapor Density: (Air=1 <1 Rise >1 Sink) 0.60

Corrosivity: (Acid or Caustic) Caustic

Solubility: (Soluble-Yes or No) Yes

Toxicity: (TLV, IDLH) TWA 50 ppm (35 mg/m^3) IDLH 300 ppm

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PPE requirements:

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

_____Contact Hazmat Team for assistance in interpretation of data.

_____If product is not identified or data is inconclusive, assume a worst case scenario and protect public/exposures.

_____Set Cold, Warm and Hot Zones if possible.

Safety Data Sheet
Anhydrous Ammonia

Section 1: Product and Company Identification

Tech Air
50 Mill Plain Rd.
Danbury, CT 06811
203-792-1834 | http://techair.com
Email: Safety@techair.com

EMERGENCY PHONE: P.E.R.S #800-633-8253

International: 1-801-629-0667

Product Code: Anhydrous Ammonia

Section 2: Hazards Identification

Danger

Hazard Classification:
Acute Aquatic Toxicity (Category 1)
Eye Effects (Category 1)
Flammable (Category 1)
Gases Under Pressure

Hazard Statements:
Causes serious eye damage
Contains gas under pressure; may explode if heated
Extremely flammable gas
Very toxic to aquatic life

Precautionary Statements
Prevention:
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Wear eye protection/face protection.

Response:
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses. if present and easy to do. Continue rinsing.
Eliminate all ignition sources if safe to do so.
Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

Storage:
Protect from sunlight.
Store in well-ventilated place.

Section 3: Composition/Information on Ingredients

CAS #
7664-41-7

Chemical Substance	Chemical Family	Trade Names
AMMONIA, ANHYDROUS	inorganic, gas	ANHYDROUS AMMONIA; AMMONIA GAS; AMMONIA; SPIRIT OF HARTSHORN; AMMONIA, ANHYDROUS, LIQUIFIED; UN 1005; H3N

Section 4: First Aid Measures

Skin Contact	Eye Contact	Ingestion	Inhalation	Note to Physicians
Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get immediate medical attention. Thoroughly clean and dry contaminated clothing before reuse. Destroy contaminated shoes.	Immediately flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.	Gas: Not a likely route of exposure	If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention. Wear personal protective equipment if gas still present.	For inhalation, consider oxygen.

Section 5: Fire Fighting Measures

Suitable Extinguishing Media	Products of Combustion	Protection of Firefighters
Carbon dioxide, regular dry chemical Large fires: Use regular foam or flood with fine water spray.	Nitrogen dioxide, ammonium nitrate	▪ Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply, with full-body encapsulating, chemical protective suit. ▪ Wear protective gear with respiratory support.

Section 6: Accidental Release Measures

Personal Precautions	Environmental Precautions	Methods for Containment
Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 150 feet.	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.	Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. Do not get water inside container. Trap spilled material at bottom in deep water pockets, excavated holding areas or within sand bag barriers.

Methods for Cleanup	Other Information
Small spills: Flood with water. Large spills: Dike for later disposal. Collect spilled material using mechanical equipment. Dike for later disposal. Add dilute acid. Absorb with sand or other non-combustible material. Collect runoff for disposal as potential hazardous waste. Do not direct water at source of leak of liquid ammonia.	Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

Section 7: Handling and Storage

Handling	Storage
Avoid heat, flames, sparks and other sources of ignition. Keep separated from incompatible substances.	Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.111. Protect from physical damage. Store outside or in a detached building. Inside storage: Store in a cool, dry place. Store in a well-ventilated area. Store in a cool, dry place. Store in a well-ventilated area. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30).

Section 8: Exposure Controls/Personal Protection

Exposure Guidelines
AMMONIA, ANHYDROUS: 50 ppm (35 mg/m3) OSHA TWA 35 ppm (27 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993) 25 ppm ACGIH TWA 35 ppm ACGIH STEL 25 ppm (18 mg/m3) NIOSH recommended TWA 10 hour(s) 35 ppm (27 mg/m3) NIOSH recommended STEL

Engineering Controls

Handle only in fully enclosed systems.

Eye Protection	Skin Protection	Respiratory Protection
Wear splash resistant safety goggles with a face shield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.	Wear appropriate chemical resistant clothing.	Any supplied-air respirator with full facepiece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply, with full-body encapsulating, chemical protective suit.

General Hygiene considerations

- Avoid breathing vapor or mist
- Avoid contact with eyes and skin
- Wash thoroughly after handling and before eating or drinking

Section 9: Physical and Chemical Properties

Physical State	Appearance	Color	Change in Appearance	Physical Form	Odor	Taste
Gas	Colorless	Colorless	N/A	Gas, liquid	Pungent odor	N/A

Flash Point	Flammability	Partition Coefficient	Autoignition Temperature	Upper Explosive Limits	Lower Explosive Limits
Not available			1204 F (651 C)	0.28	0.15

Boiling Point	Freezing Point	Vapor Pressure	Vapor Density	Specific Gravity	Water Solubility	pH	Odor Threshold	Evaporation Rate	Viscosity
-27 F (-33 C)	-108 F (-78 C)	6658 mmHg @ 21 C	0.5967 (Air=1)	Not applicable (gas); 0.682 @ -33.4 C (liquefied gas)	38% @ 20 C	11.6 (1.0 N solution)	1-5 ppm	Not applicable	0.255 mPa.s (0.255 centipoises) @ -33.5 C (liquefied gas)

Molecular Weight	Molecular Formula	Density	Weight per Gallon	Volatility by Volume	Volatility	Solvent Solubility
17.03	N-H3	0.7067 g/L @ 25 C	Not available	Not available	Not applicable	Soluble: Methanol, ethanol, chloroform, ether, organic solvents

Section 10: Stability and Reactivity

Stability	Conditions to Avoid	Incompatible Materials
Stable at normal temperatures and pressure.	Stable at normal temperatures and pressure.	Acids, combustible materials, metals, oxidizing materials, metal salts, halo carbons, halogens, amines, reducing agents, cyanides, bases

Hazardous Decomposition Products	Possibility of Hazardous Reactions
Ammonia, oxides of nitrogen	Will not polymerize.

Section 11: Toxicology Information

Acute Effects

Oral LD50	Dermal LD50	Inhalation
2000 ppm/4 hour(s) inhalation-rat LC50	Not established	Burns, severe irritant, pulmonary edema at concentrations over 1500 ppm

Eye Irritation	Skin Irritation	Sensitization
Burns, blindness	Burns, liquefied gas can cause frostbite	Respiratory tract burns, skin burns, eye burns, mucous membrane burns, corrosive to eyes

Chronic Effects

Carcinogenicity	Mutagenicity	Reproductive Effects	Developmental Effects
Not listed	Available.	Not established	No data

Section 12: Ecological Information

Fate and Transport

Eco toxicity	Persistence / Degradability	Bioaccumulation / Accumulation	Mobility in Environment
Fish toxicity: Acute LC50 0.88 mg/L 96 hour(s) Orangethroat; 1600 ug/L 96 hour(s) LC50 (Mortality) Common jollytail (Galaxias maculatus) Invertibrate toxicity: 7700 ug/L 96 hour(s) LC50 (Immobilization) Ark shell (Anadara granosa) Algal toxicity: 2100-2300 ug/L NR hour(s) (Abundance) Algae, phytoplankton, algal mat (Algae) Phyto toxicity: 16500 ug/L 30 hour(s) (Abundance) Common water-nymph (Najas guadalupensis) Other toxicity: Not available	Not available	Not available	Not available

Section 13: Disposal Considerations

Dispose in accordance with all applicable regulations.

Section 14: Transportation Information

U.S. DOT 49 CFR 172.101

Proper Shipping Name	ID Number	Hazard Class or Division	Packing Group	Labeling Requirements	Passenger Aircraft or Railcar Quantity Limitations	Cargo Aircraft Only Quantity Limitations	Additional Shipping Description
Ammonia, anhydrous	UN1005	2.2, 2.3	Not applicable	2.3; 8	Forbidden	Forbidden	Toxic-Inhalation Hazard Zone D

Canadian Transportation of Dangerous Goods

Shipping Name	UN Number	Class	Packing Group / Risk Group
AMMONIA, ANHYDROUS; or ANHYDROUS AMMONIA	UN1005	2.3; 8	Not applicable

Section 15: Regulatory Information

U.S. Regulations

CERCLA Sections	SARA 355.30	SARA 355.40
100 LBS RQ	500 LBS TPQ	100 LBS RQ

SARA 370.21

Acute	Chronic	Fire	Reactive	Sudden Release
Yes	No	No	No	Yes

SARA 372.65

AMMONIA, ANHYDROUS

OSHA Process Safety

10000 LBS TQ

State Regulations

CA Proposition 65
Not regulated.

Canadian Regulations

WHMIS Classification
A, B1, D1A, E

National Inventory Status

US Inventory (TSCA)	TSCA 12b Export Notification	Canada Inventory (DSL/NDSL)
Listed on inventory.	Not listed.	Not determined.

Section 16: Other Information

NFPA Rating
HEALTH=3 FIRE=1 REACTIVITY=0

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Ammonia	**Formula:** NH_3	**CAS#:** 7664-41-7	**RTECS#:** BO0875000	**IDLH:** 300 ppm
Conversion: 1 ppm = 0.70 mg/m^3	**DOT:** 1005 125 (anhydrous); 2672 154 (10-35% solution); 2073 125 (>35-50% solution); 1005 125 (>50% solution)			

Synonyms/Trade Names: Anhydrous ammonia, Aqua ammonia, Aqueous ammonia
[Note: Often used in an aqueous solution.]

Exposure Limits:
NIOSH REL: TWA 25 ppm (18 mg/m^3)
ST 35 ppm (27 mg/m^3)
OSHA PEL†: TWA 50 ppm (35 mg/m^3)

Measurement Methods (see Table 1):
NIOSH 3800, 6015, 6016
OSHA ID188

Physical Description: Colorless gas with a pungent, suffocating odor.
[Note: Shipped as a liquefied compressed gas. Easily liquefied under pressure.]

Chemical & Physical Properties:
MW: 17.0
BP: -28°F
Sol: 34%
Fl.P: NA (Gas)
IP: 10.18 eV
RGasD: 0.60
VP: 8.5 atm
FRZ: -108°F
UEL: 28%
LEL: 15%
[Note: Although NH_3 does not meet the DOT definition of a Flammable Gas (for labeling purposes), it should be treated as one.]

Personal Protection/Sanitation (see Table 2):
Skin: Prevent skin contact
Eyes: Prevent eye contact
Wash skin: When contam (solution)
Remove: When wet or contam (solution)
Change: N.R.
Provide: Eyewash (>10%)
Quick drench (>10%)

Respirator Recommendations (see Tables 3 and 4):
NIOSH
250 ppm: CcrS*/Sa*
300 ppm: Sa:Cf*/PaprS*/CcrFS/GmFS/ScbaF/SaF
§: ScbaF:Pd,Pp/SaF:Pd,Pp:AScba
Escape: GmFS/ScbaE

Incompatibilities and Reactivities: Strong oxidizers, acids, halogens, salts of silver & zinc
[Note: Corrosive to copper & galvanized surfaces.]

Exposure Routes, Symptoms, Target Organs (see Table 5):
ER: Inh, Ing (solution), Con (solution/liquid)
SY: Irrit eyes, nose, throat; dysp, wheez, chest pain; pulm edema; pink frothy sputum; skin burns, vesic; liquid: frostbite
TO: Eyes, skin, resp sys

First Aid (see Table 6):
Eye: Irr immed (solution/liquid)
Skin: Water flush immed (solution/liquid)
Breath: Resp support
Swallow: Medical attention immed (solution)

Checklist #2 - **Hazard Analysis**

Product Name: **Crude Oil (DOT name: Petroleum oil)**

Flash Point: < 60° - > 200° F

Flammable/Explosive Range: 0.8% - 8.0% (LEL-UEL)

Vapor Pressure: (water=25 mm/Hg) 280-360 mmHg @ 68°F

Vapor Density: (Air=1 <1 Rise >1 Sink) 2.5-5.0 estimated

Corrosivity: (Acid or Caustic)_____

Solubility: (Soluble-Yes or No)_____

Toxicity: (TLV, IDLH)_____

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PPE requirements:

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

_____Contact Hazmat Team for assistance in interpretation of data.

_____If product is not identified or data is inconclusive, assume a worst case scenario and protect public/exposures.

_____Set Cold, Warm and Hot Zones if possible.

Safety Data Sheet

1. Identification

Product Name:	Crude Oil (Sweet)
Chemical Family:	Petroleum Hydrocarbon Mixture
Manufacturers Name:	Whiting Oil and Gas Corporation
Address:	1700 Broadway, Suite 2300 Denver, Colorado 80290
Product Use:	Feedstock for petroleum and petrochemical refining.
Phone Number for Information:	(303) 837-1661
Emergency Phone Number:	(800) 424-9300 (Chemtrec)

Crude oil is a complex mixture of paraffinic, cycloparaffinic and aromatic hydrocarbons covering carbon numbers ranging from C1 to over C60. It is amber to black in color. Crude oil contains small amounts of sulfur, nitrogen and oxygen compounds as well as trace amounts of heavy metals.

2. Hazard Identification

Crude oil is extremely flammable and can cause eye, skin, gastrointestinal, and respiratory irritation. Inhalation may cause dizziness, nausea, or headache. More serious health effects can occur if crude oil in inhaled or swallowed.

Crude oil may contain variable amounts of benzene and n-hexane. Long-term exposure to these materials has been shown to lead to systemic toxicity such leukemia and peripheral neurotoxicity.

DANGER!
FLAMMABLE LIQUID

MAY CONTAIN BENZENE WHICH CAN CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS. ASPIRATION OF LIQUID INTO THE LUNGS CAN PRODUCE CHEMICAL PNEUMONIA OR EVEN DEATH.

NO SMOKING!
KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. WEAR PROTECTIVE GLOVES, CLOTHING AND EYE WEAR WHEN HANDLING. AVOID RELEASE INTO THE ENVIRONMENT.

Globally Harmonized System (GHS) Information

Physical Hazards Classification
Flammable Liquids, Category 2

Health Hazards Classification
Acute Toxicity (Skin/Dermal), Category 3
Skin Corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2a
Carcinogenicity, Category 1B
Specific Target organ toxicity – single exposure, Category 3 (narcotic effects)
Specific Target organ toxicity – repeated exposure, Category 2 (bone marrow, liver, thymus)
Aspiration hazard, Category 1

Environmental Hazards Classification
Acute Toxicity to the aquatic environment, Category 3
Chronic Toxicity to the aquatic environment, Category 3

GHS Label Information	
Symbols: 	
Signal Word: Danger	
Hazard Statements:	**Precautionary Statements:**
Physical Hazards Flammable liquid and vapor **Health Hazards** May cause cancer May be fatal if swallowed and enters airways Causes eye irritation May cause drowsiness or dizziness May cause damage to organs through prolonged or repeated exposure Causes mild skin irritation **Environmental Hazards** Harmful to aquatic life Harmful to aquatic life with long lasting effects	**Prevention** Keep away from heat/sparks/open flames/hot surfaces – no smoking Keep container tightly closed Ground/bond container and receiving equipment Use explosion proof electrical/ventilation/lighting equipment Use only non-sparking tools Take precautionary measures against static discharge Wear protective gloves/protective clothing/eye protection/face protection Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wash hands thoroughly after handling Do not breathe vapors Do not eat, drink or smoke when using this product Use only outdoors or in a well-ventilated area Avoid release to the environment **Response** IF ON SKIN (or hair): Remove all contaminated clothing. Rinse skin with water/shower In case of fire: use appropriate extinguishing media If exposed or concerned: Get medical attention or advice IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

	If irritation persists get medical advice/attention IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Collect spillage IF SWALLOWED: Immediately call a poison control center or doctor/physician Do not induce vomiting **Storage** Store locked up Store in a well-ventilated place. Keep container tightly closed. **Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations

3. Composition/Information on Ingredients

COMPOSITION	CAS NUMBER	PERCENT
Crude Oil	8002-05-9	100
May Contain Variable Amounts of:		
Natural Gas	8005-14-2	---
Benzene	71-43-2	---
N-Hexane	110-54-3	---

4. First Aid Measures

Eye Contact
Immediately flush eyes while holding eyelids open, with large amounts of clean, low-pressure tepid water for at least 15 minutes. If symptoms, irritation or injury persists, worsen or develop, seek medical attention.

Skin Contact
Remove contaminated clothing/shoes, wipe excess from skin. Immediately flush skin with water for 15 minutes then wash with soap and water. If illness or adverse symptoms develop or irritation persists, seek medial attention. Discard contaminated leather goods.

Inhalation
Remove victim to fresh air and provide oxygen if breathing labored, shallow, or difficult. Rescuer must wear appropriate supplied air respirator to remove worker from contaminated area to fresh air. Give artificial respiration if victim is not breathing. Seek medical attention immediately*.

Ingestion
Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Seek medical attention.*

Note to Physician
*If more than 2.0 ML per KG has been ingested and emesis has not occurred, vomiting should be induced with supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

Aggravated Medical Conditions
Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to crude oil.

5. Fire-Fighting Measures

Extinguishing Media
For small fires, class B fire extinguishing media can be used. Use water fog, foam, dry chemical or CO_2. Do not use a direct stream of water. Product will float and can be reignited on surface of water.

Special Fire Fighting Procedures and Precautions
Warning: Flammable. Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots) including a positive pressure NIOSH approved self-contained breathing apparatus (SCBA). Cool containers exposed to fire with water.

Unusual Fire Explosion Hazards
Container exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture (bleve). Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure. Sulfur oxides and hydrogen sulfide, both of which are toxic, may be released upon combustion.

NFPA Ratings
Health – 2
Flammability – 3
Reactivity – 0
Other – 0

Key: Least-0; Slight-1; Moderate-2; High-3; Extreme-4

6. Accidental Release Measures

Keep the public away. Isolate and evacuate the area. Eliminate all ignition sources. Handling equipment must be grounded or bonded to prevent sparking.

*** **Large Spills*** Evacuate the hazard area of unprotected personnel. Wear appropriate respirator and protective clothing. Shut off source of leak only if safe to do so. Dike and contain with sand or soil. If vapor cloud forms, water fog may be used to suppress. Contain run-off. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in non-leaking containers for proper disposal. Flush area with water to remove trace residue and dispose of flush solutions as above.
*** **Small Spills*** Take up with an absorbent material and place in non-leaking containers; seal tightly for proper disposal.

7. Handling and Storage

Comply with all regulatory requirements. Store in suitable tanks or closed, labeled containers in a cool, well-ventilated area.

Keep liquid and vapor away from heat, sparks and flame. Surfaces that are sufficiently hot may even ignite liquid product in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off other sources of ignition prior to use and until all vapors have been dispersed. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment.

Wash hands with soap and water before eating, drinking, smoking or using toilet facilities. Launder contaminated clothing before reuse. Dispose of leather articles including shoes which cannot be decontaminated.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

COMPONENT	OSHA PEL	ACGIH TLV TWA
Crude Oil	400 ppm ***	Not available
Natural Gas	Not available	Not available
Hexane	500 ppm	500 ppm/STEL 1000 ppm
Benzene	1 ppm**/STEL 5 ppm	0.5 ppm

Notes:
** OSHA's action level is 0.5 ppm (29 CFR 1910.1028)
*** Listed PEL was vacated in 1993

Engineering Controls

Maintain air concentrations below flammable limits and occupational exposure standards for chemical components by using ventilation and other engineering controls.

Personal Protective Equipment

Eye/Face Protection
Use safety glasses, chemical splash goggles and/or a face shield as appropriate to prevent eye contact.

Skin Protection
Wear chemical resistant gloves and other protective clothing, as required, to minimize skin contact. Test data from published literature and/or glove and clothing manufacturers indicate suitable protection is provided by neoprene or nitrile gloves.

Respiratory Protection
Use NIOSH approved respiratory protection as required to prevent overexposure to oil mist and vapor. Do not enter storage compartments unless equipped with a NIOSH approved self-contained breathing apparatus with a full face-piece operated in a positive pressure mode.

Protective Clothing
Wear chemical resistant gloves and other protective clothing, as required, to minimize skin contact. Use safety glasses or chemical splash goggles to prevent eye contact. Test data from published literature and/or glove and clothing manufacturers indicate suitable protection is provided by neoprene or nitrile gloves.

9. Physical and Chemical Properties

Appearance and Odor: Black, dark green or yellow liquid; strong hydrocarbon and possible sulfur odor.

pH:	Neutral
Melting Point/freezing point:	Not available
Boiling Point:	<100°F
Flash Point and Method:	<60°F to >200°F / Pensky-Martens Closed Cup Tester
Evaporation Rate:	Slower (N-Butyl Acetate =1)
Flammable Limits:	(approximate % Volume in air) Lower: 1.0 Upper: 7.0
Vapor Pressure:	0-724 mm Hg
Specific Gravity:	0.7-1.0 (H_2O=1.0)
Vapor Density	1.5-3.0 (Air=1)
Solubility:	Slight (in water)
Partition coefficient (n-octanol/water):	2-6
Auto ignition temperature	>500 °F
Decomposition temperature	Not available
Viscosity	Not available

10. Stability and Reactivity

Stability: Stable
Hazardous polymerization: Will not occur
Conditions and Materials to Avoid: Avoid heat, sparks, flame and contact with strong oxidizing agents.
Hazardous Decomposition Products: Thermal decomposition products are highly dependent on the combustion conditions. A complex mixture of airborne, solid, liquid, particulates and gases will evolve when this material undergoes pyrolysis or combustion. Carbon monoxide and other unidentified organic compounds may be formed upon combustion.

11. Toxicological Information

Acute toxicity - Ingestion may cause irritation of the mouth, throat & gastrointestinal tract leading to nausea, vomiting, diarrhea and restlessness. Vapors can be harmful or fatal if inhaled. Exposure may result in central nervous system (CNS) depression. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness and nausea; in extreme cases, unconsciousness and death may occur.

Skin corrosion/irritation - Based on the presence of light hydrocarbons, crude oil is presumed to be moderately irritating to the skin. Prolonged and repeated contact may cause various skin disorders such as dermatitis, folliculitis, oil acne, or skin tumors.

Eye damage/irritation - Based on the presence of light hydrocarbons, crude oil is presumed to be moderately irritating to the eyes.

Sensitization - Not known to cause respiratory or skin sensitization

Germ cell mutagenicity – Information not available

Carcinogenicity – May contain benzene which is a confirmed human carcinogen (leukemia). Also, several long term skin painting studies in experimental animals have shown crude oil to produce skin cancer.

Reproductive toxicity – Not a known reproductive toxin

Specific Target Organs/Systemic Toxicity – Blood/bone marrow, nervous system, respiratory system, eyes

Aspiration hazard – Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration can occur while vomiting after ingestion of this product. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin); in severe cases death may occur.

12. Ecological Information

Coating action of oil can kill birds, plankton, algae and fish. Keep out of all bodies of water and sewage drainage systems.

13. Disposal Considerations

This product, as produced, is not specifically listed as an EPA RCRA hazardous waste according to 40 CFR 261. However, when disposed of, it may meet the criteria of a "characteristic" hazardous waste (e.g. D001 – ignitable). This product could also contain benzene and could be considered hazardous because it exhibits the characteristic of "toxicity." It is the responsibility of the user to determine if the material is considered hazardous for disposal under federal, state and local regulations.

14. Transportation Information

Department of Transportation Classification: Flammable liquid if flash point <200°F.
D.O.T. proper shipping name: Crude Oil Petroleum
Other Requirements: UN 1267
Hazard Class: 3
Packing Group II

15. Regulatory Information

TSCA This product is listed on the TSCA chemical inventory.

SARA Section 302 This product does not contain any components on the EPA's extremely hazardous substance list.

SARA Section 304 This product may contain the following component(s) which in the event of a spill may be subject to SARA reporting requirements: toluene, xylene, hexane, benzene.

SARA Section 311/312 The following hazard categories apply to this product:
Acute health hazard
Chronic health hazard
Fire hazard

SARA Section 313 This product may contain the following component(s) which may be subject to reporting on a toxic release inventory: toluene, xylene, hexane, benzene.

EPA-CWA Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 800-424-8802.

16. Other Information

Date Prepared:	August 29, 2008
Revised:	October 30, 2013
Last Reviewed:	October 30, 2013

Disclaimer:

The information and recommendations contained in this SDS are believed to be accurate at the date of its preparation. Whiting Oil and Gas Corporation makes no representations or warranties, express or implied, with respect to the accuracy or completeness of the information contained herein. Whiting Oil and Gas Corporation assumes no responsibility for incorrect handling or use of the product or the inherent hazards in the product itself.

Safety Data Sheet

1. Identification

Product Name:	Crude Oil (Sour)
Chemical Family:	Petroleum Hydrocarbon Mixture
Manufacturers Name:	Whiting Oil and Gas Corporation
Address:	1700 Broadway, Suite 2300 Denver, Colorado 80290
Product Use:	Feedstock for petroleum and petrochemical refining.
Phone Number for Information:	(303) 837-1661
Emergency Phone Number:	(800) 424-9300 (Chemtrec)

Crude oil (sour) is a complex mixture of paraffinic, cycloparaffinic and aromatic hydrocarbons covering carbon numbers ranging from C1 to over C60. It is amber to black in color. Crude oil contains small amounts of sulfur, nitrogen and oxygen compounds as well as trace amounts of heavy metals. Crude oil (sour) contains hydrogen sulfide.

2. Hazard Identification

Crude oil (sour) is extremely flammable and can cause eye, skin, gastrointestinal, and respiratory irritation. Inhalation may cause dizziness, nausea, or headache. More serious health effects can occur if crude oil is inhaled or swallowed.

Crude oil (sour) may contain variable amounts of benzene and N-Hexane. Long-term exposure to these materials has been shown to lead to systemic toxicity such leukemia and peripheral neurotoxicity.

DANGER!
FLAMMABLE LIQUID

MAY VENT HARMFUL CONCENTRATIONS OF HYDROGEN SULFIDE (H_2S) GAS WHICH CAN CAUSE RESPIRATORY IRRITATION AND ASPHYXIATION. MAY CONTAIN BENZENE WHICH CAN CAUSE CANCER OR BE TOXIC TO BLOOD-FORMING ORGANS. ASPIRATION OF LIQUID INTO THE LUNGS CAN PRODUCE CHEMICAL PNEUMONIA OR EVEN DEATH.

NO SMOKING!
KEEP AWAY FROM HEAT/SPARKS/OPEN FLAMES/HOT SURFACES. WEAR RESPIRATORY PROTECTION, PROTECTIVE GLOVES, CLOTHING AND EYE WEAR WHEN HANDLING. AVOID RELEASE INTO THE ENVIRONMENT.

Globally Harmonized System (GHS) Information

Physical Hazards Classification
Flammable Liquids, Category 2

Health Hazards Classification
Acute Toxicity (Skin/Dermal), Category 3
Skin Corrosion/irritation, Category 2
Serious eye damage/eye irritation, Category 2a
Carcinogenicity, Category 1B
Specific Target organ toxicity – single exposure, Category 1 (lung), Category 3 (narcotic effects)
Specific Target organ toxicity – repeated exposure, Category 2 (bone marrow, liver, thymus)
Aspiration hazard, Category 1

Environmental Hazards Classification
Acute Toxicity to the aquatic environment, Category 3
Chronic Toxicity to the aquatic environment, Category 3

GHS Label Information	
Symbols: 	
Signal Word: Danger	
Hazard Statements:	**Precautionary Statements:**
Physical Hazards Flammable liquid and vapor **Health Hazards** May cause cancer May be fatal if swallowed and enters airways Causes eye irritation May cause drowsiness or dizziness May cause damage to organs through prolonged or repeated exposure Causes mild skin irritation **Environmental Hazards** Harmful to aquatic life Harmful to aquatic life with long lasting effects	**Prevention** Keep away from heat/sparks/open flames/hot surfaces – no smoking Keep container tightly closed Ground/bond container and receiving equipment Use explosion proof electrical/ventilation/lighting equipment Use only non-sparking tools Take precautionary measures against static discharge Wear protective gloves/protective clothing/eye protection/face protection Obtain special instructions before use Do not handle until all safety precautions have been read and understood Wash hands thoroughly after handling Do not breathe vapors Do not eat, drink or smoke when using this product Use only outdoors or in a well-ventilated area Avoid release to the environment **Response** IF ON SKIN (or hair): Remove all contaminated clothing. Rinse skin with water/shower In case of fire: use appropriate media for extinction If exposed or concerned: Get medical attention or advice IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If irritation persists get medical advice/attention IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

	Collect spillage IF SWALLOWED: Immediately call a poison control center or doctor/physician Do not induce vomiting **Storage** Store locked up Store in a well-ventilated place. Keep container tightly closed. **Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations

3. Composition/Information on Ingredients

COMPOSITION	CAS NUMBER	PERCENT
Crude Oil	8002-05-9	100
May Contain Variable Amounts of:		
Hydrogen Sulfide	7783-06-4	> 10 ppm
Natural Gas	8005-14-2	---
Benzene	71-43-2	---
N-Hexane	110-54-3	---

4. First Aid Measures

Eye Contact
Immediately flush eyes, while holding eyelids open, with large amounts of clean, low-pressure tepid water for at least 15 minutes. If symptoms, irritation or injury persists, worsen or develop, seek medical attention.

Skin Contact
Remove contaminated clothing/shoes, wipe excess from skin. Immediately flush skin with water for 15 minutes then wash with soap and water. If illness or adverse symptoms develop or irritation persists, seek medial attention. Discard contaminated leather goods.

Inhalation
Remove victim to fresh air and provide oxygen if breathing labored, shallow, or difficult. Rescuer must wear appropriate supplied air respirator to remove worker from contaminated area to fresh air. Give artificial respiration if victim is not breathing. Seek medical attention immediately*.

Ingestion
Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Seek medical attention.*

***Note to Physician or Health Care Provider**
If more than 2.0 ML per KG has been ingested and emesis has not occurred, vomiting should be induced with supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

Aggravated Medical Conditions
Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to crud3e oil containing hydrogen sulfide.

5. Fire-Fighting Measures

Extinguishing Media
For small fires, class B fire extinguishing media can be used. Use water fog, foam, dry chemical or CO_2 for larger fires. Do not use a direct stream of water. Product will float and can be reignited on surface of water.

Special Fire Fighting Procedures and Precautions
Warning: Flammable. Clear fire area of unprotected personnel. Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots) including a positive pressure NIOSH approved self-contained breathing apparatus (SCBA). Cool fire exposed containers with water.

Unusual Fire Explosion Hazards
Container exposed to intense heat from fires should be cooled with water to prevent vapor pressure buildup which could result in container rupture (bleve). Container areas exposed to direct flame contact should be cooled with large quantities of water as needed to prevent weakening of container structure. Sulfur oxides and hydrogen sulfide, both of which are toxic, may be released upon combustion.

NFPA Ratings
Health – 3
Flammability – 3
Reactivity – 0
Other – 0

Key: Least-0; Slight-1; Moderate-2; High-3; Extreme-4

6. Accidental Release Measures

Keep the public away. Isolate and evacuate the area. Eliminate all ignition sources. Handling equipment must be grounded to prevent sparking.

*** **Large Spills** *** Evacuate the hazard area of unprotected personnel. Wear appropriate respirator and protective clothing. If safe to do so, shut off source of leak. Dike and contain with sand or soil. If vapor cloud forms, water fog may be used to suppress. Contain run-off. Remove with vacuum trucks or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in non-leaking containers for proper disposal. Flush area with water to remove trace residue and dispose of flush solutions as above.

*** **Small Spills** *** Take up with an absorbent material and place in non-leaking containers; seal tightly for proper disposal.

7. Handling and Storage

Comply with all regulatory requirements. Store in suitable tanks or closed and labeled containers in a cool, well-ventilated area.

Keep liquid and vapor away from heat, sparks and flame. Surfaces that are sufficiently hot may even ignite liquid product in the absence of sparks or flame. Extinguish pilot lights, cigarettes and turn off all other ignition sources until all vapors are gone. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground transfer containers and equipment.

Wash hands with soap and water before eating, drinking, smoking or using toilet facilities. Launder contaminated clothing before reuse. Dispose of leather articles including shoes which cannot be decontaminated.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

COMPONENT	OSHA PEL	ACGIH TLV TWA
Crude Oil	400 ***	Not available
Natural Gas	Not available	Not available
Hexane	500 ppm	500 ppm/STEL 1000 ppm
Benzene	1 ppm**/STEL 5 ppm	0.5 ppm
Hydrogen Sulfide	20 ppm ceiling	1 ppm/STEL 5 ppm

Notes:
** OSHA's action level is 0.5 ppm (29 CFR 1910.1028)
*** Listed PEL was vacated in 1993

Engineering Controls
Maintain air concentrations below flammable limits and occupational exposure standards for chemical components by using ventilation and other engineering controls.

Personal Protective Equipment

Eye/Face Protection
Use safety glasses, chemical splash goggles, or a face shield as appropriate to prevent eye contact.

Skin Protection
Wear chemical resistant gloves and other protective clothing, as required, to minimize skin contact.

Respiratory Protection
Use NIOSH approved respiratory protection, as required, to prevent overexposure to oil mist and vapor. Do not enter storage compartments or hydrogen sulfide areas unless equipped with a NIOSH approved self-contained breathing apparatus (SCBA) with a full face-piece and operated in a positive pressure mode.

9. Physical and Chemical Properties

Appearance and Odor: Black, dark green or yellow liquid; strong hydrocarbon and possible sulfur (rotten egg like) odor. Note: Hydrogen sulfide causes olfactory fatigue or loss of smell at high concentrations.

pH:	Neutral
Melting Point/freezing point:	Not available
Boiling Point:	<100°F
Flash Point and Method:	<60°F to >200°F / Pensky-Martens Closed Cup Tester
Evaporation Rate:	Slower (N-Butyl Acetate =1)
Flammable Limits:	(approximate % Volume in air) Lower: 1.0Upper:7
Vapor Pressure:	0-724 mm Hg
Specific Gravity:	0.7-1.0 (H_2O=1.0)
Vapor Density	1.5-3 (Air=1)
Solubility:	Slight (in water)
Partition coefficient (n-octanol/water):	2-6
Auto ignition temperature	>500 °F
Decomposition temperature	Not available
Viscosity	Not available

10. Stability and Reactivity

Stability: Stable
Hazardous polymerization: Will not occur
Conditions and Materials to Avoid: Avoid heat, sparks, flame and contact with strong oxidizing agents.
Hazardous Decomposition Products: Thermal decomposition products are highly dependent on the combustion conditions. A complex mixture of airborne, solid, liquid, particulates and gases will evolve when this material undergoes pyrolysis or combustion. Carbon monoxide (CO), sulfur dioxide (SO_2) and other unidentified organic compounds may be formed upon combustion.

11. Toxicological Information

Acute toxicity - Ingestion may cause irritation of the mouth, throat & gastrointestinal tract leading to nausea, vomiting, diarrhea and restlessness. Vapors can be harmful or fatal if inhaled. Exposure may result in central nervous system (CNS) depression. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness and nausea; in extreme cases, unconsciousness and death may occur.

Hydrogen sulfide (H_2S) gas may accumulate in storage tanks and bulk transport compartments containing petroleum crudes or condensates. Prolonged breathing (greater than one hour) of concentrations of H_2S around 50 ppm can produce eye and respiratory tract irritation; levels of 250 to 600 ppm will result in fluid in the lungs(pulmonary edema), and concentrations around 1,000 ppm will cause unconsciousness and death in a short period of time. The sense of smell rapidly become insensitive to this toxic, colorless gas and the odor of condensate may mask the odor of H_2S. Therefore, odor cannot be relied upon as an indicator of concentration of the gas.

Skin corrosion/irritation - Based on the presence of light hydrocarbons and H_2S, crude oil (sour) is presumed to be moderately irritating to the skin. Prolonged and repeated contact may cause various skin disorders such as dermatitis, folliculitis, oil acne, or skin tumors.

Eye damage/irritation - Based on the presence of light hydrocarbons and H_2S, crude oil (sour) is presumed to be moderately irritating to the eyes.

Sensitization - Not known to cause respiratory or skin sensitization

Germ cell mutagenicity – Information not available

Carcinogenicity – May contain benzene which is a confirmed human carcinogen (leukemia). Also, several long term skin painting studies in experimental animals have shown crude oil to produce skin cancer.

Reproductive toxicity – Not a known reproductive toxin

Specific Target Organs/Systemic Toxicity – Blood/bone marrow, nervous system, respiratory system, eyes

Aspiration hazard – Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration can occur while vomiting after ingestion of this product. Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin); in severe cases death may occur.

12. Ecological Information

Coating action of oil can kill birds, plankton, algae and fish. Keep out of all bodies of water and sewage drainage systems.

13. Disposal Considerations

This product as produced is not specifically listed as an EPA RCRA hazardous waste according to 40 CFR 261. However, when disposed of, it may meet the criteria of a "characteristic" hazardous waste (e.g. D001 – ignitable). This product could also contain benzene and could be considered hazardous because it exhibits the characteristic of "toxicity." It is the responsibility of the user to determine if the material is considered hazardous for disposal under federal, state and local regulations.

14. Transportation Information

Department of Transportation Classification: Flammable liquid if flash point <200°F.
D.O.T. proper shipping name: Crude Oil Petroleum
Other Requirements: UN 1267
Hazard Class: 3
Packing Group II

15. Regulatory Information

TSCA This product is listed on the TSCA chemical inventory.

SARA Section 302 This product contains hydrogen sulfide which has been listed on the EPA's extremely hazardous substance list.

SARA Section 304 This product may contain the following component(s) which in the event of a spill may be subject to SARA reporting requirements: hydrogen sulfide, toluene, xylene, hexane, benzene.

SARA Section 311/312 The following hazard categories apply to this product:
Acute health hazard
Chronic health hazard
Fire hazard

SARA Section 313 This product may contain the following component(s) which may be subject to reporting on a toxic release inventory: hydrogen sulfide, toluene, xylene, hexane, benzene.

EPA-CWA Spills into or leading to surface waters that cause a sheen must be reported to the National Response Center, 800-424-8802.

16. Other Information

Date Prepared:	August 29, 2008
Revised:	October 30, 2013
Last Reviewed:	October 30, 2013

Disclaimer:

The information and recommendations contained in this SDS are believed to be accurate at the date of its preparation. Whiting Oil and Gas Corporation makes no representations or warranties, express or implied, with respect to the accuracy or completeness of the information contained herein. Whiting Oil and Gas Corporation assumes no responsibility for incorrect handling or use of the product or the inherent hazards in the product itself.

Checklist #2 - **Hazard Analysis**

Product Name: **Ethyl Alcohol (Ethanol)**

Flash Point: 55° F

Flammable/Explosive Range: 3.3% - 19% (LEL – UEL)

Vapor Pressure: (water=25 mm/Hg) 44 mmHg

Vapor Density: (Air=1 <1 Rise >1 Sink)

Corrosivity: (Acid or Caustic)_____

Solubility: (Soluble-Yes or No) Yes

Toxicity: (TLV, IDLH) TWA 1000 ppm (1900 mg/m^3) IDLH 3300 ppm (10%LEL)

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PPE requirements:

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Structural firefighters' protective clothing will only provide limited protection.

_____Contact Hazmat Team for assistance in interpretation of data.

_____If product is not identified or data is inconclusive, assume a worst case scenario and protect public/exposures.

_____Set Cold, Warm and Hot Zones if possible.

SAFETY DATA SHEET: ETHYL ALCOHOL, DENATURED 200 Proof

1. IDENTIFICATION

Product Name:	ETHYL ALCOHOL, DENATURED 200 Proof
Synonyms:	Denatured alcohol; Denatured ethanol; Ethanol
Formula and Formula Weight:	CH3CH2OH 46.07
Integra numbers beginning with:	E814.50
Recommended Use:	General industrial solvent
Restrictions on Use:	Personal or household use

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000

24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

2. HAZARDS IDENTIFICATION

OSHA Classification:	Hazard Category:	Hazard Statement:
Acute Toxicity - Oral	4	Harmful if swallowed.
Skin Corrosion/Irritation	2	Causes skin irritation.
Eye Damage/Irritation	2A	Causes serious eye irritation.
Specific Target Organ Toxicity (single exposure)	1	Causes damage to organs.
Flammable Liquids	2	Highly flammable liquid and vapor.

Signal Word: DANGER

Precautionary Statements

Prevention:

Keep away from heat, sparks, open flames, hot surfaces. – No smoking.
Keep container tightly closed.
Ground, bond container and receiving equipment. Use only non-sparking tools.
Use explosion-proof electrical, ventilating, lighting equipment and take precautionary measures against static discharge.
Do not breathe fume, gas, mist, vapors, spray.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, eye protection, face protection.

Response

If swallowed: Call a poison center, doctor if you feel unwell. Rinse mouth.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water, shower. If skin irritation occurs: Get medical advice, attention.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice, attention.
If exposed: Call a poison center, doctor
Specific treatment (see first aid section on this label)
Take off contaminated clothing and wash it before reuse.

Storage

Store in a well ventilated place. Keep cool.
Store locked up.

Disposal

Dispose of contents, container in accordance with all governmental regulations.

Hazards Not Otherwise Classified: No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Synonyms	CAS #	% Volume
Ethyl alcohol	Ethanol	00064-17-5	85
Isopropyl alcohol	Isopropanol; IPA; 2-Propanol	00067-63-0	09
Methyl alcohol	Methanol; Wood alcohol; Methyl hydrate	00067-56-1	05
Methyl isobutyl ketone	4-Methyl-2-pentanone; MIBK; Hexone	00108-10-1	01

4. FIRST AID MEASURES

Inhalation: Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult administer oxygen. Seek medical attention.

Eye Contact:	Flush eyes with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Seek immediate medical attention.
Skin Contact:	Remove contaminated clothing. Flush skin with plenty of water. Seek medical attention if irritation develops.
Ingestion:	Rinse mouth. Give victim large amounts of water and induce vomiting. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention.
Additional notes:	Symptoms and effects include drunkeness followed by severe systemic illness and perhaps blindness and death.

5. FIRE-FIGHTING MEASURES

Extinguishing Media:	Carbon dioxide, dry chemical or alcohol foam. Water may be ineffective.
Special Equipment and Precautions:	Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.
Specific Hazards:	Vapors may flow along surfaces to distant ignition sources and flash back. Burns with a pale blue flame which may be difficult to see under normal lighting conditions.
Hazardous combustion products:	Oxides of carbon.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures:	Remove all potential ignition sources. Prevent spread of spill. Wear full protective equipment including suitable respiratory protection. Absorb with sand or inert material. Place into suitable container for disposal.

7. HANDLING AND STORAGE

Incompatible Materials:	Incompatible with strong oxidizers. Strong inorganic acids, alkali metals, ammonia, peroxides.
Storage and Handling:	Store locked up in a cool, dry, well-ventilated flammable liquids storage area or cabinet away from incompatible materials. Keep away from heat and ignition sources. Keep containers tightly closed and protect them from physical damage. Bond and ground containers when transferring liquid. Use only non-sparking tools and take precautionary measures against static discharge. No smoking. Keep material cool.
	Keep away from heat, sparks, open flames, hot surfaces. – No smoking.
	Keep container tightly closed.
	Ground, bond container and receiving equipment. Use only non-sparking tools.
	Use explosion-proof electrical, ventilating, lighting equipment and take precautionary measures against static discharge.
	Do not breathe fume, gas, mist, vapors, spray.
	Wash thoroughly after handling.
	Do not eat, drink or smoke when using this product.
	Wear protective gloves, eye protection, face protection.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

OSHA & ACGIH Exposure Limits:

Ethyl Alcohol	OSHA TWA: 1000 ppm; 1900 mg/m3 ACGIH STEL: 1000 ppm; 1880 mg/m3
Isopropyl alcohol	OSHA TWA: 400 ppm; 980 mg/m3 ACGIH TWA: 200 ppm; 491 mg/m3 ACGIH STEL: 400 ppm; 984 mg/m3
Methyl alcohol	OSHA TWA: 200 ppm; 260 mg/m3 ACGIH TWA: 200 ppm; 262 mg/m3 ACGIH STEL: 250 ppm; 328 mg/m3
Methyl isobutyl ketone	OSHA TWA: 100 ppm; 410 mg/m3 ACGIH TWA: 20 ppm; 82 mg/m3 ACGIH STEL: 75 ppm; 307 mg/m3

Engineering Controls:	Use general or local exhaust ventilation to meet TLV and PEL requirements.
Respiratory Protection:	Respiratory protection required if airborne concentrations exceed PEL or TLV. Use a NIOSH approved chemical cartridge respirator with an organic vapor cartridge.
Skin/Eye Protective Equipment:	Safety goggles, protective clothing and gloves appropriate for the risk of exposure.
	Facilities storing or utilizing this material should have readily accessible eyewash stations and safety showers. Select respirators and other safety equipment in accordance with regulations and based upon the particular conditions of use and risk of exposure. Always use safe chemical-handling and good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Apearance:	Clear, colorless liquid
Odor:	Sweet odor
Odor Threshold:	No information available
pH:	No information available
Melting/Freezing Point:	(pure ethanol) -178 °F
Initial Boiling Point and Boiling Range:	(pure ethanol) 173 °F
Flash Point:	approx 55 °F
Evaporation Rate:	No information available
Flammability:	Flammable
Flammable or Explosive	Upper: 19 (pure ethanol)
Limits (% by volume in air)	Lower: 3.3 (pure ethanol)
Vapor Pressure:	No information available
Vapor Density:	No information available
Relative Density:	0.79 Water=1
Solubility:	Miscible with water.

Partition Coefficient: n-octanol/water	No information available
Auto-Ignition Temperature:	(pure ethanol) 685 °F
Decomposition Temperature:	No information available
Viscosity:	No information available

10. STABILITY AND REACTIVITY

Reactivity:	No information available
Stability:	Stable
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur. Vapors may form explosive mixture with air.
Conditions to Avoid:	Heat, sparks and open flame.
Incompatibles:	Incompatible with strong oxidizers. Strong inorganic acids, alkali metals, ammonia, peroxides.
Decomposition Products:	Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

Effects of Over Exposure:

Inhalation:	Harmful if inhaled. Symptoms include respiratory tract irritation, coughing, dizziness, dullness and headache. High concentrations can produce central nervous system depression, narcosis and unconsciousness.
Skin Contact:	May cause skin irritation. Prolonged contact may cause dermatitis.
Eye Contact:	Contact may be irritating to the eyes. May cause painful sensitization to light.
Ingestion:	Harmful if swallowed. Ingestion may cause headache, dizziness, nausea, vomiting, gastrointestinal irritation. Produces drunkeness followed by severe systemic illness and perhaps blindness and death.
Chronic Effects:	Chronic exposure may damage the liver, kidneys, eyes, lungs, heart, central nervous system, brain and spleen. May cause loss of appetite, weight loss, nervousness, memory loss, mental retardation.
Target Organs:	Liver, kidneys, eyes, lungs, central nervous system, brain, respiratory system, hearth, stomach and spleen.
Additional Effects:	May aggravate pre-existing skin disorders, liver disorders
Reproductive Effects:	Ethyl Alcohol has been linked to birth defects in humans.
Carcinogenicity:	
	Isopropyl alcohol is listed by the IARC as Group 3, Unclassifiable.
	Methyl isobutyl ketone is listed by the IARC as Group 2B, Possible Human Carcinogen.

Toxicity Data:

Ethyl Alcohol	LC50 (inhalation, rat)	20000	ppm/10hr
	LD50 (oral, rat)	7060	mg/kg
	LDlo (skin, rabbit)	20000	mg/kg
Isopropyl alcohol	LC50 (inhalation, rat)	16000	ppm/8H
	LD50 (oral, rat)	5000	mg/kg
	LD50 (skin, rabbit)	12800	mg/kg
Methyl alcohol	LD50 (oral, rat)	5600	mg/kg
	LDlo (oral, human)	143	mg/kg
	LD50 (skin, rabbit)	15800	mg/kg
Methyl isobutyl ketone	Irritation (skin, rabbit)	mild 500	mg/24 hr
	LC50 (inhalation, mouse)	23300	mg/m3
	LD50 (oral, rat)	2080	mg/kg

12. ECOLOGICAL INFORMATION

	Aquatic Toxicity Data:	Terrestrial Toxicity Data:
Ethyl Alcohol	LC50 Oncorhynchus mykiss: >10,000 mg/	No information available
Isopropyl alcohol	LC50 Pimephales promelas: 9640 mg/L -	No information available
Methyl alcohol	LC50 Lepomis macrocirus: 15,400 mg/L -	No information available
Methyl isobutyl ketone	LC50 Leuciscus idus melanotus: 480 mg/L	No information available

Persistence and degradability:	No information available
Bioaccumulative potential:	No information available
Mobility in soil:	No information available
Other adverse effects:	No information available

13. DISPOSAL CONSIDERATIONS

Disposal Procedures: Dispose of material and containers in accordance with all local, state and federal regulations.

14. TRANSPORTATION INFORMATION

This product is a regulated material for domestic ground transporation, per CFR Title 49.

UN Number:	UN1170
Proper Shipping Name:	Ethanol
Packing Group:	II
Hazard Class:	3
Environmental hazards:	No information available
Special precautions:	No information available

Bulk transport: No information available

15. REGULATORY INFORMATION

Ethyl Alcohol is listed in the TSCA inventory.
Isopropyl alcohol is listed in the TSCA inventory and in SARA 313.
Methyl alcohol is listed in the TSCA inventory and in SARA 313.
Methyl isobutyl ketone is listed in the TSCA inventory and in SARA 313.

16. OTHER INFORMATION

OSHA SDS #: 25602 rev 101 3/27/2015

NE = Not established, NA = Not applicable or Not available

The information presented above is offered for informational purposes only. This SDS, and the associated product, is intended for use only by technically qualified persons, and at their own discretion and risk. Since conditions and manner of use are outside the control of Integra Chemical Company, we make no warranties, either expressed or implied, and assume no liability in connection with any use of this information.

***** END OF SDS *****

Ethyl alcohol	**Formula:** CH_3CH_2OH	**CAS#:** 64-17-5	**RTECS#:** KQ6300000	**IDLH:** 3300 ppm [10%LEL]
Conversion: 1 ppm = 1.89 mg/m^3	**DOT:** 1170 127			
Synonyms/Trade Names: Alcohol, Cologne spirit, Ethanol, EtOH, Grain alcohol				
Exposure Limits: **NIOSH REL:** TWA 1000 ppm (1900 mg/m^3) **OSHA PEL:** TWA 1000 ppm (1900 mg/m^3)				**Measurement Methods (see Table 1):** **NIOSH** 1400 **OSHA** 100
Physical Description: Clear, colorless liquid with a weak, ethereal, vinous odor.				

Chemical & Physical Properties:	**Personal Protection/Sanitation (see Table 2):**	**Respirator Recommendations (see Tables 3 and 4):**
MW: 46.1 **BP:** 173°F **Sol:** Miscible **FI.P:** 55°F **IP:** 10.47 eV **Sp.Gr:** 0.79 **VP:** 44 mmHg **FRZ:** -173°F **UEL:** 19% **LEL:** 3.3% Class IB Flammable Liquid	**Skin:** Prevent skin contact **Eyes:** Prevent eye contact **Wash skin:** When contam **Remove:** When wet (flamm) **Change:** N.R.	**NIOSH/OSHA** **3300 ppm:** Sa/ScbaF **§:** ScbaF:Pd,Pp/SaF:Pd,Pp:AScba **Escape:** ScbaE

Incompatibilities and Reactivities: Strong oxidizers, potassium dioxide, bromine pentafluoride, acetyl bromide, acetyl chloride, platinum, sodium	
Exposure Routes, Symptoms, Target Organs (see Table 5): **ER:** Inh, Ing, Con **SY:** Irrit eyes, skin, nose; head, drow, lass, narco; cough; liver damage; anemia; repro, terato effects **TO:** Eyes, skin, resp sys, CNS, liver, blood, repro sys	**First Aid (see Table 6):** **Eye:** Irr immed **Skin:** Water flush prompt **Breath:** Fresh air **Swallow:** Medical attention immed

Checklist #2 - **Hazard Analysis**

Product Name: **Sodium chlorate**

Flash Point: N/A

Flammable/Explosive Range: N/A

Vapor Pressure: (water=25 mm/Hg) N/A

Vapor Density: (Air=1 <1 Rise >1 Sink) N/A

Corrosivity: (Acid or Caustic) neutral

Solubility: (Soluble-Yes or No) Yes

Toxicity: (TLV, IDLH) N/A

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PPE requirements:

- Wear positive pressure self-contained breathing apparatus (SCBA).
- Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.
- Structural firefighters' protective clothing will only provide limited protection.

_____Contact Hazmat Team for assistance in interpretation of data.

_____If product is not identified or data is inconclusive, assume a worst case scenario and protect public/exposures.

_____Set Cold, Warm and Hot Zones if possible.

SAFETY DATA SHEET: SODIUM CHLORATE

1. IDENTIFICATION

Product Name: SODIUM CHLORATE
Synonyms:
Formula and Formula Weight: NaClO3 106.44
Integra numbers beginning with: S310.50
Recommended Use: Commercial/industrial use
Restrictions on Use: No information available

INTEGRA Chemical Company
1216 6th Ave N
Kent WA 98032
Phone: 253-479-7000

24 Hour Emergency Response: CHEMTREC 800-424-9300 (Outside USA 703-527-3887)

2. HAZARDS IDENTIFICATION

OSHA Classification:	Hazard Category:	Hazard Statement:
Acute Toxicity - Oral	4	Harmful if swallowed.
Eye Damage/Irritation	2B	Causes eye irritation.
Oxidizing Solids	1	May cause fire or explosion; strong oxidizer.

Signal Word: Danger

Precautionary Statements

Prevention:

Keep away from heat.
Keep away from clothing and other combustible materials.
Take any precaution to avoid mixing with combustibles.
Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, eye protection, face protection.
Wear fire, flame resistant, retardant clothing.

Response

If swallowed: Rinse mouth. Call a poison center, doctor if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If on clothing: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
If eye irritation persists: Get medical advice, attention.
In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Disposal

Dispose of contents, container in accordance with all governmental regulations.

Hazards Not Otherwise Classified: No information available

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	Synonyms	CAS #	% Weight
Sodium chlorate		07775-09-9	100

4. FIRST AID MEASURES

Inhalation: Remove person to fresh air.
Eye Contact: Flush eyes with plenty of water. Remove contact lenses, if present and easy to do. If irritation persists, seek medical attention.
Skin Contact: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes. Seek medical attention if irritation develops.
Ingestion: Rinse mouth and give victim large quantities of water. Never give anything by mouth to an unconscious person. Seek immediate medical attention.
Additional notes: Symptoms and effects include skin, eye, respiratory tract irritation.

5. FIRE-FIGHTING MEASURES

Extinguishing Media: Water spray. Do not use fire blanket or smothering type extinguisher. Decomposition releases oxygen which supports combustion.
Special Equipment and Precautions: Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.

Specific Hazards:	Strong oxidizer. Contact with combustible or flammable materials can cause fire or explosion. May explode when shocked, exposed to heat or flame or by spotaneous chemical reaction. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
Hazardous combustion products:	May decompose to form chlorine dioxide and/or chlorine gas.

6. ACCIDENTAL RELEASE MEASURES

Spill Procedures:	Prevent spread of spill. Wear suitable protective equipment. Sweep or scoop into clean, dry disposal container. Flush spill area with water.

7. HANDLING AND STORAGE

Incompatible Materials:	Incompatible with strong acids and strong oxidizers. Organic or combustible materials, alcohols, sulfur, phosphorous and ammonia compounds.
Storage and Handling:	Store in a cool, dry, well-ventilated area dedicated to the storage of oxidizers. Keep away from incompatible materials, especially flammable or combustible materials. Keep containers tightly closed and protect them from physical damage. Protect from direct light and minimize contact with air.
	Keep away from heat.
	Keep away from clothing and other combustible materials.
	Take any precaution to avoid mixing with combustibles.
	Wash thoroughly after handling.
	Do not eat, drink or smoke when using this product.
	Wear protective gloves, eye protection, face protection.
	Wear fire, flame resistant, retardant clothing.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

OSHA & ACGIH Exposure Limits:

Sodium chlorate	None identified
Engineering Controls:	Use adequate general or local exhaust ventilation to keep fume and/or dust levels as low as possible.
Respiratory Protection:	If use generates annoying or irritating dusts, mists or vapors, use a NIOSH approved respirator with a particulate filter.
Skin/Eye Protective Equipment:	Safety goggles, protective clothing and gloves appropriate for the risk of exposure. Wear fire retardant clothing. Facilities storing or utilizing this material should have readily accessible eyewash stations and safety showers. Select respirators and other safety equipment in accordance with regulations and based upon the particular conditions of use and risk of exposure. Always use safe chemical-handling and good industrial hygiene practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Apearance:	White to pail yellow crystals
Odor:	Odorless
Odor Threshold:	Not available
pH:	Not available
Melting/Freezing Point:	248 °C
Initial Boiling Point and Boiling Range:	Not available
Flash Point:	Not available
Evaporation Rate:	Not available
Flammability:	Not available
Flammable or Explosive	Upper: Not available
Limits (% by volume in air)	Lower: Not available
Vapor Pressure:	Not available
Vapor Density:	Not available
Relative Density:	2.5
Solubility:	Soluble in water
Partition Coefficient: n-octanol/water	Not available
Auto-Ignition Temperature:	Not available
Decomposition Temperature:	300
Viscosity:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	No information available
Stability:	Stable
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur
Conditions to Avoid:	Heat, sparks and open flame. Exposure to air.
Incompatibles:	Incompatible with strong acids and strong oxidizers. Organic or combustible materials, alcohols, sulfur, phosphorous and ammonia compounds.
Decomposition Products:	May decompose to form chlorine dioxide and/or chlorine gas.

11. TOXICOLOGICAL INFORMATION

Effects of Over Exposure:

Inhalation:	Inhalation may irritate the nose, throat and upper respiratory tract.
Skin Contact:	Contact may cause skin irritation.

Eye Contact:	Contact may be irritating to the eyes.
Ingestion:	Harmful if swallowed. May produce abdominal pain, vomiting, and diarrhea. Absorption into the body results in the formation of methemoglobin, which may cause cyanosis. Onset may be delayed 2 to 4 hours or more. Ingestion of relatively large quantities may prove fatal.
Chronic Effects:	No information available
Target Organs:	Eyes, skin, blood. Kidney, liver.
Additional Effects:	No information available
Reproductive Effects:	No information available
Carcinogenicity:	None identified

Toxicity Data:

Sodium chlorate	LD50 (intraperitoneal, mouse)	596 mg/kg
	LD50 (oral, rat)	1200 mg/kg

12. ECOLOGICAL INFORMATION

	Aquatic Toxicity Data:	Terrestrial Toxicity Data:
Sodium chlorate	No information available	No information available

Persistence and degradability:	No information available
Bioaccumulative potential:	No information available
Mobility in soil:	No information available
Other adverse effects:	No information available

13. DISPOSAL CONSIDERATIONS

Disposal Procedures: Dispose of material and containers in accordance with all local, state and federal regulations.

14. TRANSPORTATION INFORMATION

This product is a regulated material for domestic ground transporation, per CFR Title 49.

UN Number:	UN1495
Proper Shipping Name:	Sodium chlorate
Packing Group:	II
Hazard Class:	5.1
Environmental hazards:	No information available
Special precautions:	No information available
Bulk transport:	No information available

15. REGULATORY INFORMATION

Sodium chlorate is listed in the TSCA inventory.

16. OTHER INFORMATION

OSHA SDS #: 26372 rev 101 3/27/2015

NE = Not established. NA = Not applicable or Not available

The information presented above is offered for informational purposes only. This SDS, and the associated product, is intended for use only by technically qualified persons, and at their own discretion and risk. Since conditions and manner of use are outside the control of Integra Chemical Company, we make no warranties, either expressed or implied, and assume no liability in connection with any use of this information

***** END OF SDS *****

Appendix F

Four Railroad Chemicals Guidelines

APPENDIX F: Four Railroad Chemical Guidelines

Some Important Tactical, Informational and Operational Guidelines for:

Sodium Chlorate

Anhydrous Ammonia

Ethanol

Bakken Crude Oil

Sodium Chlorate:

Odorless, pale yellow to white crystalline solid.

Strong Oxidizer. Contact with wood, organic matter, railroad ties, sulfuric acid may result in fires or explosions. Can increase the intensity of fires and may result in explosions.

Personnel near a spill or derailment should wear full turnouts and SCBA. Stay out of product! Avoid inhalation or contact of any dusts, vapors, smoke from fire.

Initially, isolate spill or leak area for at least 150 feet in all directions.

For a large spill, consider initial downwind evacuation for at least 330 feet.

If a railcar is involved in a fire, isolate for ½ mile in all directions and consider the initial evacuation for ½ mile in all directions due to the explosion potential.

If involved in a small fire, use water. Do not use dry chemical or foams.

If involved in a large fire, flood area from a distance with water by use of **unmanned** master streams and monitors. Do not move a railcar that has been exposed to heat until technical expertise can evaluate. Cool railcars with large quantities of water from unmanned monitors well after fire is out. If this is impossible, back out and let the fire burn.(Non-Intervention)

In case of spills, keep personnel away from the product and evaluate product contact with combustibles such as rail ties. Keep water out of the container (railcar). Leave any cleanup to railroad personnel or their contractors.

Decon, if necessary, with lots of water and contain decon "runoff".

Anhydrous Ammonia:

A clear, colorless (corrosive) gas with a strong odor. Shipped as a liquid under pressure (railcar). Contact with the liquid can cause frostbite.

Normally non-flammable outdoors but can become flammable (explosive) when confined (as in a building or structure).

Forms ammonium hydroxide, a strong corrosive (caustic) when mixed with water or moisture. Personnel should stay out of the vapors as they are highly toxic and corrosive to the skin and respiratory system.

Full turnouts with SCBA's may be necessary for personnel near but not in the leak area. Exposure to or working in and around anhydrous ammonia requires full respiratory and full protective clothing (Hazmat Team Operation).

Exposure to anhydrous ammonia can easily cause pulmonary edema and death. Can also cause corrosive burns to the skin and mucous membranes.

Stinging of the armpits, crotch, eyes, neck or other moist body areas may indicate an exposure to ammonia.

Vapors initially are lighter than air but can commonly hug the ground as they absorb moisture from the air and become heavier. Vapors have poor predictability.

Initially isolate a spill or leak 330 feet in all directions. See ERG Tables 1 and 3 – Initial Isolation and Protective Action Distances on the UN/NA 1005 datasheet.

If a railcar is involved in fire, Isolate for 1 mile in all directions and consider initial evacuation for 1 mile in all directions.

Use water fog to disperse, reduce or control vapor cloud. If possible, safely contain any residual from water fallout from these operations.

Do not direct water at the spill or source of the leak.

Ethanol: (ethyl alcohol)

A clear colorless liquid with typical odor. Vapors are heavier than air – watch low areas.

Highly flammable but highly water soluble.

Vapors are highly irritating to eyes, nose and throat.

Isolate spill or leak for 150 feet in all directions.

For a large spill or leak, consider downwind evacuation for at least 1000 feet.

If a railcar is involved in fire, isolate for ½ mile in all directions and consider an initial evacuation for ½ mile.

For small fires, use dry chemical, CO2, water spray or alcohol-resistant foam.

For large fires, use water fog or alcohol-resistant foam. **DO NOT USE STRAIGHT STREAMS!**

If the fire involves a railroad tank car, fight fire from a maximum distance or use unmanned hose streams, foam apparatus or monitors.

Be aware of operating venting devices or discoloration of the tank car. If no fire, eliminate ignition sources, dike well ahead of spill. Try to safely contain firefighting runoff.

Air monitor the area to determine concentration of vapors (flammability).

No personnel should be in a flammable atmosphere (above 10% of the LEL of 3.3%, or 0.3%).

Turnouts and SCBA's may be necessary for certain operations.

Cool flame exposed/impinged tank cars.

Adding water to a spill may raise the flashpoint.

Bakken Crude Oil:

Highly flammable form of crude oil. Flash Point less than 73° F. Has toxic components including benzene, a known carcinogen.

Vapors are highly irritating to eyes, nose and throat.

Isolate spill or leak for 150 feet in all directions.

For a large spill or leak, consider downwind evacuation for at least 1000 feet.

If a railcar is involved in fire, isolate for ½ mile in all directions and consider an initial evacuation for ½ mile.

For small fires, use dry chemical, CO2, water spray or foam.

For large fires, use water fog or alcohol-resistant foam. **DO NOT USE STRAIGHT STREAMS!**

If the fire involves a railroad tank car, fight fire from a maximum distance or use unmanned hose streams, foam apparatus or monitors.

Be aware of operating venting devices or discoloration of the tank car. If no fire,

eliminate ignition sources, dike well ahead of spill. Try to safely contain firefighting runoff.

Air monitor the area to determine concentration of vapors (flammability).

No personnel should be in a flammable atmosphere (above 10% of the LEL of 1.0% or 0.1%).

Turnouts and SCBA's may be necessary for certain operations.

Cool flame exposed/impinged tank cars.

For a large fire, order and use Foam Cache from State Fire Marshal.

Appendix G

Apparatus Inventories

Clatskanie Rural Fire Protection District 2016														
				Capacity		Hose					Foam Gallons			
Apparatus	Number	Type	Year Make	Tank	Pump	5"	3"	2 1/2"	1 3/4"	1 1/2"	1"	A	B	
ENG	481	1	2015 Pierce	1000	1500	1000	500		700		200		100	
ENG	486	1	1995 Pierce	1000	1500		1200		700		200		30	
ENG	487	1	1977 Mack	1000	1500		1200		700		200		30	
ENG	488	1	1990 Pierce	2500	1500		1200		700		200		30	
Brush	4881	IV	1978 Milatary	800	550			200		1000	1000	10		
Utility	482		2004 Ford PU											
Command			2008 Ford Ult											
Rescue	481	BLS	1990 Freightliner											
Medic	481	ALS	2005 Ford											
Medic	482	ALS	1997 Ford											
Medic	483	ALS	2015 GMC											
SQT	481	50 FT	1990 Pierce	500	1500	1000	600		700					

COLUMBIA RIVER FIRE & RESCUE A/O 7/18/2016

APPARATUS # NAME	TYPE YEAR	MAKE	TANK CAPACITY	PUMP CPCTY MAX	MASTER STREAM DEVICE	5" HOSE	3" HOSE	1 3/4" HOSE	1 1/2" HOSE	1" FORES-TRY	A FOAM	B FOAM
E494	1/II 1997	Pierce	750	1500	1250 gpm	1000'	600'	500'	300'	200'	CAF	
E472	1- 1993	Pierce	750	1250	1250 gpm	1000'	600'	500'			40 gal	
E473	1- 1993	International KME	750	1250	1250 gpm	1000'	600'	400'			20 gal	20 gal
E	1- 1998	Spartan H&W	500	1750	1250 gpm	1000'	600'	600'			20 gal	20 gal
E	1- 1998	Spartan H&W	500	1750	1250 gpm	1000'	600'	600'			20 gal	20 gal
E471	I - 2003	Pierce/Contender	1000	1500	1250 gpm	1000'	1250'	600'			50 gal	
E491	I - 2003	Pierce/Contender	1000	1500	1250 gpm	1000'	1250'	600'			50 gal	
S491	1- 1992	Peirce/Squrt 65'	500	1500	1000 gpm	900'	500'	450'	150'		20 gal	20 gal
E4724 AWD	VI - 1985	Pierce 4X4	200	450			50'	300'	100'	200'		20 gal
E4744 AWD	VI - 1994	Chevy 4X4	400	100			50'		300'	300'		5 gal
E4723 AWD	VI - 1995	Mallory 4X4	250	120					700'	500'	CAF	
E4941 AWD	VI - 1994	Chevy 4X4	400	100			50'		300'	300'		5 gal
E4721 AWD	VI - 1986	Chev 4X4	150	120				300'	300'	500'	5 gal	
WT471	I - 1985	GMC	3000	750								
WT496	I - 1987	International	2500	1250	1250 gpm		500'		100'	200'		
WT494	I - 1987	International	2500	1250	1250 gpm		500'		100'	200'		
WT491	I - 1984	Ford	3000	1000			500'		100'	200'		
R471	1993	Freightliner	RESCUE									
M471	III - 2008	Ford	Ambulance									
M471Y	III - 2008	Ford/Lifeline	Ambulance									
M491Z	III- 2005	Ford/Lifeline	Ambulance									
M471X	III - 2003	Ford	Ambulance									
M472	III - 2011	GMC	Ambulance									
M491Z	I - 2000	Ford 4X4	Ambulance									
M471Z	I- 1997	Chev 4X4	Ambulance									
4792	1990	Trailer Port-a-pot	SUPPORT									
U491	2000	Chev Suburban	SUPPORT									
4981	1998	Jeep Cherokee	STAFFF									
U471	1999	Jeep Cherokee	STAFF									
U494	1999	Jeep Cherokee	STAFF									
C43	2003	Chev Tahoe	STAFF									
4701	2005	Chev 1500 HD	STAFF									
4702	2003	Suburban	STAFF									
4703	2007	Expedition	STAFF									
4750	2008	GMC K3500	Mntnce									
4751	1999	Chevy 4X4	Mntnce									

SCAPPOOSE FIRE DISTRICT A/O 8/16/2016													
APPARATUS #/NAME	TYPE YEAR	MAKE	TANK CAPACITY	PUMP CAPACITY MAX.	MASTER STREAM DEVICE	5" HOSE	3" HOSE	1 3/4" HOSE	1 1/2" HOSE	1" FORESTRY	A FOAM	B FOAM
ENG 431	I 97	FREIGHTLINER	750	1500	1250 GPM	1000	600	500	300	400	15 GAL	15 GAL
ENG 432	I 89	SPARTAN	1000	1500	1200 GPM	1000	600	650	0	300		60 GAL
ENG 435	I 97	FREIGHTLINER	750	1500	1250 GPM	1000	600	500	300	400	15 GAL	15 GAL
ENG 436	II 88	FORD	1000	1000		1000	600	500	400	400		
Tower 431	82	Sutphen platform	100 foot		1250 GPM							
E4320	VI 95	GMC 4X4	200	120		0	0	0	400	300	X	
E4330	VI 99	F550 4X4	300	120		N/A	N/A	N/A	400	300	X	
E4350	III 96	F650	500	180		0	0	0	1200	800	X	
WT 431	I 97	FREIGHTLINER	3000	750		0	300	350	0	0		
WT 435	I 81	WHITE	3000	750		0	300	150	0	0		
R 431	1993	FORD 4X4	RESCUE	N/A		N/A	N/A	N/A	N/A	N/A		
U 431	2006	DODGE Sprinter	LOGISTICS	N/A		N/A	N/A	N/A	N/A	N/A		
M 431	2015	GMC	AMBULANCE	N/A		N/A	N/A	N/A	N/A	N/A		
M 432	2008	GMC	AMBULANCE	N/A		N/A	N/A	N/A	N/A	N/A		
M 433	1999	GMC I 4X4	AMBULANCE	N/A		N/A	N/A	N/A	N/A	N/A		
4380	2005	SUBURBAN 4X4										
4381	2005	SUBURBAN 4X4										
4382	1996	GMC 4X4 PU										
4383	2000	Impala	4 door sedan									
4385	2015	GMC PU	COMMAND									
FIREBOAT 43	2004	FIREBOAT		2000	2000 GPM							
MCI Trailer		50-75 Patient										

Appendix H

ICS Forms

201 Incident briefing
202 Incident objectives
203 Organization Assignment List
204 Assignment list
205 Incident radio comm plan
206 Medical plan
207 Incident Organization chart
208 safety message / plan
209 Incident status summary
210 Resource status summary
211 Incident check in
213 General message
214 Activity log
215 Operational plng worksheet
215A Incident action plan safety analysis

INCIDENT BRIEFING (ICS 201)

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

4. Map/Sketch (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)**:**

5. Situation Summary and Health and Safety Briefing (for briefings or transfer of command)**:** Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.

6. Prepared by: Name:_____ Position/Title:_____ Signature:

ICS 201, Page 1 Date/Time:

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

7. Current and Planned Objectives:

8. Current and Planned Actions, Strategies, and Tactics:

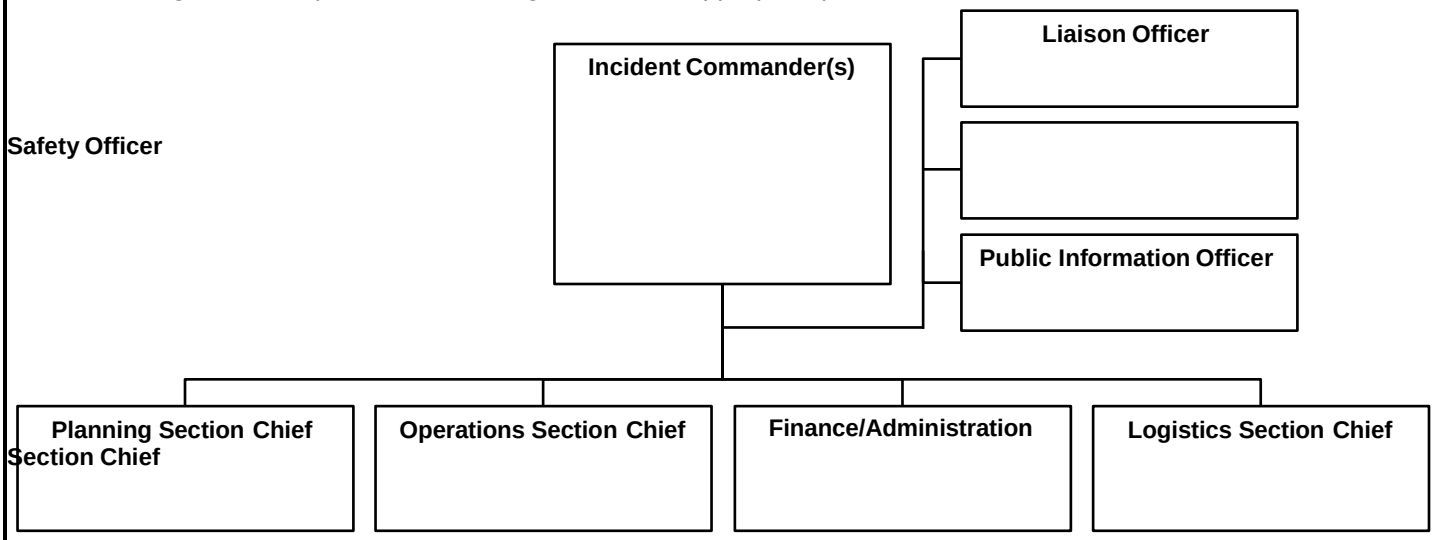
Time:	Actions:

6. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 201, Page 2 Date/Time: _____

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

9. Current Organization (fill in additional organization as appropriate)**:**



6. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 201, Page 3 Date/Time: _____

1. Incident Name:	2. Incident Number:	3. Date/Time Initiated: Date: Time:

10. Resource Summary:

Resource	Resource Identifier	Date/Time Ordered	ETA	Arrived	Notes (location/assignment/status)
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	
				☐	

6. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 201, Page 4 Date/Time: _____

ICS 201
Incident Briefing

Purpose. The Incident Briefing (ICS 201) provides the Incident Commander (and the Command and General Staffs) with basic information regarding the incident situation and the resources allocated to the incident. In addition to a briefing document, the ICS 201 also serves as an initial action worksheet. It serves as a permanent record of the initial response to the incident.

Preparation. The briefing form is prepared by the Incident Commander for presentation to the incoming Incident Commander along with a more detailed oral briefing.

Distribution. Ideally, the ICS 201 is duplicated and distributed before the initial briefing of the Command and General Staffs or other responders as appropriate. The "Map/Sketch" and "Current and Planned Actions, Strategies, and Tactics" sections (pages 1–2) of the briefing form are given to the Situation Unit, while the "Current Organization" and "Resource Summary" sections (pages 3–4) are given to the Resources Unit.

Notes:

- The ICS 201 can serve as part of the initial Incident Action Plan (IAP).
- If additional pages are needed for any form page, use a blank ICS 201 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Initiated** • Date, Time	Enter date initiated (month/day/year) and time initiated (using the 24-hour clock).
4	**Map/Sketch** (include sketch, showing the total area of operations, the incident site/area, impacted and threatened areas, overflight results, trajectories, impacted shorelines, or other graphics depicting situational status and resource assignment)	Show perimeter and other graphics depicting situational status, resource assignments, incident facilities, and other special information on a map/sketch or with attached maps. Utilize commonly accepted ICS map symbology. If specific geospatial reference points are needed about the incident's location or area outside the ICS organization at the incident, that information should be submitted on the Incident Status Summary (ICS 209). North should be at the top of page unless noted otherwise.
5	**Situation Summary and Health and Safety Briefing (**for briefings or transfer of command): Recognize potential incident Health and Safety Hazards and develop necessary measures (remove hazard, provide personal protective equipment, warn people of the hazard) to protect responders from those hazards.	Self-explanatory.
6	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
7	**Current and Planned Objectives**	Enter the objectives used on the incident and note any specific problem areas.

Block Number	Block Title	Instructions
8	**Current and Planned Actions, Strategies, and Tactics** - Time - Actions	Enter the current and planned actions, strategies, and tactics and time they may or did occur to attain the objectives. If additional pages are needed, use a blank sheet or another ICS 201 (Page 2), and adjust page numbers accordingly.
9	**Current Organization** (fill in additional organization as appropriate) - Incident Commander(s) - Liaison Officer - Safety Officer - Public Information Officer - Planning Section Chief - Operations Section Chief - Finance/Administration Section Chief - Logistics Section Chief	• Enter on the organization chart the names of the individuals assigned to each position. • Modify the chart as necessary, and add any lines/spaces needed for Command Staff Assistants, Agency Representatives, and the organization of each of the General Staff Sections. • If Unified Command is being used, split the Incident Commander box. • Indicate agency for each of the Incident Commanders listed if Unified Command is being used.
10	**Resource Summary**	Enter the following information about the resources allocated to the incident. If additional pages are needed, use a blank sheet or another ICS 201 (Page 4), and adjust page numbers accordingly.
	• Resource	Enter the number and appropriate category, kind, or type of resource ordered.
	• Resource Identifier	Enter the relevant agency designator and/or resource designator (if any).
	• Date/Time Ordered	Enter the date (month/day/year) and time (24-hour clock) the resource was ordered.
	• ETA	Enter the estimated time of arrival (ETA) to the incident (use 24-hour clock).
	• Arrived	Enter an “X” or a checkmark upon arrival to the incident.
	• Notes (location/ assignment status)	Enter notes such as the assigned location of the resource and/or the actual assignment and status.

INCIDENT OBJECTIVES (ICS 202)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Objective(s):

4. Operational Period Command Emphasis:

General Situational Awareness

5. Site Safety Plan Required? Yes ☐ No ☐

Approved Site Safety Plan(s) Located at:

6. Incident Action Plan (the items checked below are included in this Incident Action Plan)**:**

☐ ICS 203	☐ ICS 207	Other Attachments:
☐ ICS 204	☐ ICS 208	☐ _____
☐ ICS 205	☐ Map/Chart	☐ _____
☐ ICS 205A	☐ Weather Forecast/Tides/Currents	☐ _____
☐ ICS 206		☐ _____

7. Prepared by: Name:_____ Position/Title:_____ Signature: _____

8. Approved by Incident Commander: Name:_____ Signature: _____

ICS 202	**IAP Page** _____	Date/Time: _____

ICS 202
Incident Objectives

Purpose. The Incident Objectives (ICS 202) describes the basic incident strategy, incident objectives, command emphasis/priorities, and safety considerations for use during the next operational period.

Preparation. The ICS 202 is completed by the Planning Section following each Command and General Staff meeting conducted to prepare the Incident Action Plan (IAP). In case of a Unified Command, one Incident Commander (IC) may approve the ICS 202. If additional IC signatures are used, attach a blank page.

Distribution. The ICS 202 may be reproduced with the IAP and may be part of the IAP and given to all supervisory personnel at the Section, Branch, Division/Group, and Unit levels. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 202 is part of the IAP and can be used as the opening or cover page.
- If additional pages are needed, use a blank ICS 202 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident. If needed, an incident number can be added.
2	**Operational Period** 9. Date and Time From 10. Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Objective(s)**	Enter clear, concise statements of the objectives for managing the response. Ideally, these objectives will be listed in priority order. These objectives are for the incident response for this operational period as well as for the duration of the incident. Include alternative and/or specific tactical objectives as applicable. Objectives should follow the SMART model or a similar approach: **S**pecific – Is the wording precise and unambiguous? **M**easurable – How will achievements be measured? **A**ction-oriented – Is an action verb used to describe expected accomplishments? **R**ealistic – Is the outcome achievable with given available resources? **T**ime-sensitive – What is the timeframe?
4	**Operational Period Command Emphasis**	Enter command emphasis for the operational period, which may include tactical priorities or a general weather forecast for the operational period. It may be a sequence of events or order of events to address. This is not a narrative on the objectives, but a discussion about where to place emphasis if there are needs to prioritize based on the Incident Commander's or Unified Command's direction. Examples: Be aware of falling debris, secondary explosions, etc.
	General Situational Awareness	General situational awareness may include a weather forecast, incident conditions, and/or a general safety message. If a safety message is included here, it should be reviewed by the Safety Officer to ensure it is in alignment with the Safety Message/Plan (ICS 208).
5	**Site Safety Plan Required?** Yes ☐ No ☐	Safety Officer should check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter the location of the approved Site Safety Plan(s).

Block Number	Block Title	Instructions
6	**Incident Action Plan** (the items checked below are included in this Incident Action Plan): ☐ ICS 203 ☐ ICS 204 ☐ ICS 205 ☐ ICS 205A ☐ ICS 206 ☐ ICS 207 ☐ ICS 208 ☐ Map/Chart ☐ Weather Forecast/ Tides/Currents Other Attachments:	Check appropriate forms and list other relevant documents that are included in the IAP. ☐ ICS 203 – Organization Assignment List ☐ ICS 204 – Assignment List ☐ ICS 205 – Incident Radio Communications Plan ☐ ICS 205A – Communications List ☐ ICS 206 – Medical Plan ☐ ICS 207 – Incident Organization Chart ☐ ICS 208 – Safety Message/Plan
7	**Prepared by** • Name • Position/Title • Signature	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by Incident Commander** • Name • Signature • Date/Time	In the case of a Unified Command, one IC may approve the ICS 202. If additional IC signatures are used, attach a blank page.

ORGANIZATION ASSIGNMENT LIST (ICS 203)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:

3. Incident Commander(s) and Command Staff:	
IC/UCs	
Deputy	
Safety Officer	
Public Info. Officer	
Liaison Officer	

4. Agency/Organization Representatives:	
Agency/Organization	Name

5. Planning Section:	
Chief	
Deputy	
Resources Unit	
Situation Unit	
Documentation Unit	
Demobilization Unit	
Technical Specialists	

6. Logistics Section:	
Chief	
Deputy	
Support Branch	
Director	
Supply Unit	
Facilities Unit	
Ground Support Unit	
Service Branch	
Director	
Communications Unit	
Medical Unit	
Food Unit	

7. Operations Section:		
Chief		
Deputy		
Staging Area		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Branch		
Branch Director		
Deputy		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Division/Group		
Air Operations Branch		
Air Ops Branch Dir.		

8. Finance/Administration Section:	
Chief	
Deputy	
Time Unit	
Procurement Unit	
Comp/Claims Unit	
Cost Unit	

9. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 203	IAP Page _____	Date/Time: _____

ICS 203
Organization Assignment List

Purpose. The Organization Assignment List (ICS 203) provides ICS personnel with information on the units that are currently activated and the names of personnel staffing each position/unit. It is used to complete the Incident Organization Chart (ICS 207) which is posted on the Incident Command Post display. An actual organization will be incident or event-specific. **Not all positions need to be filled.** Some blocks may contain more than one name. The size of the organization is dependent on the magnitude of the incident, and can be expanded or contracted as necessary.

Preparation. The Resources Unit prepares and maintains this list under the direction of the Planning Section Chief. Complete only the blocks for the positions that are being used for the incident. If a trainee is assigned to a position, indicate this with a "T" in parentheses behind the name (e.g., "A. Smith (T)").

Distribution. The ICS 203 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 203 serves as part of the IAP.
- If needed, more than one name can be put in each block by inserting a slash.
- If additional pages are needed, use a blank ICS 203 and repaginate as needed.
- ICS allows for organizational flexibility, so the Intelligence/Investigations Function can be embedded in several different places within the organizational structure.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** d. Date and Time From e. Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Incident Commander(s) and Command Staff** • IC/UCs • Deputy • Safety Officer • Public Information Officer • Liaison Officer	Enter the names of the Incident Commander(s) and Command Staff. Label Assistants to Command Staff as such (for example, "Assistant Safety Officer"). For all individuals, use at least the first initial and last name. For Unified Command, also include agency names.
4	**Agency/Organization Representatives** • Agency/Organization • Name	Enter the agency/organization names and the names of their representatives. For all individuals, use at least the first initial and last name.
5	**Planning Section** • Chief • Deputy • Resources Unit • Situation Unit • Documentation Unit • Demobilization Unit • Technical Specialists	Enter the name of the Planning Section Chief, Deputy, and Unit Leaders after each position title. List Technical Specialists with an indication of specialty. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.

Block Number	Block Title	Instructions
6	**Logistics Section** • Chief • Deputy **Support Branch** • Director • Supply Unit • Facilities Unit • Ground Support Unit **Service Branch** • Director • Communications Unit • Medical Unit • Food Unit	Enter the name of the Logistics Section Chief, Deputy, Branch Directors, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
7	**Operations Section** • Chief • Deputy • Staging Area **Branch** • Branch Director • Deputy • Division/Group **Air Operations Branch** • Air Operations Branch Director	Enter the name of the Operations Section Chief, Deputy, Branch Director(s), Deputies, and personnel staffing each of the listed positions. For Divisions/Groups, enter the Division/Group identifier in the left column and the individual's name in the right column. Branches and Divisions/Groups may be named for functionality or by geography. For Divisions/Groups, indicate Division/Group Supervisor. Use an additional page if more than three Branches are activated. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
8	**Finance/Administration Section** • Chief • Deputy • Time Unit • Procurement Unit • Compensation/Claims Unit • Cost Unit	Enter the name of the Finance/Administration Section Chief, Deputy, and Unit Leaders after each position title. If there is a shift change during the specified operational period, list both names, separated by a slash. For all individuals, use at least the first initial and last name.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

ASSIGNMENT LIST (ICS 204)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:	**3.** **Branch:** **Division:** **Group:** **Staging Area:**

4. Operations Personnel: Name Contact Number(s)

Operations Section Chief: _____

Branch Director: _____

Division/Group Supervisor: _____

5. Resources Assigned:

Resource Identifier	Leader	# of Persons	Contact (e.g., phone, pager, radio frequency, etc.)	Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information

6. Work Assignments:

7. Special Instructions:

8. Communications (radio and/or phone contact numbers needed for this assignment)**:**

Name/Function	Primary Contact: indicate cell, pager, or radio (frequency/system/channel)
/	
/	
/	
/	

9. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 204	**IAP Page** _____	Date/Time: _____

ICS 204
Assignment List

Purpose. The Assignment List(s) (ICS 204) informs Division and Group supervisors of incident assignments. Once the Command and General Staffs agree to the assignments, the assignment information is given to the appropriate Divisions and Groups.

Preparation. The ICS 204 is normally prepared by the Resources Unit, using guidance from the Incident Objectives (ICS 202), Operational Planning Worksheet (ICS 215), and the Operations Section Chief. It must be approved by the Incident Commander, but may be reviewed and initialed by the Planning Section Chief and Operations Section Chief as well.

Distribution. The ICS 204 is duplicated and attached to the ICS 202 and given to all recipients as part of the Incident Action Plan (IAP). In some cases, assignments may be communicated via radio/telephone/fax. All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 204 details assignments at Division and Group levels and is part of the IAP.
- Multiple pages/copies can be used if needed.
- If additional pages are needed, use a blank ICS 204 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch** **Division** **Group** **Staging Area**	This block is for use in a large IAP for reference only. Write the alphanumeric abbreviation for the Branch, Division, Group, and Staging Area (e.g., "Branch 1," "Division D," "Group 1A") in large letters for easy referencing.
4	**Operations Personnel** • Name, Contact Number(s) – Operations Section Chief – Branch Director – Division/Group Supervisor	Enter the name and contact numbers of the Operations Section Chief, applicable Branch Director(s), and Division/Group Supervisor(s).
5	**Resources Assigned**	Enter the following information about the resources assigned to the Division or Group for this period:
	• Resource Identifier	The identifier is a unique way to identify a resource (e.g., ENG-13, IA-SCC-413). If the resource has been ordered but no identification has been received, use TBD (to be determined).
	• Leader	Enter resource leader's name.
	• # of Persons	Enter total number of persons for the resource assigned, including the leader.
	• Contact (e.g., phone, pager, radio frequency, etc.)	Enter primary means of contacting the leader or contact person (e.g., radio, phone, pager, etc.). Be sure to include the area code when listing a phone number.
5 (continued)	• Reporting Location, Special Equipment and Supplies, Remarks, Notes, Information	Provide special notes or directions specific to this resource. If required, add notes to indicate: (1) specific location/time where the resource should report or be dropped off/picked up; (2) special equipment and supplies that will be used or needed; (3) whether or not the resource received briefings; (4) transportation needs; or (5) other information.

Block Number	Block Title	Instructions
6	**Work Assignments**	Provide a statement of the tactical objectives to be achieved within the operational period by personnel assigned to this Division or Group.
7	**Special Instructions**	Enter a statement noting any safety problems, specific precautions to be exercised, dropoff or pickup points, or other important information.
8	**Communications** (radio and/or phone contact numbers needed for this assignment) • Name/Function • Primary Contact: indicate cell, pager, or radio (frequency/system/channel)	Enter specific communications information (including emergency numbers) for this Branch/Division/Group. If radios are being used, enter function (command, tactical, support, etc.), frequency, system, and channel from the Incident Radio Communications Plan (ICS 205). Phone and pager numbers should include the area code and any satellite phone specifics. In light of potential IAP distribution, use sensitivity when including cell phone number. Add a secondary contact (phone number or radio) if needed.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT RADIO COMMUNICATIONS PLAN (ICS 205)

1. Incident Name:	2. Date/Time Prepared: Date: Time:	3. Operational Period: Date From: Date To: Time From: Time To:

4. Basic Radio Channel Use:

Zone Grp.	Ch #	Function	Channel Name/Trunked Radio System Talkgroup	Assignment	RX Freq N or W	RX Tone/NAC	TX Freq N or W	TX Tone/NAC	Mode (A, D, or M)	Remarks

5. Special Instructions:

6. Prepared by (Communications Unit Leader)**:** Name:_____ Signature: _____

ICS 205	IAP Page _____	Date/Time: _____

ICS 205
Incident Radio Communications Plan

Purpose. The Incident Radio Communications Plan (ICS 205) provides information on all radio frequency or trunked radio system talkgroup assignments for each operational period. The plan is a summary of information obtained about available radio frequencies or talkgroups and the assignments of those resources by the Communications Unit Leader for use by incident responders. Information from the Incident Radio Communications Plan on frequency or talkgroup assignments is normally placed on the Assignment List (ICS 204).

Preparation. The ICS 205 is prepared by the Communications Unit Leader and given to the Planning Section Chief for inclusion in the Incident Action Plan.

Distribution. The ICS 205 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit. Information from the ICS 205 is placed on Assignment Lists.

Notes:

- The ICS 205 is used to provide, in one location, information on all radio frequency assignments down to the Division/Group level for each operational period.
- The ICS 205 serves as part of the IAP.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Date/Time Prepared**	Enter date prepared (month/day/year) and time prepared (using the 24-hour clock).
3	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
4	**Basic Radio Channel Use**	Enter the following information about radio channel use:
	Zone Group	
	Channel Number	Use at the Communications Unit Leader's discretion. Channel Number (Ch #) may equate to the channel number for incident radios that are programmed or cloned for a specific Communications Plan, or it may be used just as a reference line number on the ICS 205 document.
	Function	Enter the Net function each channel or talkgroup will be used for (Command, Tactical, Ground-to-Air, Air-to-Air, Support, Dispatch).
	Channel Name/Trunked Radio System Talkgroup	Enter the nomenclature or commonly used name for the channel or talk group such as the National Interoperability Channels which follow DHS frequency Field Operations Guide (FOG).
	Assignment	Enter the name of the ICS Branch/Division/Group/Section to which this channel/talkgroup will be assigned.
	RX (Receive) Frequency (N or W)	Enter the Receive Frequency (RX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an "N" designating narrowband or a "W" designating wideband emissions. The name of the specific trunked radio system with which the talkgroup is associated may be entered across all fields on the ICS 205 normally used for conventional channel programming information.
	RX Tone/NAC	Enter the Receive Continuous Tone Coded Squelch System (CTCSS) subaudible tone (RX Tone) or Network Access Code (RX NAC) for the receive frequency as the mobile or portable subscriber would be programmed.

Block Number	Block Title	Instructions
4 (continued)	TX (Transmit) Frequency (N or W)	Enter the Transmit Frequency (TX Freq) as the mobile or portable subscriber would be programmed using xxx.xxxx out to four decimal places, followed by an "N" designating narrowband or a "W" designating wideband emissions.
	TX Tone/NAC	Enter the Transmit Continuous Tone Coded Squelch System (CTCSS) subaudible tone (TX Tone) or Network Access Code (TX NAC) for the transmit frequency as the mobile or portable subscriber would be programmed.
	Mode (A, D, or M)	Enter "A" for analog operation, "D" for digital operation, or "M" for mixed mode operation.
	Remarks	Enter miscellaneous information concerning repeater locations, information concerning patched channels or talkgroups using links or gateways, etc.
5	**Special Instructions**	Enter any special instructions (e.g., using cross-band repeaters, secure-voice, encoders, private line (PL) tones, etc.) or other emergency communications needs). If needed, also include any special instructions for handling an incident within an incident.
6	**Prepared by** (Communications Unit Leader) • Name • Signature • Date/Time	Enter the name and signature of the person preparing the form, typically the Communications Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).

COMMUNICATIONS LIST (ICS 205A)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Basic Local Communications Information:

Incident Assigned Position	Name (Alphabetized)	Method(s) of Contact (phone, pager, cell, etc.)

4. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 205A	**IAP Page** _____	Date/Time: _____

ICS 205A
Communications List

Purpose. The Communications List (ICS 205A) records methods of contact for incident personnel. While the Incident Radio Communications Plan (ICS 205) is used to provide information on all radio frequencies down to the Division/Group level, the ICS 205A indicates all methods of contact for personnel assigned to the incident (radio frequencies, phone numbers, pager numbers, etc.), and functions as an incident directory.

Preparation. The ICS 205A can be filled out during check-in and is maintained and distributed by Communications Unit personnel. This form should be updated each operational period.

Distribution. The ICS 205A is distributed within the ICS organization by the Communications Unit, and posted as necessary. All completed original forms must be given to the Documentation Unit. If this form contains sensitive information such as cell phone numbers, it should be clearly marked in the header that it contains sensitive information and is not for public release.

Notes:

- The ICS 205A is an optional part of the Incident Action Plan (IAP).
- This optional form is used in conjunction with the ICS 205.
- If additional pages are needed, use a blank ICS 205A and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Basic Local Communications Information**	Enter the communications methods assigned and used for personnel by their assigned ICS position.
	• Incident Assigned Position	Enter the ICS organizational assignment.
	• Name	Enter the name of the assigned person.
	• Method(s) of Contact (phone, pager, cell, etc.)	For each assignment, enter the radio frequency and contact number(s) to include area code, etc. If applicable, include the vehicle license or ID number assigned to the vehicle for the incident (e.g., HAZMAT 1, etc.).
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

MEDICAL PLAN (ICS 206)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Medical Aid Stations:

Name	Location	Contact Number(s)/Frequency	Paramedics on Site?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

4. Transportation (indicate air or ground)**:**

Ambulance Service	Location	Contact Number(s)/Frequency	Level of Service
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS
			☐ ALS ☐ BLS

5. Hospitals:

Hospital Name	Address, Latitude & Longitude if Helipad	Contact Number(s)/ Frequency	Travel Time		Trauma Center	Burn Center	Helipad
			Air	Ground			
					☐ Yes Level: _____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: _____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: _____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: _____	☐ Yes ☐ No	☐ Yes ☐ No
					☐ Yes Level: _____	☐ Yes ☐ No	☐ Yes ☐ No

6. Special Medical Emergency Procedures:

☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.

7. Prepared by (Medical Unit Leader)**:** Name:_____ Signature: _____

8. Approved by (Safety Officer)**:** Name:_____ Signature: _____

ICS 206	**IAP Page** _____	Date/Time: _____

ICS 206
Medical Plan

Purpose. The Medical Plan (ICS 206) provides information on incident medical aid stations, transportation services, hospitals, and medical emergency procedures.

Preparation. The ICS 206 is prepared by the Medical Unit Leader and reviewed by the Safety Officer to ensure ICS coordination. If aviation assets are utilized for rescue, coordinate with Air Operations.

Distribution. The ICS 206 is duplicated and attached to the Incident Objectives (ICS 202) and given to all recipients as part of the Incident Action Plan (IAP). Information from the plan pertaining to incident medical aid stations and medical emergency procedures may be noted on the Assignment List (ICS 204). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 206 serves as part of the IAP.
- This form can include multiple pages.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Medical Aid Stations**	Enter the following information on the incident medical aid station(s):
	• Name	Enter name of the medical aid station.
	• Location	Enter the location of the medical aid station (e.g., Staging Area, Camp Ground).
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the medical aid station(s).
	• Paramedics on Site? ☐ Yes ☐ No	Indicate (yes or no) if paramedics are at the site indicated.
4	**Transportation** (indicate air or ground)	Enter the following information for ambulance services available to the incident:
	• Ambulance Service	Enter name of ambulance service.
	• Location	Enter the location of the ambulance service.
	• Contact Number(s)/Frequency	Enter the contact number(s) and frequency for the ambulance service.
	• Level of Service ☐ ALS ☐ BLS	Indicate the level of service available for each ambulance, either ALS (Advanced Life Support) or BLS (Basic Life Support).

Block Number	Block Title	Instructions
5	**Hospitals**	Enter the following information for hospital(s) that could serve this incident:
	• Hospital Name	Enter hospital name and identify any predesignated medivac aircraft by name a frequency.
	• Address, Latitude & Longitude if Helipad	Enter the physical address of the hospital and the latitude and longitude if the hospital has a helipad.
	• Contact Number(s)/ Frequency	Enter the contact number(s) and/or communications frequency(s) for the hospital.

	• Travel Time
	  • Air
	  • Ground
		Enter the travel time by air and ground from the incident to the hospital.

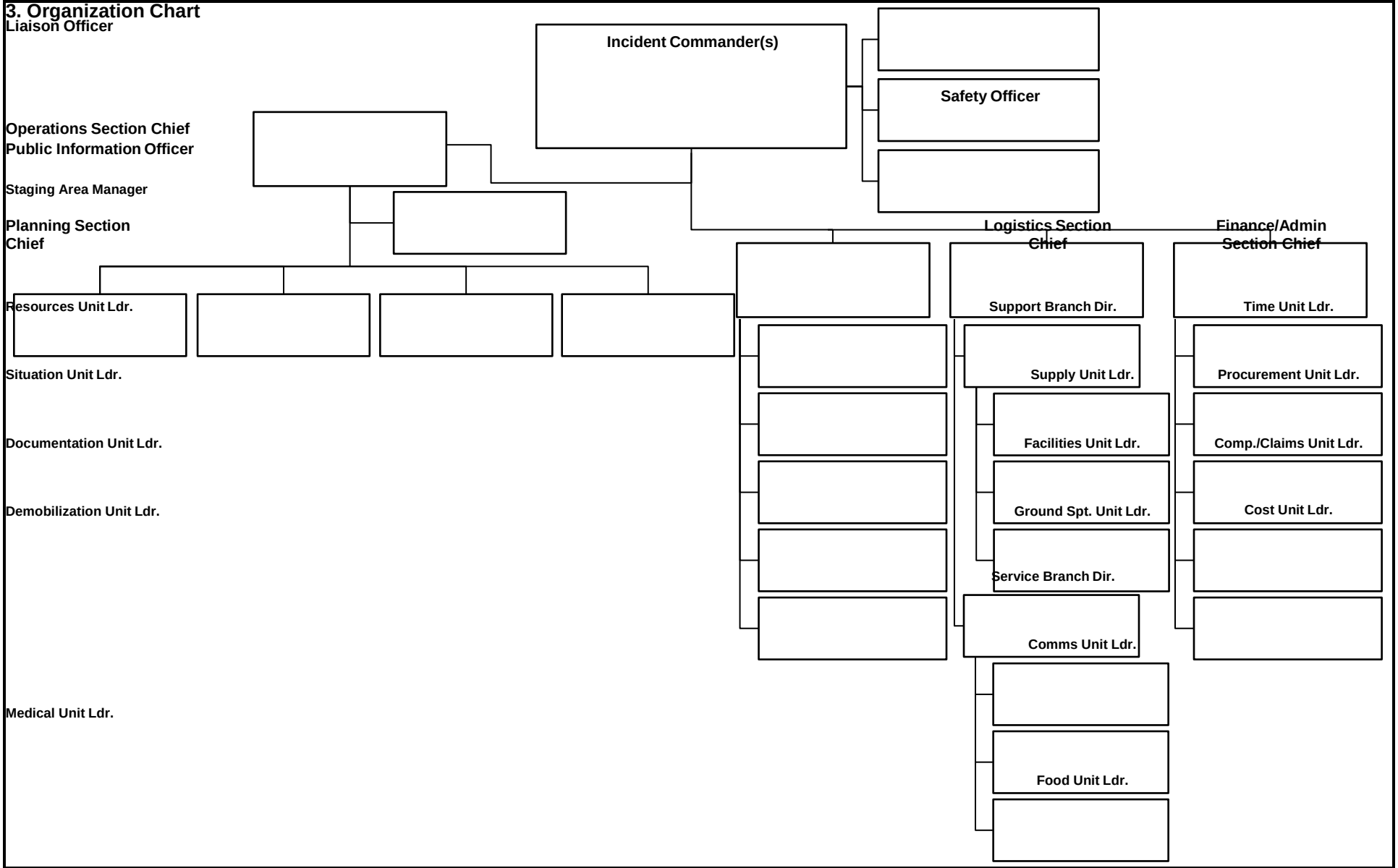
	• Trauma Center ☐ Yes Level:_____	Indicate yes and the trauma level if the hospital has a trauma center.
	• Burn Center ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a burn center.
	• Helipad ☐ Yes ☐ No	Indicate (yes or no) if the hospital has a helipad. Latitude and Longitude data format need to compliment Medical Evacuation Helicopters and Medical Air Resources
6	**Special Medical Emergency Procedures**	Note any special emergency instructions for use by incident personnel, including (1) who should be contacted, (2) how should they be contacted; and (3) who manages an incident within an incident due to a rescue, accident, etc. Include procedures for how to report medical emergencies.
	☐ Check box if aviation assets are utilized for rescue. If assets are used, coordinate with Air Operations.	Self explanatory. Incident assigned aviation assets should be included in ICS 220.
7	**Prepared by** (Medical Unit Leader) • Name • Signature	Enter the name and signature of the person preparing the form, typically the Medical Unit Leader. Enter date (month/day/year) and time prepared (24-hour clock).
8	**Approved by** (Safety Officer) • Name • Signature • Date/Time	Enter the name of the person who approved the plan, typically the Safety Officer. Enter date (month/day/year) and time reviewed (24-hour clock).

INCIDENT ORGANIZATION CHART (ICS 207)

1. Incident Name:

2. Operational Period: Date From: Date To:
Time From: Time To:

3. Organization Chart



ICS 207 **IAP Page ____** **4. Prepared by:** Name:_____ Position/Title:_____ Signature:_____ Date/Time: _____

ICS 207
Incident Organization Chart

Purpose. The Incident Organization Chart (ICS 207) provides a **visual wall chart** depicting the ICS organization position assignments for the incident. The ICS 207 is used to indicate what ICS organizational elements are currently activated and the names of personnel staffing each element. An actual organization will be event-specific. The size of the organization is dependent on the specifics and magnitude of the incident and is scalable and flexible. Personnel responsible for managing organizational positions are listed in each box as appropriate.

Preparation. The ICS 207 is prepared by the Resources Unit Leader and reviewed by the Incident Commander. Complete only the blocks where positions have been activated, and add additional blocks as needed, especially for Agency Representatives and all Operations Section organizational elements. For detailed information about positions, consult the NIMS ICS Field Operations Guide. The ICS 207 is intended to be used as a wall-size chart and printed on a plotter for better visibility. A chart is completed for each operational period, and updated when organizational changes occur.

Distribution. The ICS 207 is intended to be **wall mounted** at Incident Command Posts and other incident locations as needed, and is not intended to be part of the Incident Action Plan (IAP). All completed original forms must be given to the Documentation Unit.

Notes:

- The ICS 207 is intended to be **wall mounted** (printed on a plotter). Document size can be modified based on individual needs.
- Also available as 8½ x 14 (legal size) chart.
- ICS allows for organizational flexibility, so the Intelligence/Investigative Function can be embedded in several different places within the organizational structure.
- Use additional pages if more than three branches are activated. Additional pages can be added based on individual need (such as to distinguish more Division/Groups and Branches as they are activated).

Block Number	Block Title	Instructions
1	**Incident Name**	Print the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Organization Chart**	• Complete the incident organization chart. • For all individuals, use at least the first initial and last name. • List agency where it is appropriate, such as for Unified Commanders. • If there is a shift change during the specified operational period, list both names, separated by a slash.
4	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

SAFETY MESSAGE/PLAN (ICS 208)

1. Incident Name:	2. Operational Period: Date From: Date To: Time From: Time To:

3. Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan:

4. Site Safety Plan Required? Yes ☐ No ☐
Approved Site Safety Plan(s) Located At:

5. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 208	IAP Page _____	Date/Time: _____

ICS 208
Safety Message/Plan

Purpose. The Safety Message/Plan (ICS 208) expands on the Safety Message and Site Safety Plan.

Preparation. The ICS 208 is an optional form that may be included and completed by the Safety Officer for the Incident Action Plan (IAP).

Distribution. The ICS 208, if developed, will be reproduced with the IAP and given to all recipients as part of the IAP. All completed original forms must be given to the Documentation Unit.

Notes:
- The ICS 208 may serve (optionally) as part of the IAP.
- Use additional copies for continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Safety Message/Expanded Safety Message, Safety Plan, Site Safety Plan**	Enter clear, concise statements for safety message(s), priorities, and key command emphasis/decisions/directions. Enter information such as known safety hazards and specific precautions to be observed during this operational period. If needed, additional safety message(s) should be referenced and attached.
4	**Site Safety Plan Required?** Yes ☐ No ☐	Check whether or not a site safety plan is required for this incident.
	Approved Site Safety Plan(s) Located At	Enter where the approved Site Safety Plan(s) is located.
5	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT STATUS SUMMARY (ICS 209)

*1. Incident Name:			2. Incident Number:	
*3. Report Version (check one box on left): ☐ Initial ☐ Update ☐ Final Rpt # (if used):	*4. Incident Commander(s) & Agency or Organization:		5. Incident Management Organization:	*6. Incident Start Date/Time: Date: Time: Time Zone:
7. Current Incident Size or Area Involved (use unit label – e.g., "sq mi," "city block"):	8. Percent (%) Contained / Completed	*9. Incident Definition:	10. Incident Complexity Level:	*11. For Time Period: From Date/Time: To Date/Time:

Approval & Routing Information

*12. Prepared By: Print Name: ICS Position: Date/Time Prepared:	*13. Date/Time Submitted: Time Zone:
*14. Approved By: Print Name: ICS Position: Signature:	*15. Primary Location, Organization, or Agency Sent To:

Incident Location Information

*16. State:	*17. County/Parish/Borough:	*18. City:
19. Unit or Other:	*20. Incident Jurisdiction:	21. Incident Location Ownership (if different than jurisdiction):
22. Longitude (indicate format): Latitude (indicate format):	23. US National Grid Reference:	24. Legal Description (township, section, range):
*25. Short Location or Area Description (list all affected areas or a reference point):		26. UTM Coordinates:
27. Note any electronic geospatial data included or attached (indicate data format, content, and collection time information and labels):		

Incident Summary

*28. Significant Events for the Time Period Reported (summarize significant progress made, evacuations, incident growth, etc.):				
29. Primary Materials or Hazards Involved (hazardous chemicals, fuel types, infectious agents, radiation, etc.):				
30. Damage Assessment Information (summarize damage and/or restriction of use or availability to residential or commercial property, natural resources, critical infrastructure and key resources, etc.):	A. Structural Summary	B. # Threatened (72 hrs)	C. # Damaged	D. # Destroyed
	E. Single Residences			
	F. Nonresidential Commercial Property			
	Other Minor Structures			
	Other			

ICS 209, Page 1 of ____ * *Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

***1. Incident Name:**	**2. Incident Number:**	

Additional Incident Decision Support Information

***31. Public Status Summary:**	A. # This Reporting Period	B. Total # to Date
C. Indicate Number of Civilians (Public) Below:		
D. Fatalities		
E. With Injuries/Illness		
F. Trapped/In Need of Rescue		
G. Missing *(note if estimated)*		
H. Evacuated *(note if estimated)*		
I. Sheltering in Place *(note if estimated)*		
J. In Temporary Shelters *(note if est.)*		
K. Have Received Mass Immunizations		
L. Require Immunizations *(note if est.)*		
M. In Quarantine		
N. Total # Civilians (Public) Affected:		

***32. Responder Status Summary:**	A. # This Reporting Period	B. Total # to Date
C. Indicate Number of Responders Below:		
D. Fatalities		
E. With Injuries/Illness		
F. Trapped/In Need of Rescue		
G. Missing		
H. Sheltering in Place		
I. Have Received Immunizations		
J. Require Immunizations		
K. In Quarantine		
N. Total # Responders Affected:		

33. Life, Safety, and Health Status/Threat Remarks:

35. Weather Concerns (synopsis of current and predicted weather; discuss related factors that may cause concern)**:**

***34. Life, Safety, and Health Threat Management:**	A. Check if Active
A. No Likely Threat	☐
B. Potential Future Threat	☐
C. Mass Notifications in Progress	☐
D. Mass Notifications Completed	☐
E. No Evacuation(s) Imminent	☐
F. Planning for Evacuation	☐
G. Planning for Shelter-in-Place	☐
H. Evacuation(s) in Progress	☐
I. Shelter-in-Place in Progress	☐
J. Repopulation in Progress	☐
K. Mass Immunization in Progress	☐
L. Mass Immunization Complete	☐
M. Quarantine in Progress	☐
N. Area Restriction in Effect	☐
	☐
	☐
	☐
	☐

36. Projected Incident Activity, Potential, Movement, Escalation, or Spread and influencing factors during the next operational period and in 12-, 24-, 48-, and 72-hour timeframes:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

37. Strategic Objectives (define planned end-state for incident)**:**

ICS 209, Page 2 of ____	** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

*1. Incident Name:	2. Incident Number:	

***Additional Incident Decision Support Information** (continued)*

38. Current Incident Threat Summary and Risk Information in 12-, 24-, 48-, and 72-hour timeframes and beyond. Summarize primary incident threats to life, property, communities and community stability, residences, health care facilities, other critical infrastructure and key resources, commercial facilities, natural and environmental resources, cultural resources, and continuity of operations and/or business. Identify corresponding incident-related potential economic or cascading impacts.

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

39. Critical Resource Needs in 12-, 24-, 48-, and 72-hour timeframes and beyond to meet critical incident objectives. List resource category, kind, and/or type, and amount needed, in priority order:

12 hours:

24 hours:

48 hours:

72 hours:

Anticipated after 72 hours:

40. Strategic Discussion: Explain the relation of overall strategy, constraints, and current available information to:

1) critical resource needs identified above,
2) the Incident Action Plan and management objectives and targets,
3) anticipated results.

Explain major problems and concerns such as operational challenges, incident management problems, and social, political, economic, or environmental concerns or impacts.

41. Planned Actions for Next Operational Period:

42. Projected Final Incident Size/Area (use unit label – e.g., "sq mi")**:**

43. Anticipated Incident Management Completion Date:

44. Projected Significant Resource Demobilization Start Date:

45. Estimated Incident Costs to Date:

46. Projected Final Incident Cost Estimate:

47. Remarks (or continuation of any blocks above – list block number in notation)**:**

ICS 209, Page 3 of ____	** Required when applicable.*

INCIDENT STATUS SUMMARY (ICS 209)

1. Incident Name:	2. Incident Number:

Incident Resource Commitment Summary

48. Agency or Organization:	49. Resources (summarize resources by category, kind, and/or type; show # of resources on top ½ of box, show # of personnel associated with resource on bottom ½ of box):																					50. Additional Personnel not assigned to a resource:	51. Total Personnel (includes those associated with resources – e.g., aircraft or engines – *and* individual overhead):
52. Total Resources																							

53. Additional Cooperating and Assisting Organizations Not Listed Above:

ICS 209, Page____of ___	** Required when applicable.*

ICS 209
Incident Status Summary

Purpose. The ICS 209 is used for reporting information on significant incidents. It is not intended for every incident, as most incidents are of short duration and do not require scarce resources, significant mutual aid, or additional support and attention. **T**he ICS 209 contains basic information elements needed to support decisionmaking at all levels above the incident to support the incident. Decisionmakers may include the agency having jurisdiction, but also all multiagency coordination system (MACS) elements and parties, such as cooperating and assisting agencies/organizations, dispatch centers, emergency operations centers, administrators, elected officials, and local, tribal, county, State, and Federal agencies. Once ICS 209 information has been submitted from the incident, decisionmakers and others at all incident support and coordination points may transmit and share the information (based on its sensitivity and appropriateness) for access and use at local, regional, State, and national levels as it is needed to facilitate support.

Accurate and timely completion of the ICS 209 is necessary to identify appropriate resource needs, determine allocation of limited resources when multiple incidents occur, and secure additional capability when there are limited resources due to constraints of time, distance, or other factors. The information included on the ICS 209 influences the priority of the incident, and thus its share of available resources and incident support.

The ICS 209 is designed to provide a “snapshot in time” to effectively move incident decision support information where it is needed. It should contain the most accurate and up-to-date information available at the time it is prepared. However, readers of the ICS 209 may have access to more up-to-date or real-time information in reference to certain information elements on the ICS 209. Coordination among communications and information management elements within ICS and among MACS should delineate authoritative sources for more up-to-date and/or real-time information when ICS 209 information becomes outdated in a quickly evolving incident.

Reporting Requirements. The ICS 209 is intended to be used when an incident reaches a certain threshold where it becomes significant enough to merit special attention, require additional resource support needs, or cause media attention, increased public safety threat, etc. Agencies or organizations may set reporting requirements and, therefore, ICS 209s should be completed according to each jurisdiction or discipline’s policies, mobilization guide, or preparedness plans. It is recommended that consistent ICS 209 reporting parameters be adopted and used by jurisdictions or disciplines for consistency over time, documentation, efficiency, trend monitoring, incident tracking, etc.

For example, an agency or MAC (Multiagency Coordination) Group may require the submission of an initial ICS 209 when a new incident has reached a certain predesignated level of significance, such as when a given number of resources are committed to the incident, when a new incident is not completed within a certain timeframe, or when impacts/threats to life and safety reach a given level.

Typically, ICS 209 forms are completed either once daily or for each operational period – in addition to the initial submission. Jurisdictional or organizational guidance may indicate frequency of ICS 209 submission for particular definitions of incidents or for all incidents. This specific guidance may help determine submission timelines when operational periods are extremely short (e.g., 2 hours) and it is not necessary to submit new ICS 209 forms for all operational periods.

Any plans or guidelines should also indicate parameters for when it is appropriate to stop submitting ICS 209s for an incident, based upon incident activity and support levels.

Preparation. When an Incident Management Organization (such as an Incident Management Team) is in place, the Situation Unit Leader or Planning Section Chief prepares the ICS 209 at the incident. On other incidents, the ICS 209 may be completed by a dispatcher in the local communications center, or by another staff person or manager. This form should be completed at the incident or at the closest level to the incident.

The ICS 209 should be completed with the best possible, currently available, and verifiable information at the time it is completed and signed.

This form is designed to serve incidents impacting specific geographic areas that can easily be defined. It also has the flexibility for use on ubiquitous events, or those events that cover extremely large areas and that may involve many jurisdictions and ICS organizations. For these incidents, it will be useful to clarify on the form exactly which portion of the larger incident the ICS 209 is meant to address. For example, a particular ICS 209 submitted during a statewide outbreak of mumps may be relevant only to mumps-related activities in Story County, Iowa. This can be indicated in both the incident name, Block 1, and in the Incident Location Information section in Blocks 16–26.

RESOURCE STATUS CHANGE (ICS 210)

1. Incident Name:		**2. Operational Period:** Date From: Time From:		Date To: Time To:	
3. Resource Number	**4. New Status** (Available, Assigned, O/S)	**5. From** (Assignment and Status)**:**	**6. To** (Assignment and Status)**:**	**7. Time and Date of Change:**	

8. Comments:

9. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 210 Date/Time: _____

ICS 210
Resource Status Change

Purpose. The Resource Status Change (ICS 210) is used by the Incident Communications Center Manager to record status change information received on resources assigned to the incident. This information could be transmitted with a General Message (ICS 213). The form could also be used by Operations as a worksheet to track entry, etc.

Preparation. The ICS 210 is completed by radio/telephone operators who receive status change information from individual resources, Task Forces, Strike Teams, and Division/Group Supervisors. Status information could also be reported by Staging Area and Helibase Managers and fixed-wing facilities.

Distribution. The ICS 210 is maintained by the Communications Unit and copied to Resources Unit and filed by Documentation Unit.

Notes:

- The ICS 210 is essentially a message form that can be used to update Resource Status Cards or T-Cards (ICS 219) for incident-level resource management.
- If additional pages are needed, use a blank ICS 210 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Resource Number**	Enter the resource identification (ID) number (this may be a letter and number combination) assigned by either the sending unit or the incident.
4	**New Status** (Available, Assigned, Out of Service)	Indicate the current status of the resource: • Available – Indicates resource is available for incident use immediately. • Assigned – Indicates resource is checked in and assigned a work task on the incident. • Out of Service – Indicates resource is assigned to the incident but unable to respond for mechanical, rest, or personnel reasons. If space permits, indicate the estimated time of return (ETR). It may be useful to indicate the reason a resource is out of service (e.g., "O/S – Mech" (for mechanical issues), "O/S – Rest" (for off shift), or "O/S – Pers" (for personnel issues).
5	**From** (Assignment and Status)	Indicate the current location of the resource (where it came from) and the status. When more than one Division, Staging Area, or Camp is used, identify the specific location (e.g., Division A, Staging Area, Incident Command Post, Western Camp).
6	**To** (Assignment and Status)	Indicate the assigned incident location of the resource and status. When more than one Division, Staging Area, or Camp is used, identify the specific location.
7	**Time and Date of Change**	Enter the time and location of the status change (24-hour clock). Enter the date as well if relevant (e.g., out of service).
8	**Comments**	Enter any special information provided by the resource or dispatch center. This may include details about why a resource is out of service, or individual identifying designators (IDs) of Strike Teams and Task Forces.
9	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT CHECK-IN LIST (ICS 211)

1. Incident Name:	2. Incident Number:	3. Check-In Location (complete all that apply): ☐ Base ☐ Staging Area ☐ ICP ☐ Helibase ☐ Other	4. Start Date/Time: Date: Time:

Check-In Information (use reverse of form for remarks or comments)

5. List single resource personnel (overhead) by agency and name, OR list resources by the following format: State	Agency	Category	Kind	Type	Resource Name or Identifier	ST or TF	6. Order Request #	7. Date/Time Check-In	8. Leader's Name	9. Total Number of Personnel	10. Incident Contact Information	11. Home Unit or Agency	12. Departure Point, Date and Time	13. Method of Travel	14. Incident Assignment	15. Other Qualifications	16. Data Provided to Resources Unit

ICS 211 **17. Prepared by:** Name:_____ Position/Title:_____ Signature:_____ Date/Time: _____

ICS 211
Incident Check-In List

Purpose. Personnel and equipment arriving at the incident can check in at various incident locations. Check-in consists of reporting specific information, which is recorded on the Check-In List (ICS 211). The ICS 211 serves several purposes, as it: (1) records arrival times at the incident of all overhead personnel and equipment, (2) records the initial location of personnel and equipment to facilitate subsequent assignments, and (3) supports demobilization by recording the home base, method of travel, etc., for resources checked in.

Preparation. The ICS 211 is initiated at a number of incident locations including: Staging Areas, Base, and Incident Command Post (ICP). Preparation may be completed by: (1) overhead at these locations, who record the information and give it to the Resources Unit as soon as possible, (2) the Incident Communications Center Manager located in the Communications Center, who records the information and gives it to the Resources Unit as soon as possible, (3) a recorder from the Resources Unit during check-in to the ICP. As an option, the ICS 211 can be printed on colored paper to match the designated Resource Status Card (ICS 219) colors. The purpose of this is to aid the process of completing a large volume of ICS 219s. The ICS 219 colors are:

- 219-1: Header Card – Gray (used only as label cards for T-Card racks)
- 219-2: Crew/Team Card – Green
- 219-3: Engine Card – Rose
- 219-4: Helicopter Card – Blue
- 219-5: Personnel Card – White
- 219-6: Fixed-Wing Card – Orange
- 219-7: Equipment Card – Yellow
- 219-8: Miscellaneous Equipment/Task Force Card – Tan
- 219-10: Generic Card – Light Purple

Distribution. ICS 211s, which are completed by personnel at the various check-in locations, are provided to the Resources Unit, Demobilization Unit, and Finance/Administration Section. The Resources Unit maintains a master list of all equipment and personnel that have reported to the incident.

Notes:

- Also available as 8½ x 14 (legal size) or 11 x 17 chart.
- Use reverse side of form for remarks or comments.
- If additional pages are needed for any form page, use a blank ICS 211 and repaginate as needed.
- Contact information for sender and receiver can be added for communications purposes to confirm resource orders. Refer to 213RR example (Appendix B)

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Check-In Location** ☐ Base ☐ Staging Area ☐ ICP ☐ Helibase ☐ Other	Check appropriate box and enter the check-in location for the incident. Indicate specific information regarding the locations under each checkbox. ICP is for Incident Command Post. Other may include…
4	**Start Date/Time** • Date • Time	Enter the date (month/day/year) and time (using the 24-hour clock) that the form was started.

Block Number	Block Title	Instructions
	Check-In Information	Self explanatory.
5	**List single resource personnel (overhead) by agency and name, OR list resources by the following format**	Enter the following information for resources: OPTIONAL: Indicate if resource is a single resource versus part of Strike Team or Task Force. Fields can be left blank if not necessary.
	• State	Use this section to list the home State for the resource.
	• Agency	Use this section to list agency name (or designator), and individual names for all single resource personnel (e.g., ORC, ARL, NYPD).
	• Category	Use this section to list the resource category based on NIMS, discipline, or jurisdiction guidance.
	• Kind	Use this section to list the resource kind based on NIMS, discipline, or jurisdiction guidance.
	• Type	Use this section to list the resource type based on NIMS, discipline, or jurisdiction guidance.
	• Resource Name or Identifier	Use this section to enter the resource name or unique identifier. If it is a Strike Team or a Task Force, list the unique Strike Team or Task Force identifier (if used) on a single line with the component resources of the Strike Team or Task Force listed on the following lines. For example, for an Engine Strike Team with the call sign "XLT459" show "XLT459" in this box and then in the next five rows, list the unique identifier for the five engines assigned to the Strike Team.
	• ST or TF	Use ST or TF to indicate whether the resource is part of a Strike Team or Task Force. See above for additional instructions.
6	**Order Request #**	The order request number will be assigned by the agency dispatching resources or personnel to the incident. Use existing protocol as appropriate for the jurisdiction and/or discipline, since several incident numbers may be used for the same incident.
7	**Date/Time Check-In**	Enter date (month/day/year) and time of check-in (24-hour clock) to the incident.
8	**Leader's Name**	• For equipment, enter the operator's name. • Enter the Strike Team or Task Force leader's name. • Leave blank for single resource personnel (overhead).
9	**Total Number of Personnel**	Enter total number of personnel associated with the resource. Include leaders.
10	**Incident Contact Information**	Enter available contact information (e.g., radio frequency, cell phone number, etc.) for the incident.
11	**Home Unit or Agency**	Enter the home unit or agency to which the resource or individual is normally assigned (may not be departure location).
12	**Departure Point, Date and Time**	Enter the location from which the resource or individual departed for this incident. Enter the departure time using the 24-hour clock.
13	**Method of Travel**	Enter the means of travel the individual used to bring himself/herself to the incident (e.g., bus, truck, engine, personal vehicle, etc.).
14	**Incident Assignment**	Enter the incident assignment at time of dispatch.
15	**Other Qualifications**	Enter additional duties (ICS positions) pertinent to the incident that the resource/individual is qualified to perform. Note that resources should not be reassigned on the incident without going through the established ordering process. This data may be useful when resources are demobilized and remobilized for another incident.

Block Number	Block Title	Instructions
16	**Data Provided to Resources Unit**	Enter the date and time that the information pertaining to that entry was transmitted to the Resources Unit, and the initials of the person who transmitted the information.
17	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

GENERAL MESSAGE (ICS 213)

1. Incident Name (Optional)**:**		
2. To (Name and Position)**:**		
3. From (Name and Position)**:**		
4. Subject:	**5. Date:**	**6. Time**
7. Message:		
8. Approved by: Name:_____ Signature:_____ Position/Title: _____		
9. Reply:		
10. Replied by: Name:_____ Position/Title:_____ Signature: _____		
ICS 213	Date/Time: _____	

ICS 213
General Message

Purpose. The General Message (ICS 213) is used by the incident dispatchers to record incoming messages that cannot be orally transmitted to the intended recipients. The ICS 213 is also used by the Incident Command Post and other incident personnel to transmit messages (e.g., resource order, incident name change, other ICS coordination issues, etc.) to the Incident Communications Center for transmission via radio or telephone to the addressee. This form is used to send any message or notification to incident personnel that requires hard-copy delivery.

Preparation. The ICS 213 may be initiated by incident dispatchers and any other personnel on an incident.

Distribution. Upon completion, the ICS 213 may be delivered to the addressee and/or delivered to the Incident Communication Center for transmission.

Notes:

- The ICS 213 is a three-part form, typically using carbon paper. The sender will complete Part 1 of the form and send Parts 2 and 3 to the recipient. The recipient will complete Part 2 and return Part 3 to the sender.
- A copy of the ICS 213 should be sent to and maintained within the Documentation Unit.
- Contact information for the sender and receiver can be added for communications purposes to confirm resource orders. Refer to 213RR example (Appendix B)

Block Number	Block Title	Instructions
1	**Incident Name** (Optional)	Enter the name assigned to the incident. This block is optional.
2	**To** (Name and Position)	Enter the name and position the General Message is intended for. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
3	**From** (Name and Position)	Enter the name and position of the individual sending the General Message. For all individuals, use at least the first initial and last name. For Unified Command, include agency names.
4	**Subject**	Enter the subject of the message.
5	**Date**	Enter the date (month/day/year) of the message.
6	**Time**	Enter the time (using the 24-hour clock) of the message.
7	**Message**	Enter the content of the message. Try to be as concise as possible.
8	**Approved by** • Name • Signature • Position/Title	Enter the name, signature, and ICS position/title of the person approving the message.
9	**Reply**	The intended recipient will enter a reply to the message and return it to the originator.
10	**Replied by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person replying to the message. Enter date (month/day/year) and time prepared (24-hour clock).

ACTIVITY LOG (ICS 214)

1. Incident Name:	**2. Operational Period:** Date From: Time From:	Date To: Time To:
3. Name:	**4. ICS Position:**	**5. Home Agency** (and Unit)**:**

6. Resources Assigned:

Name	ICS Position	Home Agency (and Unit)

7. Activity Log:

Date/Time	Notable Activities

8. Prepared by: Name:_____ Position/Title:_____ Signature: _____

ICS 214, Page 1 Date/Time: _____

ACTIVITY LOG (ICS 214)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

7. Activity Log (continuation)**:**

Date/Time	Notable Activities

8. Prepared by: Name:____________________Position/Title:___________________Signature: ____________________

ICS 214, Page 2 Date/Time: ____

ICS 214
Activity Log

Purpose. The Activity Log (ICS 214) records details of notable activities at any ICS level, including single resources, equipment, Task Forces, etc. These logs provide basic incident activity documentation, and a reference for any after-action report.

Preparation. An ICS 214 can be initiated and maintained by personnel in various ICS positions as it is needed or appropriate. Personnel should document how relevant incident activities are occurring and progressing, or any notable events or communications.

Distribution. Completed ICS 214s are submitted to supervisors, who forward them to the Documentation Unit. All completed original forms must be given to the Documentation Unit, which maintains a file of all ICS 214s. It is recommended that individuals retain a copy for their own records.

Notes:

- The ICS 214 can be printed as a two-sided form.
- Use additional copies as continuation sheets as needed, and indicate pagination as used.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Name**	Enter the title of the organizational unit or resource designator (e.g., Facilities Unit, Safety Officer, Strike Team).
4	**ICS Position**	Enter the name and ICS position of the individual in charge of the Unit.
5	**Home Agency** (and Unit)	Enter the home agency of the individual completing the ICS 214. Enter a unit designator if utilized by the jurisdiction or discipline.
6	**Resources Assigned**	Enter the following information for resources assigned:
	• Name	Use this section to enter the resource's name. For all individuals, use at least the first initial and last name. Cell phone number for the individual can be added as an option.
	• ICS Position	Use this section to enter the resource's ICS position (e.g., Finance Section Chief).
	• Home Agency (and Unit)	Use this section to enter the resource's home agency and/or unit (e.g., Des Moines Public Works Department, Water Management Unit).
7	**Activity Log** • Date/Time • Notable Activities	• Enter the time (24-hour clock) and briefly describe individual notable activities. Note the date as well if the operational period covers more than one day. • Activities described may include notable occurrences or events such as task assignments, task completions, injuries, difficulties encountered, etc. • This block can also be used to track personal work habits by adding columns such as "Action Required," "Delegated To," "Status," etc.
8	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position/title, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

OPERATIONAL PLANNING WORKSHEET (ICS 215)

1. Incident Name:	**2. Operational Period:** Date From: Date To: Time From: Time To:

3. Branch	**4. Division, Group, or Other**	**5. Work Assignment & Special Instructions**	**6. Resources**													**7. Overhead Position(s)**	**8. Special Equipment & Supplies**	**9. Reporting Location**	**10. Requested Arrival Time**
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
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			Have																
			Need																
			Req.																
			Have																
			Need																
			Req.																
			Have																
			Need																

11. Total Resources Required														**14. Prepared by:** Name: ______________________ Position/Title: ________________ Signature: ___________________ Date/Time: ___________________
12. Total Resources Have on Hand														
13. Total Resources Need To Order														

ICS 215

ICS 215
Operational Planning Worksheet

Purpose. The Operational Planning Worksheet (ICS 215) communicates the decisions made by the Operations Section Chief during the Tactics Meeting concerning resource assignments and needs for the next operational period. The ICS 215 is used by the Resources Unit to complete the Assignment Lists (ICS 204) and by the Logistics Section Chief for ordering resources for the incident.

Preparation. The ICS 215 is initiated by the Operations Section Chief and often involves logistics personnel, the Resources Unit, and the Safety Officer. The form is shared with the rest of the Command and General Staffs during the Planning Meeting. It may be useful in some disciplines or jurisdictions to prefill ICS 215 copies prior to incidents.

Distribution. When the Branch, Division, or Group work assignments and accompanying resource allocations are agreed upon, the form is distributed to the Resources Unit to assist in the preparation of the ICS 204. The Logistics Section will use a copy of this worksheet for preparing requests for resources required for the next operational period.

Notes:

- This worksheet can be made into a wall mount.
- Also available as 8½ x 14 (legal size) and 11 x 17 chart.
- If additional pages are needed, use a blank ICS 215 and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (using the 24-hour clock) and end date and time for the operational period to which the form applies.
3	**Branch**	Enter the Branch of the work assignment for the resources.
4	**Division, Group, or Other**	Enter the Division, Group, or other location (e.g., Staging Area) of the work assignment for the resources.
5	**Work Assignment & Special Instructions**	Enter the specific work assignments given to each of the Divisions/Groups and any special instructions, as required.
6	**Resources**	Complete resource headings for category, kind, and type as appropriate for the incident. The use of a slash indicates a single resource in the upper portion of the slash and a Strike Team or Task Force in the bottom portion of the slash.
	• Required	Enter, for the appropriate resources, the number of resources by type (engine, squad car, Advanced Life Support ambulance, etc.) required to perform the work assignment.
	• Have	Enter, for the appropriate resources, the number of resources by type (engines, crew, etc.) available to perform the work assignment.
	• Need	Enter the number of resources needed by subtracting the number in the "Have" row from the number in the "Required" row.
7	**Overhead Position(s)**	List any supervisory and nonsupervisory ICS position(s) not directly assigned to a previously identified resource (e.g., Division/Group Supervisor, Assistant Safety Officer, Technical Specialist, etc.).
8	**Special Equipment & Supplies**	List special equipment and supplies, including aviation support, used or needed. This may be a useful place to monitor span of control.
9	**Reporting Location**	Enter the specific location where the resources are to report (Staging Area, location at incident, etc.).
10	**Requested Arrival Time**	Enter the time (24-hour clock) that resources are requested to arrive at the reporting location.

Block Number	Block Title	Instructions
11	**Total Resources Required**	Enter the total number of resources required by category/kind/type as preferred (e.g., engine, squad car, ALS ambulance, etc.). A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/ Task Forces in the bottom portion of the slash.
12	**Total Resources Have on Hand**	Enter the total number of resources on hand that are assigned to the incident for incident use. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
13	**Total Resources Need To Order**	Enter the total number of resources needed. A slash can be used again to indicate total single resources in the upper portion of the slash and total Strike Teams/Task Forces in the bottom portion of the slash.
14	**Prepared by** • Name • Position/Title • Signature • Date/Time	Enter the name, ICS position, and signature of the person preparing the form. Enter date (month/day/year) and time prepared (24-hour clock).

INCIDENT ACTION PLAN SAFETY ANALYSIS (ICS 215A)

1. Incident Name:	**2. Incident Number:**
3. Date/Time Prepared: Date: Time:	**4. Operational Period:** Date From: Date To: Time From: Time To:

5. Incident Area	**6. Hazards/Risks**	**7. Mitigations**

8. Prepared by (Safety Officer)**:** Name:_____ Signature: _____

Prepared by (Operations Section Chief)**:** Name:_____ Signature: _____

ICS 215A Date/Time: _____

ICS 215A
Incident Action Plan Safety Analysis

Purpose. The purpose of the Incident Action Plan Safety Analysis (ICS 215A) is to aid the Safety Officer in completing an operational risk assessment to prioritize hazards, safety, and health issues, and to develop appropriate controls. This worksheet addresses communications challenges between planning and operations, and is best utilized in the planning phase and for Operations Section briefings.

Preparation. The ICS 215A is typically prepared by the Safety Officer during the incident action planning cycle. When the Operations Section Chief is preparing for the tactics meeting, the Safety Officer collaborates with the Operations Section Chief to complete the Incident Action Plan Safety Analysis. This worksheet is closely linked to the Operational Planning Worksheet (ICS 215). Incident areas or regions are listed along with associated hazards and risks. For those assignments involving risks and hazards, mitigations or controls should be developed to safeguard responders, and appropriate incident personnel should be briefed on the hazards, mitigations, and related measures. Use additional sheets as needed.

Distribution. When the safety analysis is completed, the form is distributed to the Resources Unit to help prepare the Operations Section briefing. All completed original forms must be given to the Documentation Unit.

Notes:

- This worksheet can be made into a wall mount, and can be part of the IAP.
- If additional pages are needed, use a blank ICS 215A and repaginate as needed.

Block Number	Block Title	Instructions
1	**Incident Name**	Enter the name assigned to the incident.
2	**Incident Number**	Enter the number assigned to the incident.
3	**Date/Time Prepared**	Enter date (month/day/year) and time (using the 24-hour clock) prepared.
4	**Operational Period** • Date and Time From • Date and Time To	Enter the start date (month/day/year) and time (24-hour clock) and end date and time for the operational period to which the form applies.
5	**Incident Area**	Enter the incident areas where personnel or resources are likely to encounter risks. This may be specified as a Branch, Division, or Group.
6	**Hazards/Risks**	List the types of hazards and/or risks likely to be encountered by personnel or resources at the incident area relevant to the work assignment.
7	**Mitigations**	List actions taken to reduce risk for each hazard indicated (e.g., specify personal protective equipment or use of a buddy system or escape routes).
8	**Prepared by** (Safety Officer and Operations Section Chief) • Name • Signature • Date/Time	Enter the name of both the Safety Officer and the Operations Section Chief, who should collaborate on form preparation. Enter date (month/day/year) and time (24-hour clock) reviewed.

Appendix I

Contact List

Appendix I: Contact List

(All telephone Area Codes are 503 unless noted otherwise)

	Business	Emergency	FAX
FIRE DEPARTMENTS			
Clatskanie RFP District & Ambulance	728-2025	9-1-1	728-4388
Columbia River Fire and Rescue	397-2990	9-1-1	
Scappoose Fire Department & Ambulance	543-5026	9-1-1	
LAW ENFORCEMENT			
Columbia County Sheriff's Office	**366-4611**	**9-1-1**	**366-4644**
Clatskanie Police Department	728-2145	9-1-1	728-2113
Columbia City Police Dept	397-4010	9-1-1	366-2870
Oregon State Police St Helens office	397-0235	9-1-1	397-0607
N Command Center Dispatch	375-3555		585-6635
Rainier Police Department	556-3644	9-1-1	
Saint Helens Police Department	397-3333	9-1-1	397-0619
Scappoose Police Department	543-7146	9-1-1	543-7182
Vernonia Police Department	429-7335	9-1-1	429-5141
LEAD AGENCIES			
Columbia County Emergency Management	366-3931		366-3927
Portland & Western Railroad		800-800-2203	
Kevin Haugh, General Manager	480-7765	816-6001	
Frankie Gonzales, Manager of Transportation		930-8222(cell)	
SUPPORTING AGENCIES			
Columbia 9-1-1 Communications District	397-7255	9-1-1	366-7136
American Red Cross	284-1234	888-680-1455	
CHEMTREC		1-800-424-9300	
Public Health Foundation of Columbia County	397-4651	396-2072	397-1424
Life Flight Helicopter	678-4364		678-4369
Dispatch	800-232-0911		
Lifeguard Air Ambulance	640-2927		
AMR	239-0389		
Medix Ambulance Service	861-5554	861-1990	861-5555
Metro West Ambulance	648-6658		
Dispatch	648-6656		
Mist-Birkenfield Rural Fire Protection District	755-2710	9-1-1	755-2556
Oregon Department of Environmental Quality	229-5696		229-6124
Oregon Emergency Response System (OERS)	378-2911		373-7833
Oregon Office of the State Fire Marshal	373-1540		373-1825
Portland Regional HazMat Team # 7	823-3856	793-1606	
Astoria Regional HazMat Team # 11	325-2345	325-4411	325-2346
Vernonia Fire Department	429-8252	9-1-1	

APPENDIX I: CONTACT LIST (continued)

AREA HOSPITALS

	Business	Emergency	**FAX**
Columbia Memorial Hospital, Astoria	325-4321		
Emanuel Hospital, Portland	413-4121		
Good Samaritan Hospital, Portland	413-7260		
Kaiser Westside Hospital, Hillsboro	971-310-4500		
OHSU Hospital, Portland	494-7551		
St John's Hospital, Longview, WA	360-636-4830		
St Vincent's Hospital, Portland	216-0300		