Identify your locally owned NHS

Where can you find them?

- Check your state DOT website:

Washington DOT:

- http://www.wsdot.wa.gov/mapsdata/travel/hpms/NHSroutes.htm

Oregon DOT:

- http://www.oregon.gov/ODOT/Data/Pages/Functional-Class.aspx

Idaho DOT: ???

Transportation Data, GIS & Modeling

Home

Follo

Data & Products

Crash

Travel

GIS

Roadway

Tools & Applications

Functional Class App

GeoPortal App

National Highway System Routes – Washington State

The National Highway System (NHS) includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The NHS was developed by the Federal Department of Transportation in 1995 in cooperation with the states, local officials, and metropolitan planning organizations (MPOs). There have been only minor changes to the NHS until the *Moving Ahead for Progress in the 21st Century Act* (MAP-21) was authorized by congress and signed into law in 2012. MAP-21 resulted in the addition of 1,200 miles of Washington roads to the NHS.

The NHS consists of NHS routes, Intermodal Facilities, and intermodal connector routes where required for travel from the NHS routes to the Intermodal Facilities. Routes designated as Strategic Highway Network (STRAHNET) by the Department of Defense also form part of the NHS.

Washington NHS routes are maintained in Washington's Highway Performance Monitoring System (HPMS) and represented in Washington's HPMS spatial network (GIS). Changes and updates to the NHS are reported to FHWA annually.

NHS Documents

Washington 2015 State Highway NHS List (pdf 1.0 mb)

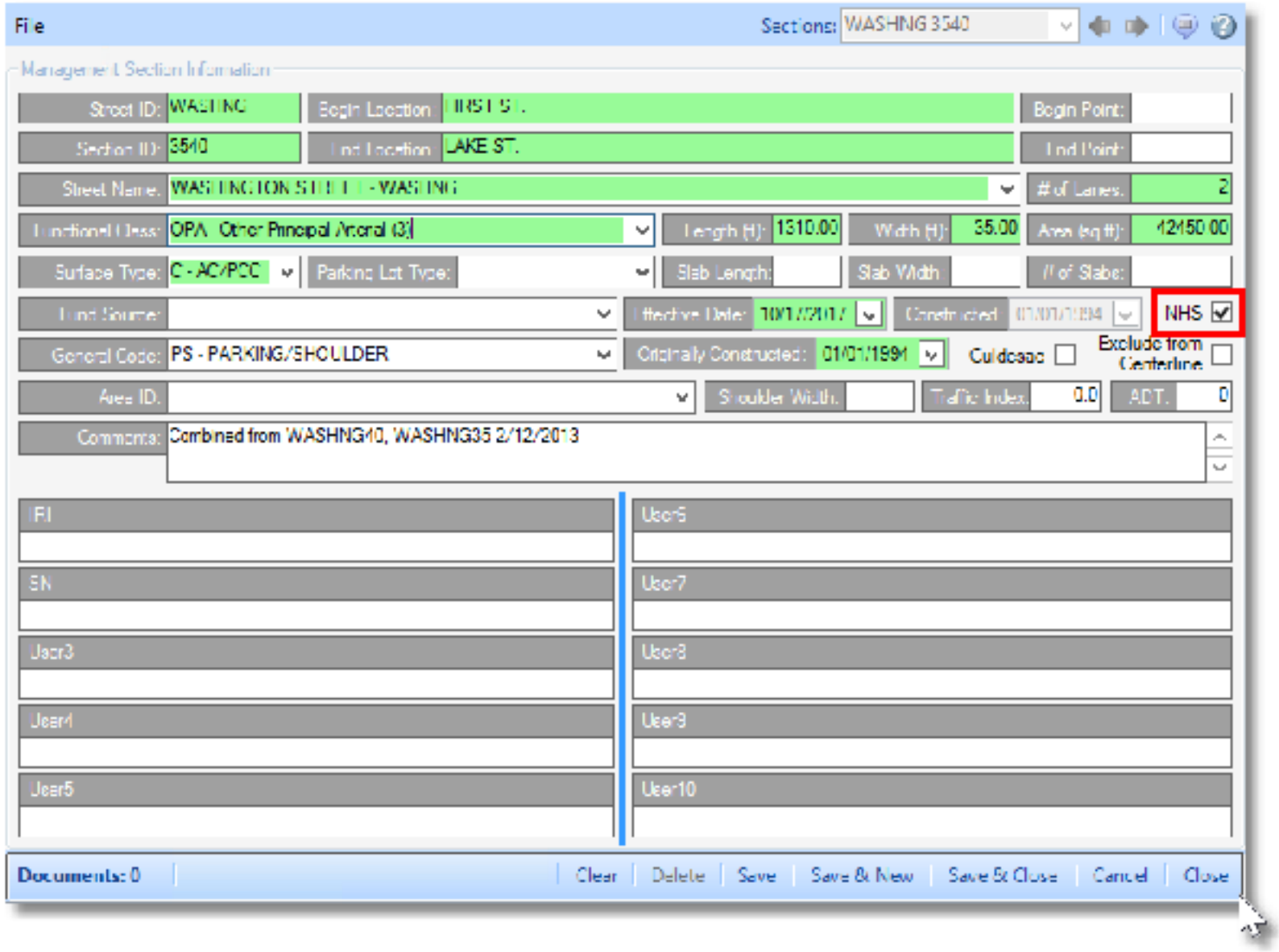
Washington 2015 Local Agency NHS List (pdf 1.0 mb)

2015 National Highway System Routes

as reported to FHWA in HPMS

2015 Local Agency National Highway System Routes in Washington

COUNTY	City	NHS Route Description	From	To	RouteID	Begin_PL	End_PL	Length	NHS Code
Clark	Vancouver	NE Fourth Plain Rd	152nd Ave	192nd Ave	2000013[illegible]	9.44	9.94	0.50	1
Clark	Vancouver	Grand Blvd	E 5th St	E Evergreen Blvd	2000014[illegible]	0.84	1.12	0.28	1
Clark	Vancouver	NE St Johns Rd	NE 99th St	NE 99th St	2000014[illegible]	1.10	2.16	1.06	1
Clark	Vancouver	N Andresen Rd	E Mill Plain Blvd	NE Fourth Plain Blvd	2000015[illegible]	1.48	2.74	1.25	1
Clark	Vancouver	NE St Johns Rd	NE Cherry Rd	NE 99th St	2000014[illegible]	0.83	1.00	0.17	1
Clark	Vancouver	NE St Johns Rd	SR 500	NE Cherry Rd	2000014[illegible]	0.67	0.83	0.11	1
Clark	Vancouver	St Johns Blvd	E 33rd St	SR-500	2000014[illegible]	0.67	0.81	0.15	1
Clark	Vancouver	NE St James Rd	NE Cherry Rd	NE Petticoat Ln / NE Arnold Rd	2000014[illegible]	1.33	1.49	0.14	1
Clark	Vancouver	NE St James Rd	NE Minnehaha St	NE Cherry Rd	2000014[illegible]	0.13	1.33	1.20	1
Clark	Vancouver	NE Highway 99 (Main St)	NE Ross St	Main St	2000025[illegible]	0.00	0.47	0.47	1
Clark	Vancouver	NE St James Rd	St Johns Rd	NE Minnehaha St	2000014[illegible]	0.00	0.13	0.13	1
Clark	Vancouver	E 39th St	St Johns Blvd	Grand Blvd	2000013[illegible]	1.80	1.90	0.10	1
Clark	Vancouver	W 26th Ave	SR 501 / NW Lower River Rd	Guard/Gate House	2000013[illegible]	0.00	0.36	0.36	1
Clark	Vancouver	NE St Johns Rd	NE 50th St	NE 68th St	2000014[illegible]	2.16	2.44	0.28	1
Clark	Vancouver	SE 164th Ave	SE 15th St	SE Mill Plain Blvd	2000018[illegible]	1.42	1.79	0.37	1
Clark	Vancouver	NE 112th Ave	NE 37 Cir	NE 49 St	2000016[illegible]	2.48	3.08	0.60	1
Clark	Vancouver	NE 112th Ave	NE 49th St	SR 500	2000016[illegible]	3.03	3.34	0.31	1
Clark	Vancouver	NE Gher Rd	SR 500	NE Fourth Plain Blvd	2000017[illegible]	3.34	3.60	0.26	1
Clark	Vancouver	SE 164th Ave	SR 14	SE 34th St	2000018[illegible]	0.00	0.49	0.49	1
Clark	Vancouver	SE 164th Ave	SE 34th St	SE 20th St	2000018[illegible]	0.49	1.18	0.69	1
Clark	Vancouver	Grand Blvd	E Mill Plain Blvd	E Fourth Plain Blvd	2000014[illegible]	1.27	1.95	0.69	1
Clark	Vancouver	SE 164th Ave	SE 20th St	SE 15th St	2000018[illegible]	1.18	1.42	0.24	1
Clark	Vancouver	Grand Blvd	E Evergreen Blvd	E Mill Plain Blvd	2000014[illegible]	1.12	1.27	0.15	1
Clark	Vancouver	SE 164th Ave	SE Mill Plain Blvd	SE 1st St	2000018[illegible]	1.79	2.19	0.40	1
Clark	Vancouver	NE 164th Ave / NE 162nd Ave	SE 1st St	NE 39th St	2000018[illegible]	2.19	4.21	2.03	1
Clark	Vancouver	NE 162 Ave	NE 39 St	SR 500	2000018[illegible]	4.21	5.72	1.51	1
Clark	Vancouver	NE Andresen Rd	NE Fourth Plain Blvd	Vancouver Mall Dr	2000015[illegible]	2.74	3.63	0.89	1
Clark	Vancouver	NE 112th Ave / Chaklov Dr	SE Mill Plain	NE 37 Cir	2000016[illegible]	0.45	2.43	1.98	1
Clark	Vancouver	Grand Blvd	E Fourth Plain Blvd	E 39rd St	2000014[illegible]	1.65	2.42	0.47	1
Clark	Vancouver	Main St	E40th St	NE 45th St	2000009[illegible]	1.84	2.07	0.24	1



Match section and checked NHS box

NHS StreetSaver Matching Process

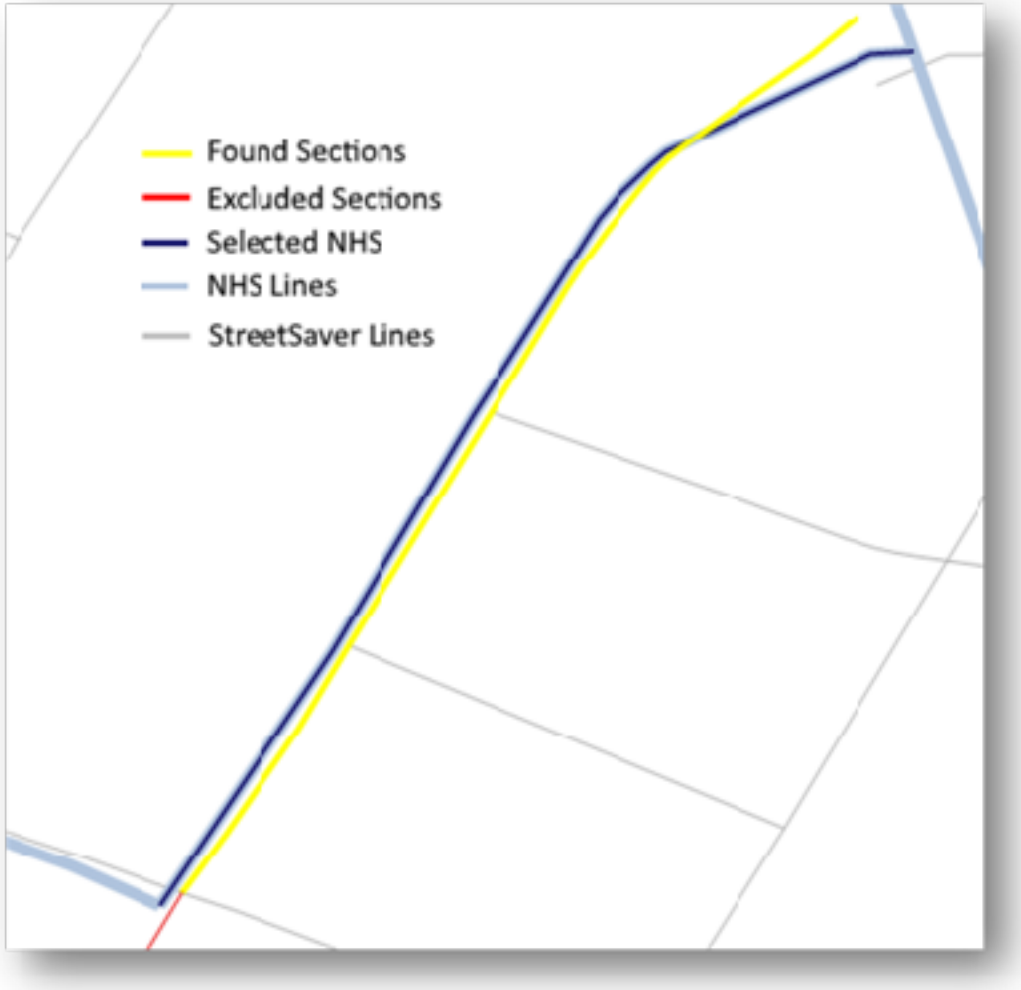
Data Requirement:

- NHS data in GIS shapefiles

NHS StreetSaver Matching Process

Two-step process:

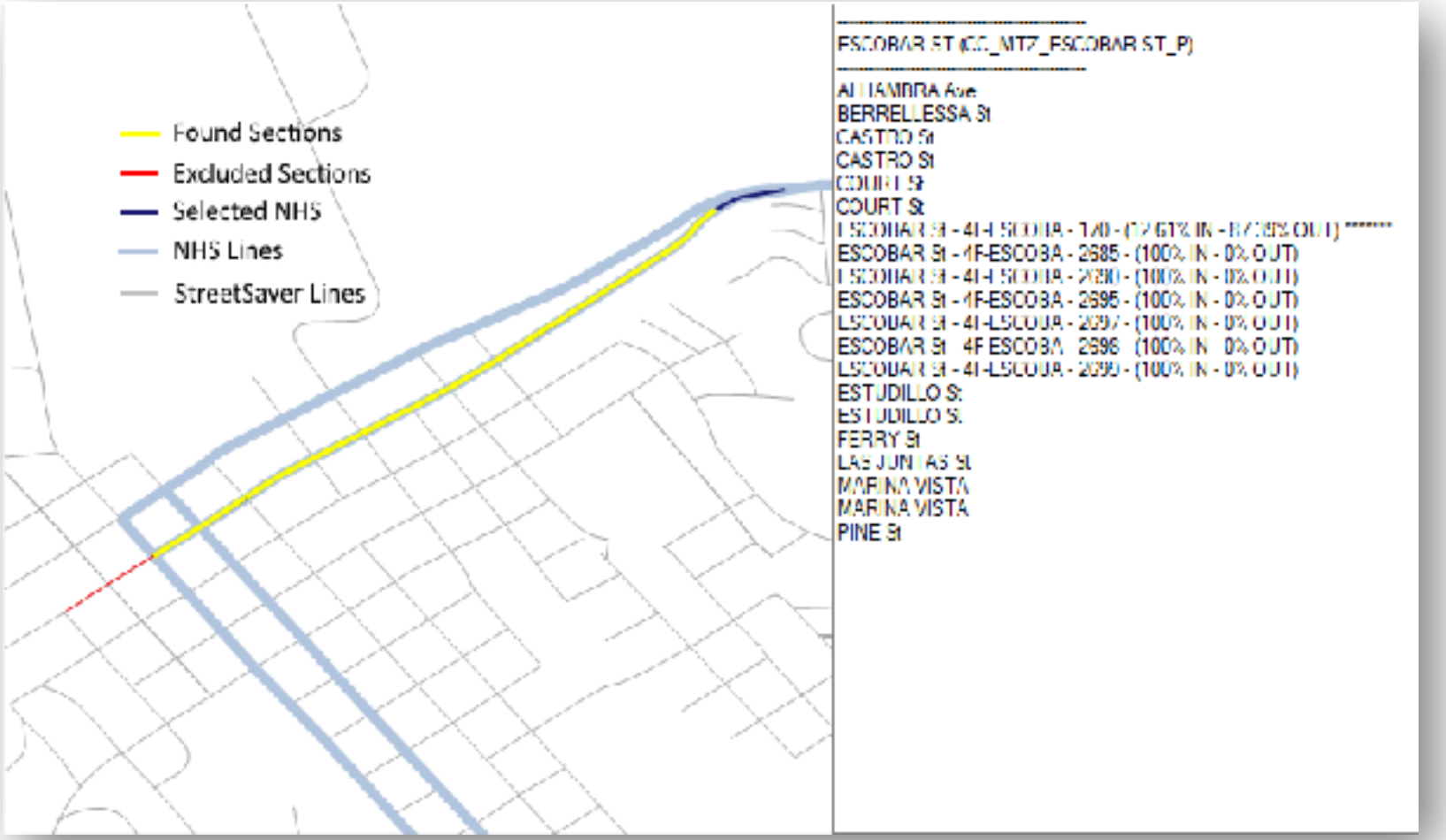
- Spatial Query Matching:



NHS StreetSaver Matching Process

Two-step process:

- Street Name Matching:



MPO/RTPA Target Reporting

Caltrans' approach:

Method A: Agency adopts "statewide" targets

Method B: Agency provides expenditures for pavement and uses state PMP to set targets

Method C: Agency determines their own targets

MTC selects "Method C"

Performance Report

MTC SF region – 9 Counties & 100 cities

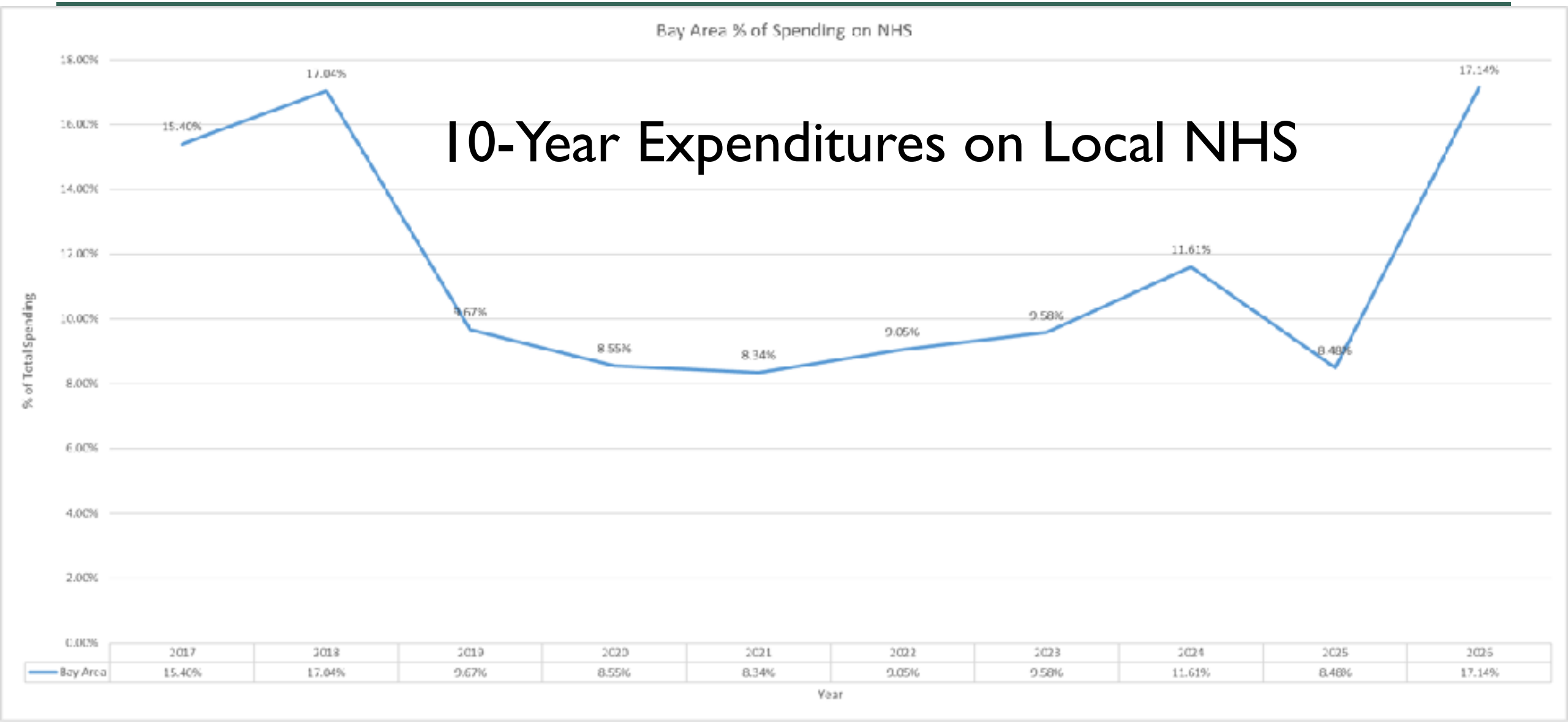
NHS TOTAL INVENTORY	
Asset Inventory (All)	**2017/18 Total Inventory**
***Pavement (# of lane miles)**	3,056 lane miles of NHS
	42,273 lanes miles of total LSR inventory

Performance Report

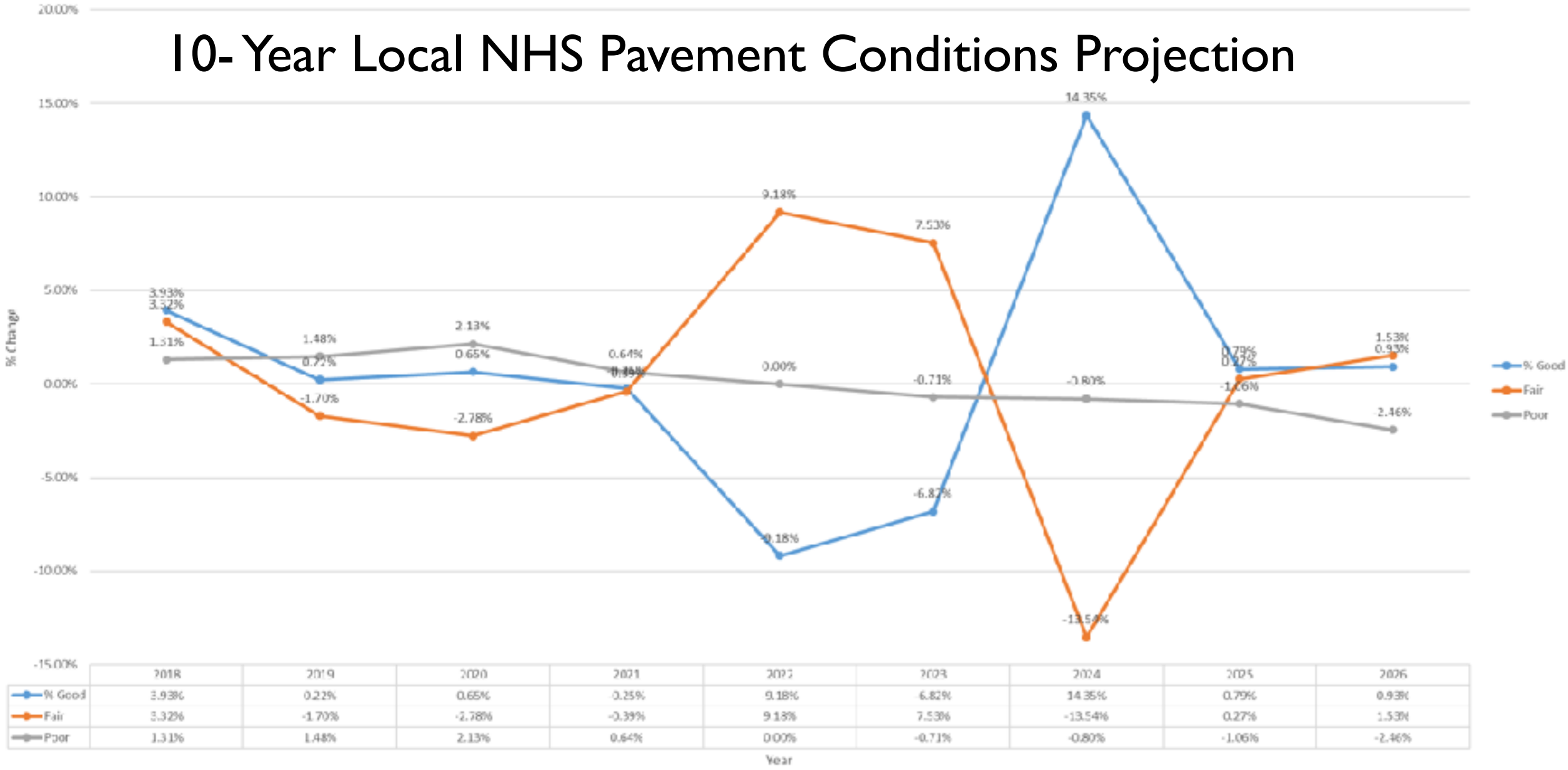
Initial Phase: Current Expenditure Scenario
(State of Good Repair later)

10-YEARS PLANNED FUNDING		
FY	**NHS Pavement**	**Total Pavement**
2017/18	$95,945,930	$623,014,392
2018/19	$105,820,326	$620,992,440
2019/20	$55,248,599	$571,462,092
2020/21	$49,480,117	$578,579,746

10-Year Expenditures on Local NHS



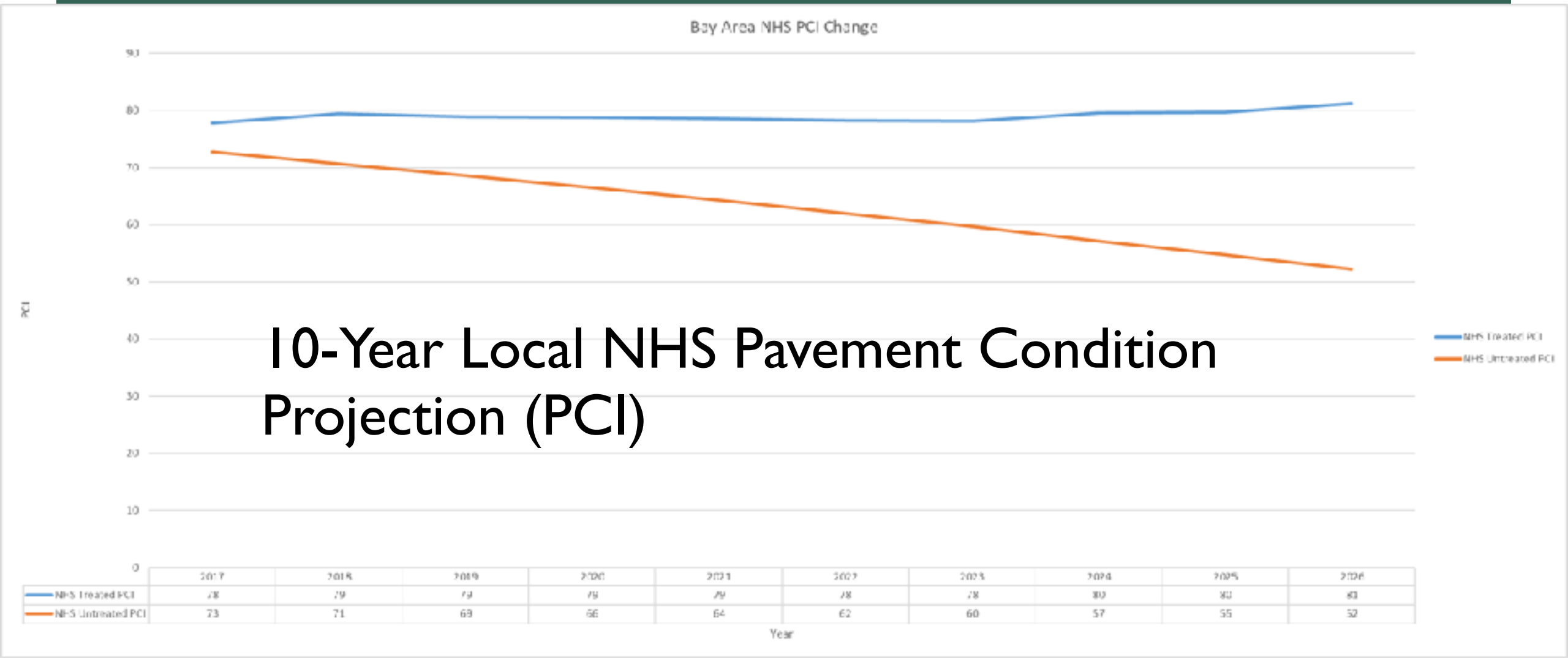
10- Year Local NHS Pavement Conditions Projection



	2018	2019	2020	2021	2022	2023	2024	2025	2026
% Good	3.93%	0.22%	0.65%	0.25%	9.18%	6.82%	14.35%	0.79%	0.93%
Fair	3.32%	-1.70%	-2.78%	-0.39%	9.18%	7.53%	-13.54%	0.27%	1.53%
Poor	1.31%	1.48%	2.13%	0.64%	0.00%	-0.71%	-0.80%	-1.06%	-2.46%

Year

10-Year Local NHS Pavement Condition Projection (PCI)



U.S. Department of Transportation
Federal Highway Administration

TPM
HOW WE GET THERE

§ 490.311 Metric Thresholds in Final Rule

Rating	Good	Fair	Poor
IRI *(inches/mile)*	<95	***95-170***	***>170***
PSR* *(0.0-5.0 value)*	≥4.0	2.0-4.0	≤2.0
Cracking Percent *(%)*	<5	***CRCP: 5-10*** ***Jointed: 5-15*** ***Asphalt: 5-20***	***>10*** ***>15*** ***>20***
Rutting *(inches)*	<0.20	0.20-0.40	>0.40
Faulting *(inches)*	***<0.10***	0.10-0.15	>0.15
PCI ** *(0-100)*	>=85	84-40	<40

** Conversion based on PSR from expert opinions

Comparison of HPMS Metric Thresholds vs PCI

*PSR may be used only on routes with posted speed limit < 40mph.

3-1 Condition Rating Classifications Used in the 2015 C&P Report

Metric	Rating Criteria	Good	Fair	Poor
Ride	The International Roughness Index (IRI) measures the cumulative deviation from a smooth surface in inches per mile.	IRI < 95	IRI 95 to 170	IRI > 170
Ride (alternative)	For roads functionally classified as urban minor arterials, rural or urban major collectors, or urban minor collectors, States can instead report a Present Serviceability Rating (PSR) on a scale of 0 to 5.	PSR ≥ 3.5	PSR ≥ 2.5 and < 3.5	PSR < 2.5
Cracking	For asphalt pavements, cracking is measured as the percentage of the pavement surface in the wheel path in which interconnected cracks are present. For concrete pavements cracking is measured as the percent of cracked concrete panels in the evaluated section	<5%	5% to 10%	>10%
Rutting Pavements	Rutting is measured as the average depth in inches of any surface depression present in the vehicle wheel path	<0.20	0.20 to 0.40	>0.40
Faulting Pavements	Faulting is measured as the average vertical displacement in inches between adjacent jointed concrete panels.	<0.05	0.05 to 0.15	>0.15
Condition	Ratings are on a scale from 0 "Failed" to 9 "Excellent."	>7	5 to 6	<4
Superstructure	Ratings are on a scale from 0 "Failed" to 9 "Excellent."	≥7	5 to 6	≤4
Substructure	Ratings are on a scale from 0 "Failed" to 9 "Excellent."	>7	5 to 6	<4
Condition	Ratings are on a scale from 0 "Failed" to 9 "Excellent."	≥7	5 to 6	≤4

NPRM sets a different standard for Fair versus Poor ride quality in areas with population over 1 million, setting the break point at 220 rather than 17 did not follow this approach, in order to better align with the definition of Acceptable ride quality traditionally used in this report, which includes with IRI values < 170 inches per mile

FHWA has raised the bar since 2015 C&P Report

2015 California Local, Federal, and Tribal NHS Pavement Inventory and Conditions by MPO/RTPA

MPO/RTPA	County	Road Miles	Lane Miles				Percentage		
			Total	Good	Fair	Poor	Good	Fair	Poor
Butte CAG		29	69	6	57	6	8.51%	82.73%	8.76%
Fresno (COFCG)									7.05%
Glen CTC									0.56%
Humboldt CAG									8.90%
Kern COG									3.67%
Kings CAG									1.85%
Lassen CTC									0.00%
Madera CTC									9.29%
Merced CAG									20.80%
Monterey (AMBAG)		80	220	17	193	10	7.83%	87.70%	4.47%
	Monterey County	52	143	13	122	8	9.16%	85.23%	5.61%
	San Benito County	6	17	2	15	0	11.00%	87.78%	1.22%
	Santa Cruz County	22	60	2	56	2	3.77%	93.60%	2.63%
MTC		945	2,986	65	2,714	207	2.16%	90.90%	6.94%
	Alameda County	193	570	5	526	48	0.80%	90.00%	8.21%
	Contra Costa County	198	613	15	574	24	2.49%	93.60%	3.91%
	Marin County	26	72	1	67	4	1.70%	92.84%	5.46%
	Napa County	10	29	0	25	4	0.00%	86.21%	13.79%
	San Francisco County	95	320	0	279	40	0.15%	87.31%	12.55%
	San Mateo County	19	51	0	48	3	0.87%	93.83%	5.31%
	Santa Clara County	290	974	34	881	59	3.44%	90.45%	6.11%
	Solano County	91	287	6	250	32	2.06%	89.25%	8.69%

Pavement conditions based on IRI, Crack %, Rutting or Faulting by Caltrans

Condition based on PCI vs IRI & 3 Metrics

MPO		Lane Miles				Percentage		
MTC	Road Miles	Total	Good	Fair	Poor	Good	Fair	Poor
PCI	963	3,068	723	2,208	137	24%	72%	4%
IRI +	945	2,986	65	2,714	207	2%	91%	7%
DIFF						~ 20%	~ 20%	~ 3%

Stop – Roger's slides

Challenges

- Difference pavement conditions between DOT and local
- Whose targets to use?
- Whose funding to use? NHPP? STP? Local?
- IRI collection errors in urbanized areas
- How to reconcile performance metrics differences?
- What happened if MPO's targets not met?

Next Steps

- Present and discuss findings to FHWA in Jan @ TRB
- Work out solutions and get approval from FHWA
- Coordinate with State DOT and MPOs for HPMS reporting