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The Impact of Restoration on Johnson Creek Flooding

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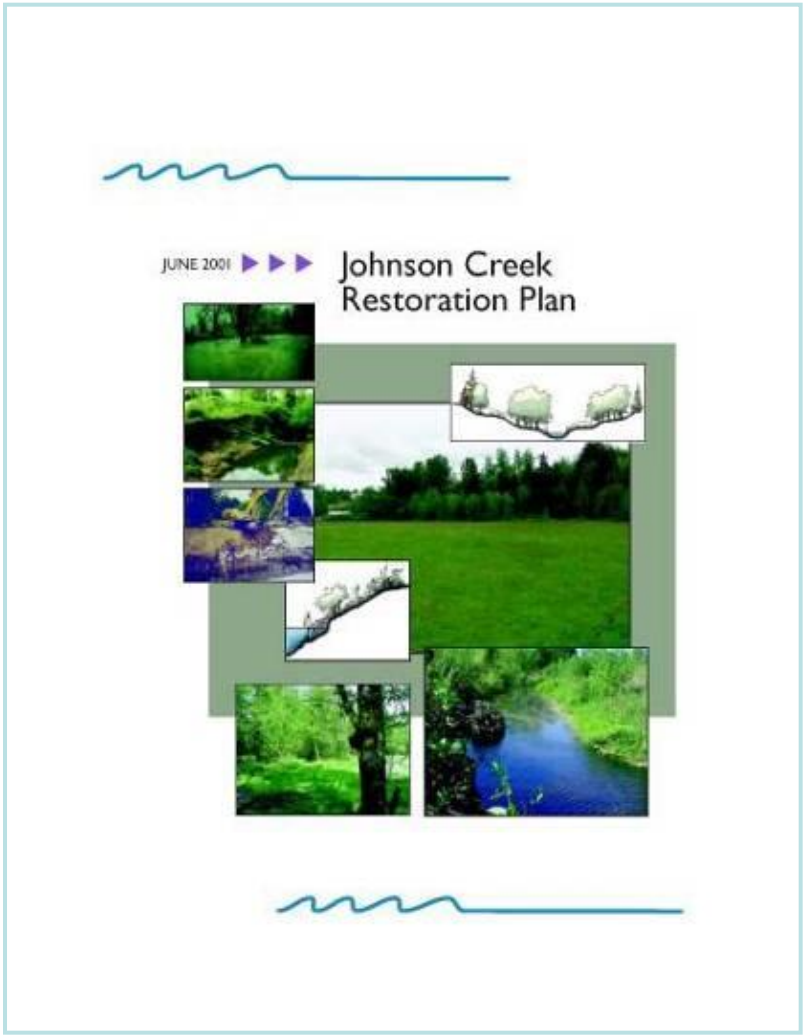
Today's Presentation

- Johnson Creek Restoration Plan overview
- Project highlights
- Impact on flood regimes
- Next steps

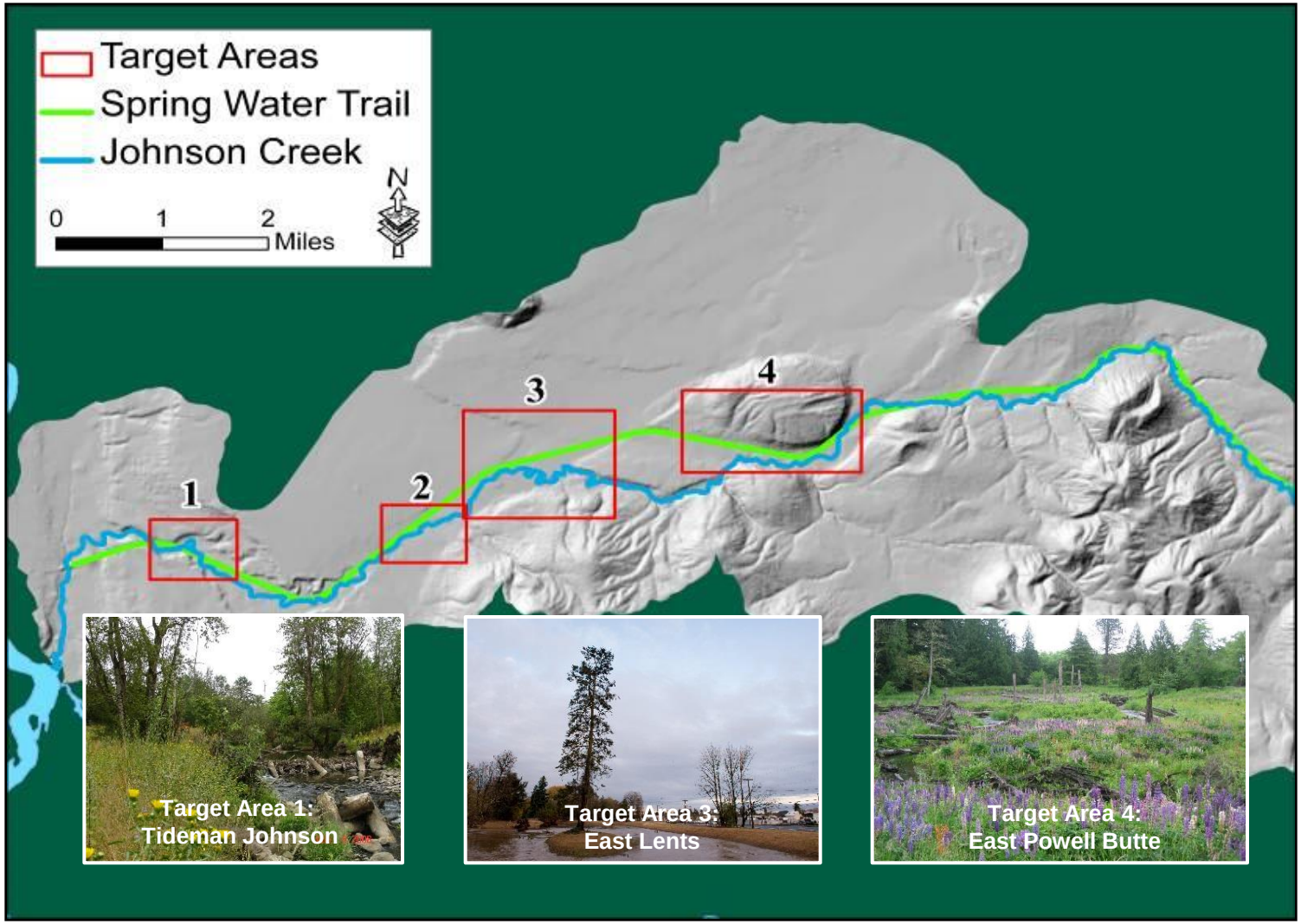
Johnson Creek Restoration Plan 2001

Goals:

- Improve water quality
- Enhance fish and wildlife habitat
- Mitigate the nuisance (10-year) flood



Johnson Creek Restoration Plan 2001



East Powell Butte – *Schweitzer Project*

Johnson Creek Restoration Plan

Results to date:

145 acres restored

9 major projects completed

2.5 stream miles restored

250 acre-feet of flood storage added

Work to do:

300 additional acre-feet of storage needed within Portland

1,800 additional acre-feet of flood storage needed watershed-wide

Flood Conditions – *Nuisance Flooding*

- Foster Road flooded every other year
- Frequent flooding at Bell Station
- Localized flooding in other areas

Flood Conditions – *2009*

Floodplain Restoration – *Foster Floodplain*

Completed in 2013

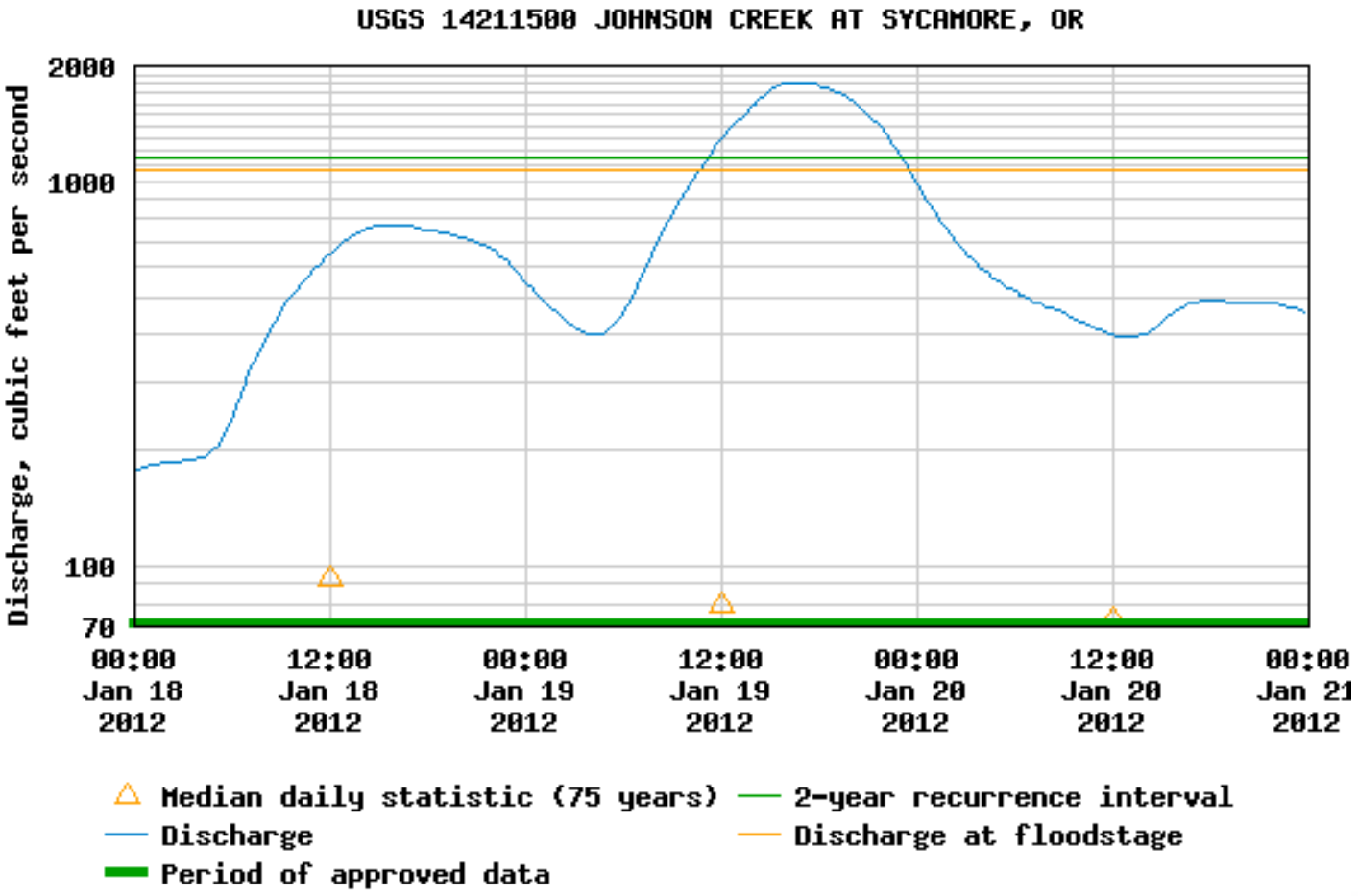
- 70 acres
- Added 120 acre-feet of flood storage
- Restored 3,800’ streambank
- Reduced flooding every 6-8 years

Flood Conditions: *2012*

5.4 year storm

13.21’ peak

1,820 cfs



Flood Conditions

January 2009

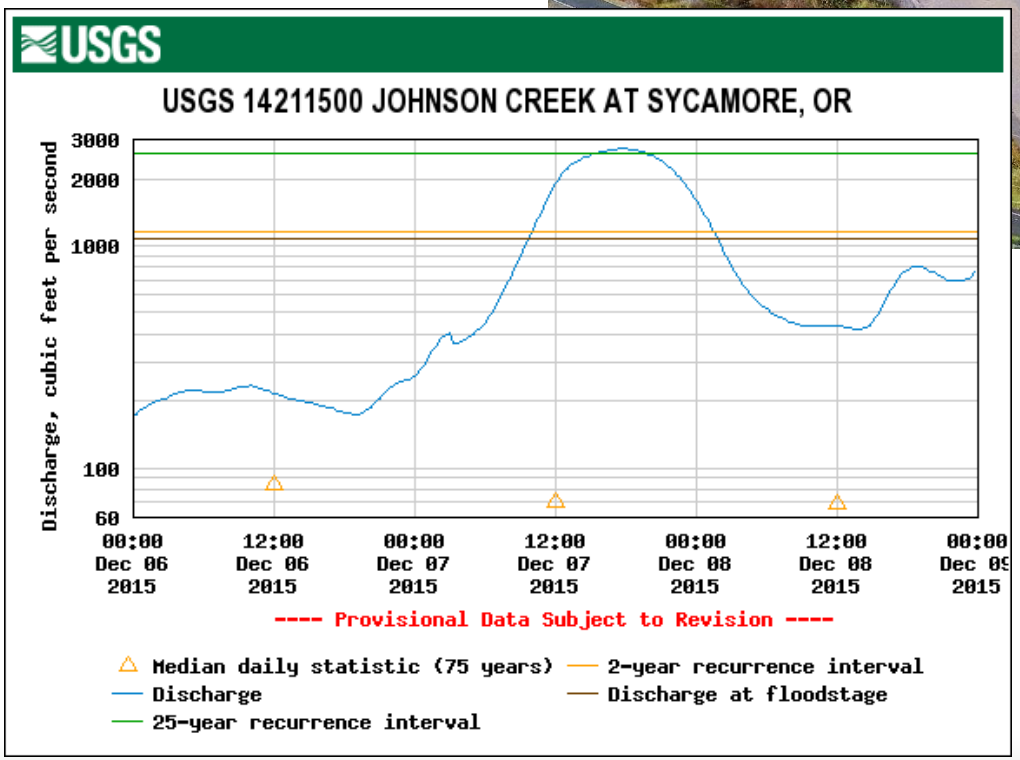
January 2012

Flood Conditions: *December 2015*

25 year event

15.33’ peak

2,740 cfs



So it helped?

Yes, but…

It's complicated…

- Rainfall
- Peak
- Volume
- Duration

Water Year	Date	H (ft)	Q (cfs)
2015	Dec. 07, 2015	**15.33**	**2,740**
1997	Nov. 19, 1996	15.30	2,550
2009	Jan. 02, 2009	14.69	2,590
1965	Dec. 22, 1964	14.68	**2,620**
1996	Feb. 07, 1996	14.28	2,350
1949	Feb. 10, 1949	13.77	2,110
2012	Jan. 19, 2012	13.21	1,820

Next Steps – *Analysis*

- Establish new flood stages
- Update flood models

Flood Categories (in feet)

Major Flood Stage:	14
Flood Stage:	11
Action Stage:	10

Historic Crests
(1) 15.33 ft on 12/07/2015
(2) 15.30 ft on 11/19/1996
(3) 14.69 ft on 01/02/2009
(4) 14.68 ft on 12/22/1964
(5) 14.50 ft on 12/01/1937
Show More Historic Crests

(P): Preliminary values subject to further review.

Recent Crests
(1) 15.33 ft on 12/07/2015
(2) 13.21 ft on 01/19/2012
(3) 14.69 ft on 01/02/2009
(4) 11.90 ft on 12/03/2007
(5) 11.28 ft on 12/14/2003
Show More Recent Crests

(P): Preliminary values subject to further review.

Low Water Records
(1) 0.33 ft on 08/14/1940
(2) 0.65 ft on 08/18/1959
(3) 0.70 ft on 09/06/1955
Show More Low Water Records

FEMA

For more information on your flood risk go to www.floodsmart.gov.

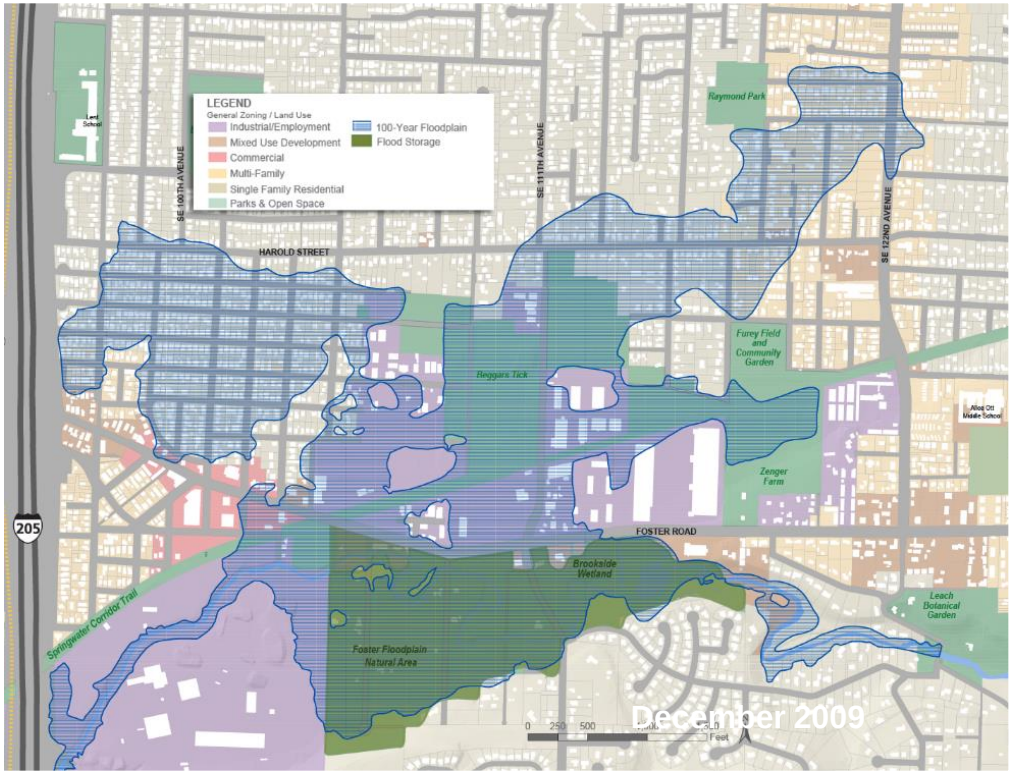
Next Steps – *Implementation*

Continue Johnson Creek Restoration Plan

- Springwater Wetlands
- Willing Seller Program

Next Steps – *Lents Stabilization*

- Multi-stakeholder effort
- Mitigate 100-year flood
- Stabilize housing
- Promote job growth



Thank you!