

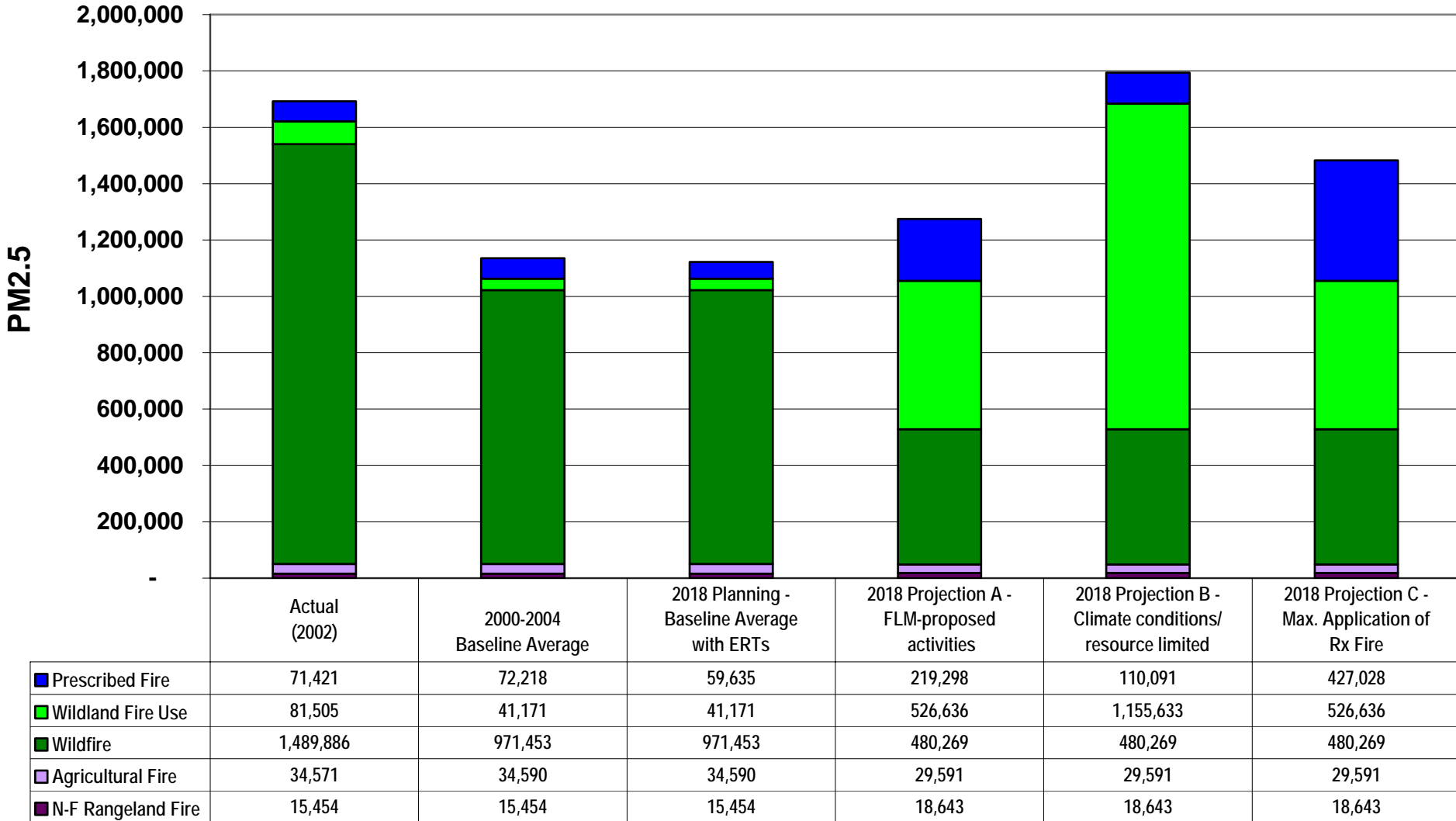


Fire Emissions Inventories for Regional Haze Planning

Implementation Workgroup

April 17, 2007

WRAP Region Fire PM2.5 Emissions Scenarios (tpy)



2018 Planning - Seasonal Suites of Emissions Reduction Techniques (ERTs)

- **List common combinations of ERTs applied during each season for the four vegetation types (Grass, Brush, Timber, Crop).**
- **From available Emission Reduction Factor (ERF) information, assign a single ERF to each seasonal suite of ERTs.**
 - **Input from Regional Experts**
 - **SW – Fitch/Lahm, USDA FS**
 - **NW – Russell, USDA FS/USDO I BLM**
 - **IMW – Paintner, USDoI NPS**
- **Prepare the Seasonal Suite table for each sub-region.**

2018 Planning - Seasonal ERT Suites

Northwest¹

	Grass	Ref	Brush	Ref	Timber	Ref	Crop (ag)	Ref
Seasonal ERT Suites:								
Spring	55%	5,6,7,9,10,11,14,18	70%	3,8,9,12,13,	40%	1,12,15,16,18,19,22	0%	
Summer	65%	18,6	45%	6,7,10,11,18	45%	1,2,3,4,22	20-40%	1,2,3,10
Fall	65%	9,10,11	65%	3,10,11,13,18	40-65%	1,2,4,12,13,17,18,21,22	60-80%	20,21,22
Winter	10%	5,9,12	70%	15,9	10-40%	12,13,15,16,17,20,21,22	70-80%	20,21,22

Southwest²

	Grass	Ref	Brush	Ref	Timber	Ref	Crop (ag)	Ref
Seasonal ERT Suites:								
Spring	55%	5,6,9,10,11,18	45%	3,5,6,8,9,10	45%	1,7,8,9,10,12,13,15,16,18,19	50%	3,10,11,21
Summer	55%	5,6,9,10,11	40%	5,6,7,8,18	30%	1,10,12,17,19	50%	3,10,11,21
Fall	55%	5,6,7,10,11,12,13,18	45%	3,5,10,11,13,18	45%	1,2,3,4,10,11,12,13,16,17,18,19	70%	3,10,11,21
Winter	55%	5,6,10,11,13,18	45%	3,5,10,11,13,18	60%	1,10,11,12,13,19,21	70%	3,10,11,21

Intermountain West³

	Grass	Ref	Brush	Ref	Timber	Ref	Crop (ag)	Ref
Seasonal ERT Suites:								
Spring	55%	5,6,7,9,10,11,14,18	40%	3,5,6,9,13	40%	1,9,10,12,13,15,16,18,19,21	50%	10,11
Summer	60%	5,6,10,11,18	40%	5,6,7,10,11,13,18	45%	1,2,3,4,10,12,19	40%	1,3,10,11
Fall	65%	5,6,7,10,11,18	60%	3,5,10,11,13,18	60%	1,2,4,10,12,13,17,18,19,21	70%	10,20,21,22
Winter	25%	5,6,9,10,11,18	50%	3,5,9,13,15,17,18	20%	10,12,13,15,16,19,20,21	0%	

Example ERT Suite

Northwest¹

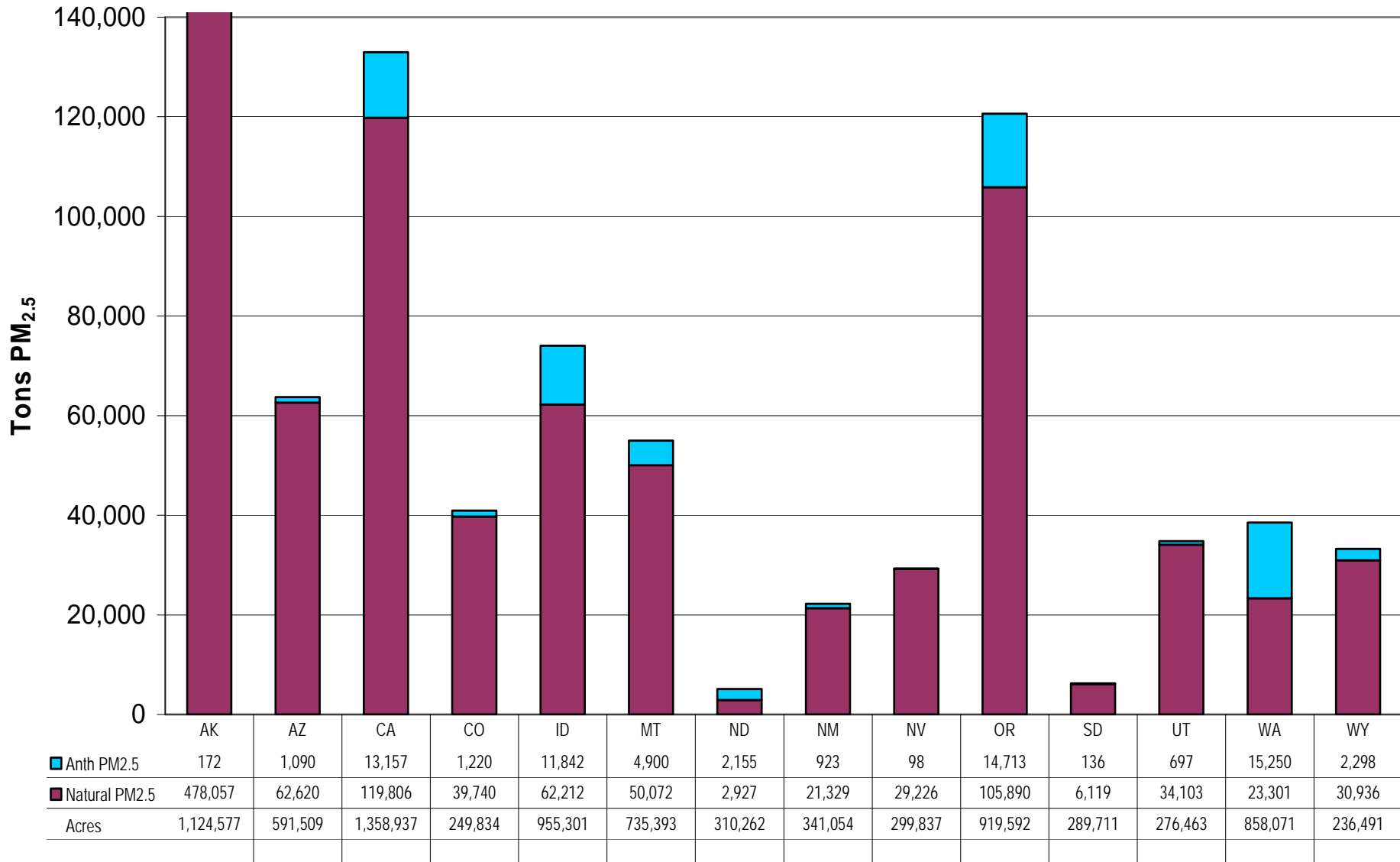
Timber

Fall	40-65%	1,2,4,12,13,17,18,21,22
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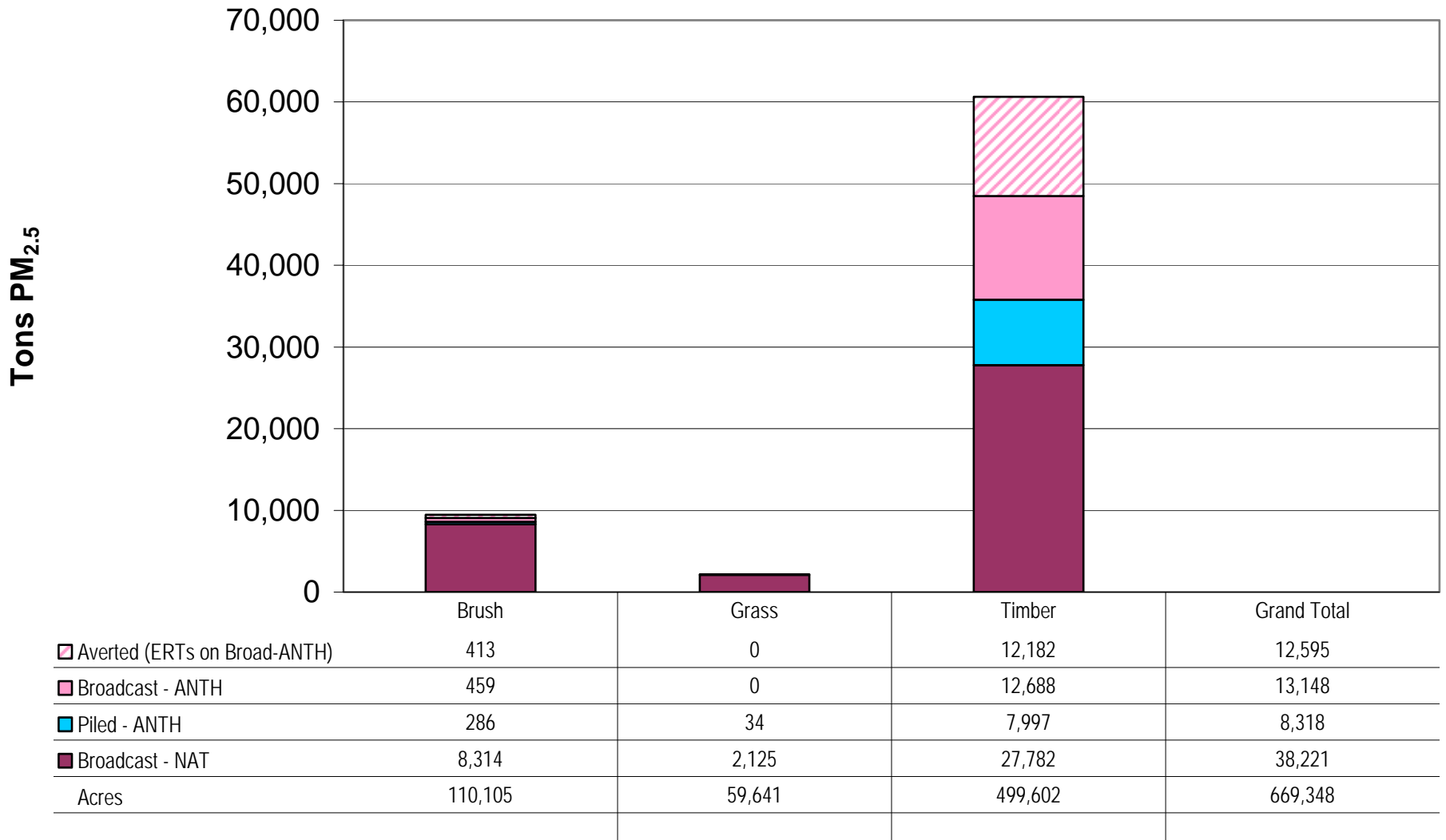
	Emissions Reduction Method	ERT Cat	Definition
1	Pre-Burn Fuel Removal	2	(Mechanical removal.) Includes mechanical removal of logging debris from clearcuts, onsite chipping of woody material and/or brush for offsite utilization, and mechanical removal of fuels which may or may not be followed by offsite burning in a more controlled environment.
2	Firewood Sales	2	Removal of woody debris using firewood
4	Biomass Utilization (except for Elect Gen)	2	17 Burn Before Large Activity Fuels Cure
			4 Burning activity-generated fuels within 3-4 drying months of timber harvests to reduce the consumption of large fuels due to residual live fuel moisture.
			18 Aerial Ignition/Mass Ignition
			6 Ignition techniques to shorten the duration of the smoldering fire and reduce the total amount of fuel consumed.
12	Isolating Fuels	1	21 Pile Burning
			6 Fuels concentrated into clean and dry piles generate greater heat and burn more efficiently. A greater amount of consumption occurs in the flaming phase and the emission factor is lower. (brush; forest)
13	Concentration Burning	1	22 Air Curtain Incinerators
			6 Burning fuels in a large metal container or pit with the aid of powerful fan-like device to force additional oxygen in to the combustion process.

2018 Planning - Baseline Average with ERTs

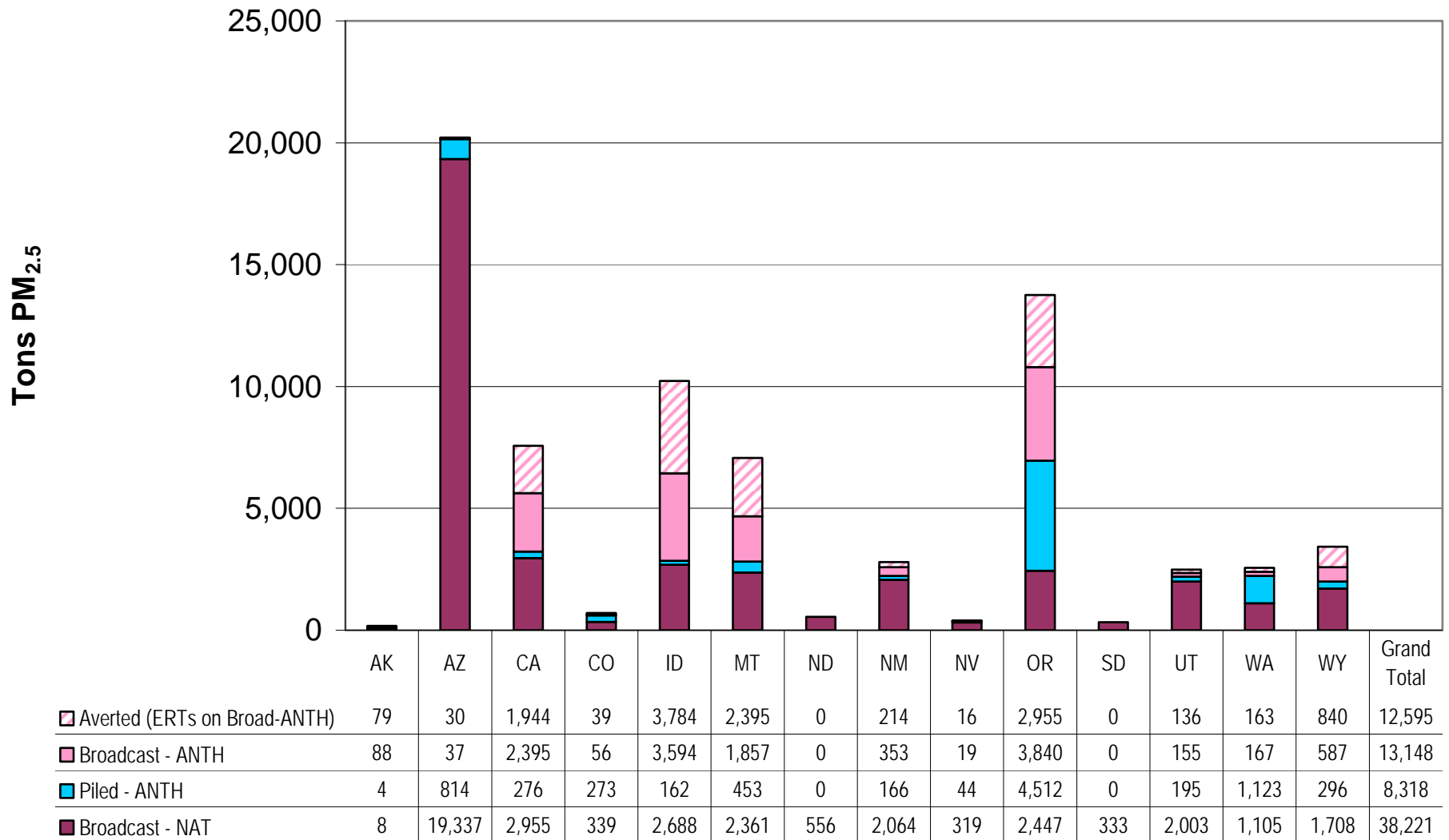
Baseline Emission Inventory: Natural vs. Anthropogenic PM_{2.5} Emissions



2018 Planning - Baseline Average with ERTs Prescribed Burning by Fuel Type: Emissions Averted



2018 Planning - Baseline Average with ERTs Prescribed Burning by State: Emissions Averted



2018 Planning - Baseline Average with ERTs Agricultural Burning by State: Emissions Averted

