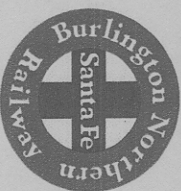


**Charts Supporting Testimony of Mark Stehly**  
**Assistant Vice President for Environment & Research and Development**  
**BNSF Railway**

**BNSF**



## How California MOUs Have Driven Air Quality Improvements & Investments

Locomotive Technologies	First Year Available	# of Units	Percent of CA Fleet	NOx Reduction from baseline (per unit)	Incremental Air Quality Investment Nationwide to date	Incremental Air Quality Investment In CA Driven by MOUs by 2010	Are Any Other Mobile Sources Required to Make this type of investment?
Mandatory Re-Build --Tier 0 (22% Complete Nationally)	2000	2940		30%	\$147 million		NO
Buy New Units -- Tier1	2002	1655		45%			YES
Buy New Units -- Tier 2	2005	640		60%			YES
Future Additional Line-haul Units to comply with the 1998 MOU	2005	80				\$160 million	NO
Ultra Low-Emitting California Switchers (Today)	2000	9	6%	80%		\$10.8 million	NO
Additional ULEL California Switchers (By 12/07)	2005	68	45%	80%		\$81.6 million	NO
Automatic Shutdown Devices							NO
Line-haul units nationally (35%Complete)	2001	4500			\$17 million		
California units (Completed)		138	32%			\$ 2.7 million	NO
California units (Future by 6/08)		290	68%			\$ 5.8 million	NO
Total Air Quality Investment					\$164 million	\$ 260.9 million	

☐ 1998 MOU

☐ 1998 and 2005 MOU

☐ 2005 MOU



## Comparison of Mobile Source Requirements (South Coast Inventory #'s 2010)

	Trucks	Off-Road Equipment	Ships	Aircraft	Urban Buses	Locomotives
Inventory NO <sub>x</sub>	21%	17%	7%	4%	2%	3%
PM	2.4%	7.9%	3.2%	4%		.8%
Standards for New Units	Yes	Yes	Yes	Yes	Yes	Yes
Retrofit Existing Units	No	No	No	No	Yes	Yes (22% Done)
Rebuild to New Standards	No	No	No	No	No	Yes
NO <sub>x</sub> Fleet Average in SCAQMD	No	No	No	No	No	Yes
Statewide PM 2005 MOU	No	No	No	No	No	Yes