

ESPA CAMP Weather Modification Cost Estimate

Component	Unit Cost	Season					
		'08-'09	'09-'10	'10-'11	'11-'12	'12-'13	'13-'14'
Ground Generator's		\$ 173,706	\$ 296,000	\$ 435,000	\$ 574,000	\$ 641,000	\$ 641,000
Manual (existing County)		\$ 100,956	\$ 117,000	\$ 117,000	\$ 117,000	\$ 117,000	\$ 117,000
Remote (Idaho Power)		\$ 72,750	\$ 179,000	\$ 318,000	\$ 457,000	\$ 524,000	\$ 524,000
# Units		3	10	20	30	35	35
Capital Equipment Cost / yr (10 yr life)	\$ 2,500 per year	\$ 7,500	\$ 25,000	\$ 50,000	\$ 75,000	\$ 87,500	\$ 87,500
O&M		\$ 65,250	\$ 154,000	\$ 268,000	\$ 382,000	\$ 436,500	\$ 436,500
Data		\$ 50,850	\$ 28,050	\$ 50,850	\$ 50,850	\$ 50,850	\$ 50,850
Rawinsonde							
Equipment (10 yr life)	\$ 2,000 per year	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000
O&M	\$ 26,050 per year	\$ 26,050	\$ 26,050	\$ 26,050	\$ 26,050	\$ 26,050	\$ 26,050
Radiometer							
Equipment (10 yr life)	\$ 18,000 per year	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000	\$ 18,000
O&M	\$ 4,800 per year	\$ 4,800	\$ 4,800	\$ 4,800	\$ 4,800	\$ 4,800	\$ 4,800
Aircraft	\$ 425,000 per year	\$ 4,000	\$ 425,000	\$ 425,000	\$ 425,000	\$ 425,000	\$ 425,000
Evaluate Feasibility	\$ 4,000	\$ 4,000					
Aircraft Operations	\$ 425,000		\$ 425,000	\$ 425,000	\$ 425,000	\$ 425,000	\$ 425,000
Assessment		\$ 2,500	\$ 6,500	\$ 6,500	\$ 305,013	\$ 305,013	\$ 6,500
Trace Chemistry	\$ 250,000				\$ 298,513	\$ 298,513	
Target Control	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500	\$ 2,500
NWSRFS modeling	\$ 2,000 per week	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000	\$ 4,000
Sampling Background Silver	\$ 125,000 per session		\$ 125,000			\$ 125,000	\$ 125,000
Total Project Cost - including aircraft & assessment		\$ 227,056	\$ 334,550	\$ 1,042,350	\$ 1,354,863	\$ 1,421,863	\$ 1,248,350
Total Project Cost - excluding assessment		\$ 224,556	\$ 328,050	\$ 1,035,850	\$ 1,049,850	\$ 1,116,850	\$ 1,241,850
Total Project Cost - excluding aircraft		\$ 227,056	\$ 330,550	\$ 617,350	\$ 929,863	\$ 996,863	\$ 823,350
Total Project Cost - excluding aircraft & assessment		\$ 224,556	\$ 324,050	\$ 610,850	\$ 624,850	\$ 691,850	\$ 816,850

Notes:

Actual for '08-'09, '09-'10 & later est based 25 gens for 5750 hrs ⁽¹⁾

Estimating optimum buildout at 35 generators
Annualized capital cost of remote generators.

IPC Labor⁽²⁾, equipment maintenance, communication,

Annualized capital cost of equipment.

Assumes 100 launches / year⁽³⁾

Annualized capital cost of equipment.

Equipment maintenance (labor)⁽⁴⁾

Per Hans Ahless, WMI (based on Payette)

Based on 2003 Payette assessment

Based on '08 - '09 analysis

Based on ROUGH estimate from DRI for Payette to sample silver in watershed. Repetative sampling would need to occur over time. ⁽⁵⁾

Notes: All estimates are in 2009 dollars. No inflation added.

All capital costs assume an equipment life of 10 years, straight line depreciation.

Radiometer will be in Payette during '09-'10

(1) It is possible that the number of manuals may reduce as more remotes come on line.

(2) Labor includes a meteorologist and 2 specialist in addition to crew required for Payette.

(3) \$75/launch, \$175/mo facility, \$150/sonde, \$25 Helium/launch

(4) Assume 2 days / month maintenance, 6 months / yr

(5) Baseline data would be useful for permitting on federal lands as well as addressing toxicity concerns.