Pluralistic Utilitarianism – Application to chemical plant site selection and capacity

Outcome	Pluralistic Utility
No new jobs	
Create 25 jobs	
Create 50 jobs	
Create 100 jobs	
No New Revenue	
Bring $1MM/yr to town	
Bring $2MM/yr to town	
No new Smells	
Foul smell in town 10 days/yr	
Four smell in town 40 days/yr	
No plume	
Fatal Plume extends 1 mile	
Fatal Plume extends 5 miles	
Fatal Plume extends 10 miles	
Fatal plume overlays town	
Fatal plume boundary within 4 miles of town	
Fatal plume boundary within 5 miles of town	
Fatal plume boundary within 10 miles of town	

Assign a number to quantify the utility of an outcome.

You can use positive or negative but avoid infinity (Why?).

There are a lot of these so decide quickly.

MM = 10^6

Facts that might influence your evaluation of utility:

50 qualified people are unemployed in town. I.e. the town needs 50 jobs.
Total annual school taxes are $333,000.
The fatal plume radius depends only on plant capacity and is a once in 1000 year event. Just assume the plant MUST come with this risk.

Then evaluate the Utility of each site/capacity

Site; Plant Capacity	Jones Farm 10MMPPY	Utility	Abdul Farm 50MMPPY	Utility	Abdul Farm 100MMPPY	Utility	Back 40 100MMPPY	Utility	Back 40 50MMPPY	Utility	No New Plant	Utility
Jobs Created	25		50		100		100		50		0	
New Rev to Town $MM	1		2		2		2		1		0	
Expected Smells	10 days		40 days		40 days		10 days		10 days		0 days	
Plume extent	1		5		10		10		5		0	
Distance from Town miles	5	-----	2	-----	2	-----	15	-----	15	-----	--	-----
Fatal Plume Approach miles	4 miles		Overlays Town		Overlays Town		5 miles		10 miles		--	
Total Utility	-----		-----		-----		-----		-----		-----	

Are any options better than not building a plant?

If no, what happens if people DESPERATELY want jobs? Even in 1000 years, no one in town will die from the worst case plume with the Jones and Back 40 sites. Can plant construction there be an ethical decision?