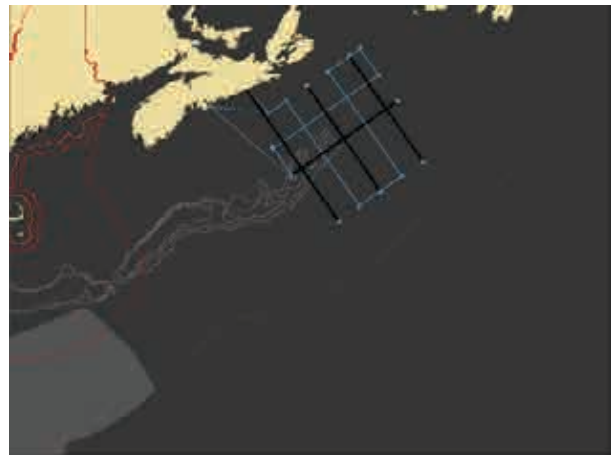
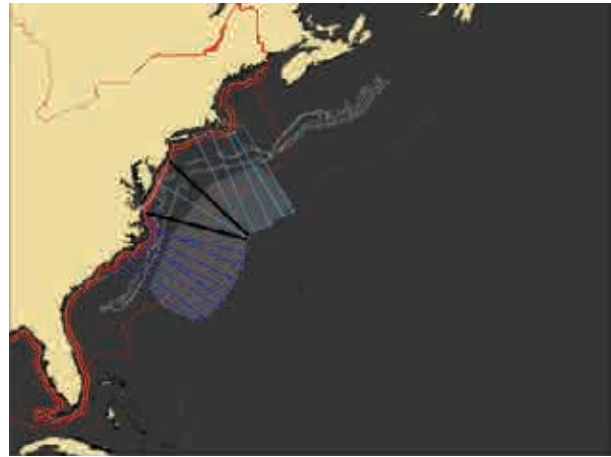
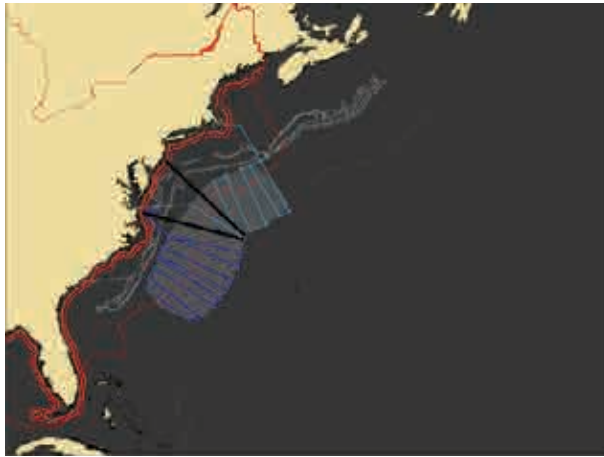


## A few (marine) experiment scenarios



GeoPRISMS ENAM luncheon at AGU 2011

## Facilities:

### Airguns + MCS:



*R/V Langseth (UNOLS)*

### OBS Deployments:



*From the Langseth OR  
an intermediate-global class  
general-use UNOLS vessel*

### OBS:

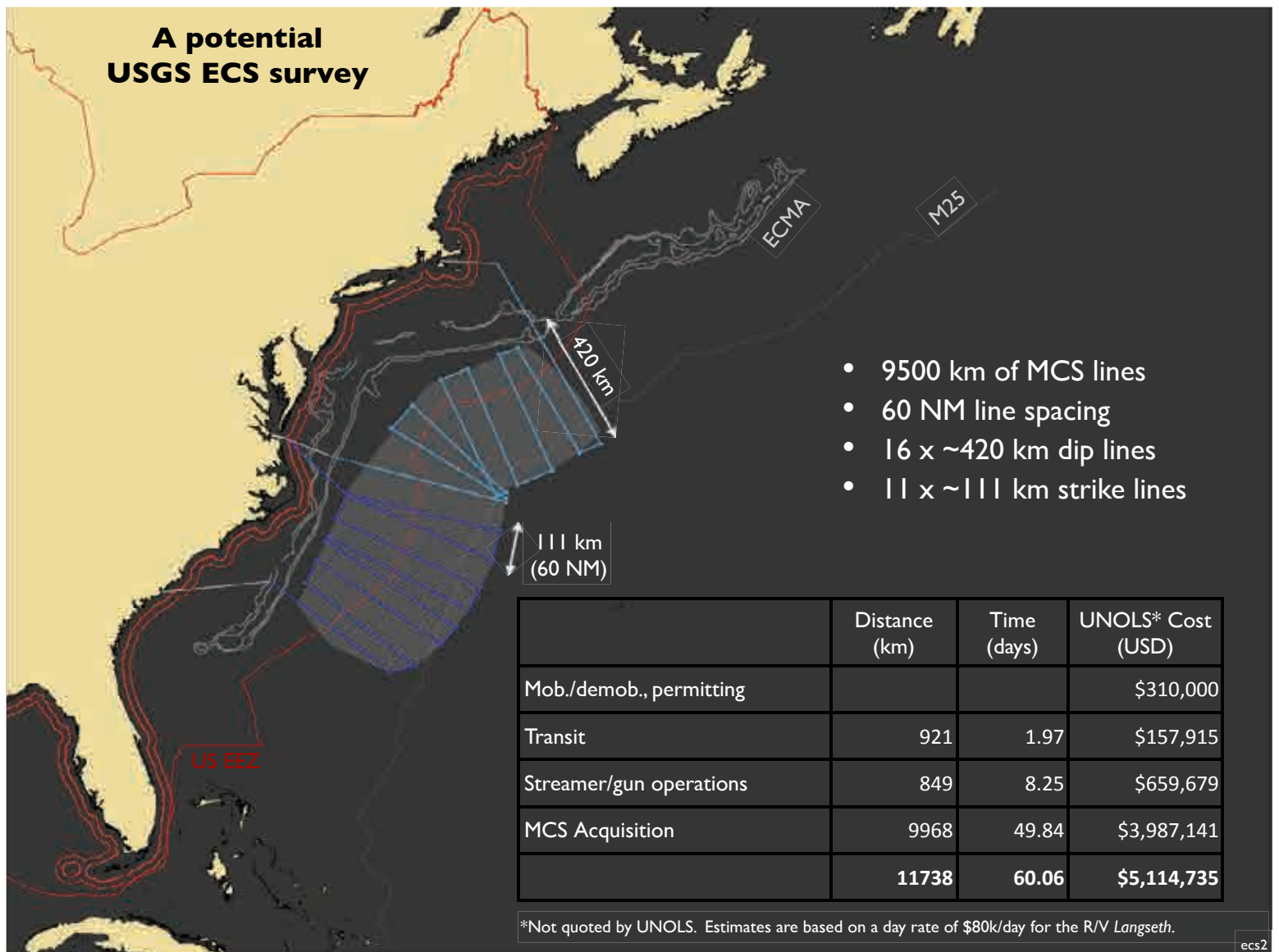


*Short period OBS from  
the US OBSIP:  
- 67 from SIO  
-30 from WHOI*

## Rates for budget estimates:

UNOLS	<b>R/V Langseth:</b> 10.5 kts transit speed, 4.5 kts MCS acquisition speed, assume \$80k/day cost to UNOLS <b>OBS Ship:</b> 11 kts transit speed, assume \$20-40k/day cost to UNOLS
OBSIP	<b>OBS drops:</b> \$2-3k/instrument drop cost + engineering support, shipping
Proposal	<b>Science salaries:</b> 2-3 chief scientists per ship at \$330/day + travel, travel costs for 4-5 students

## A potential USGS ECS survey



## Adding OBS lines to a USGS ECS survey

- 9400 km of MCS lines
- 2 x 850 km refraction lines
- 2 deployments of 100 OBS
- USGS: ~\$5.0M
- NSF: ~\$2.6M

	Distance (km)	Time (days)	UNOLS* Cost (USD)	OBSIP* Cost (USD)	Proposal Cost (USD)
Mob./demob., permitting			\$230,000		
Transit	1013	2.17	\$173,656		
Streamer/gun operations	250	3.25	\$260,000		
ECS MCS Acquisition	10732	53.66	\$4,292,676		
MCS Extensions	647	3.23	\$258,755		
OBS Acquisition	1652	8.26	\$660,712		
OBS ship and instruments	3299	24.49	\$734,842	\$836,160	
Science Salaries					\$85,404
	17592	95.07	\$6,610,641	\$836,160	\$85,404

\*Not quoted by UNOLS or OBSIP. Estimates are based on \$80k/day for the R/V *Langseth*, \$30k/day for an OBS ship, and recent informational budgets for OBS operations.

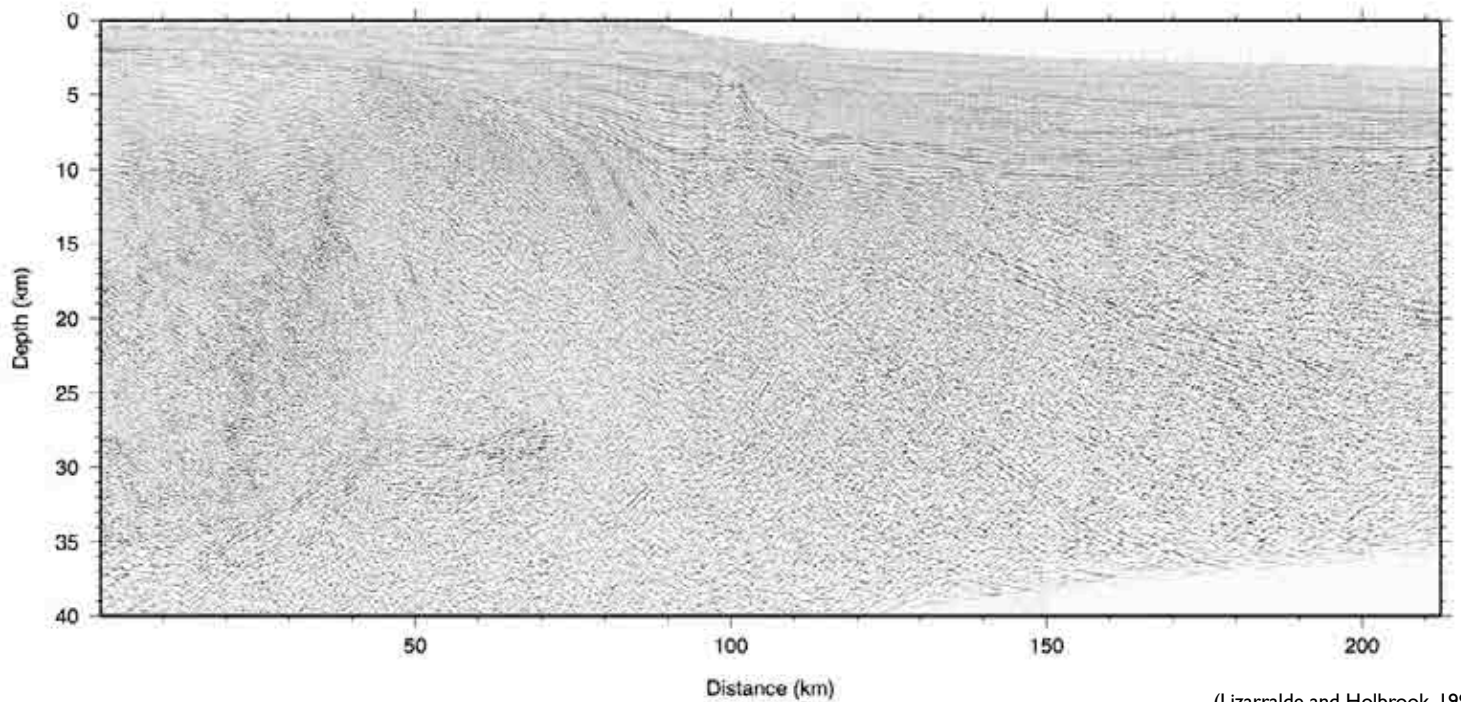
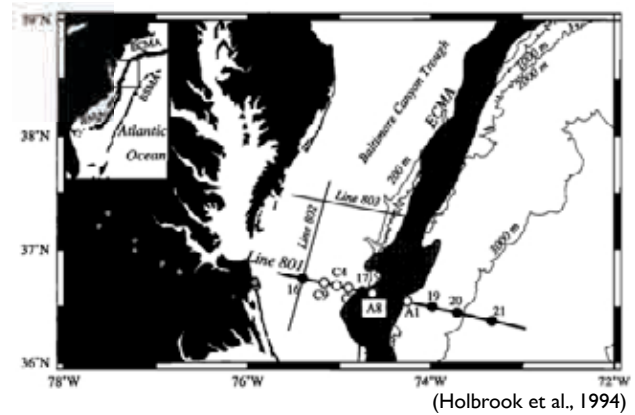
## EDGE Line 801: Depth imaging with MCS + wide-angle data

Ship: M/V Geco Searcher

Source: 36-element, 10800 cu. in. airgun array

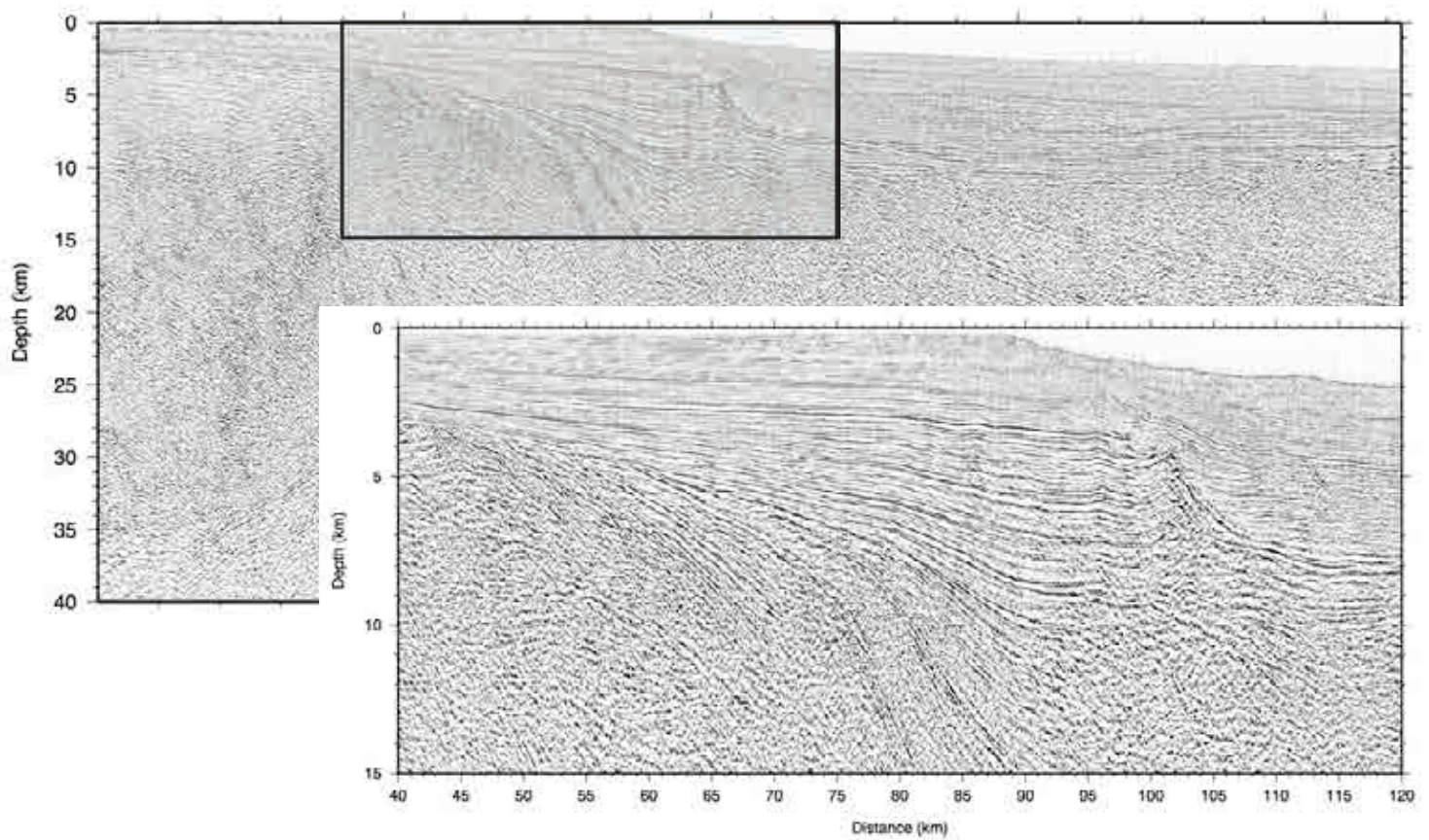
MCS: 240-channels, 6-km-long streamer

Wide-angle: 10 OBH, 20-km spacing



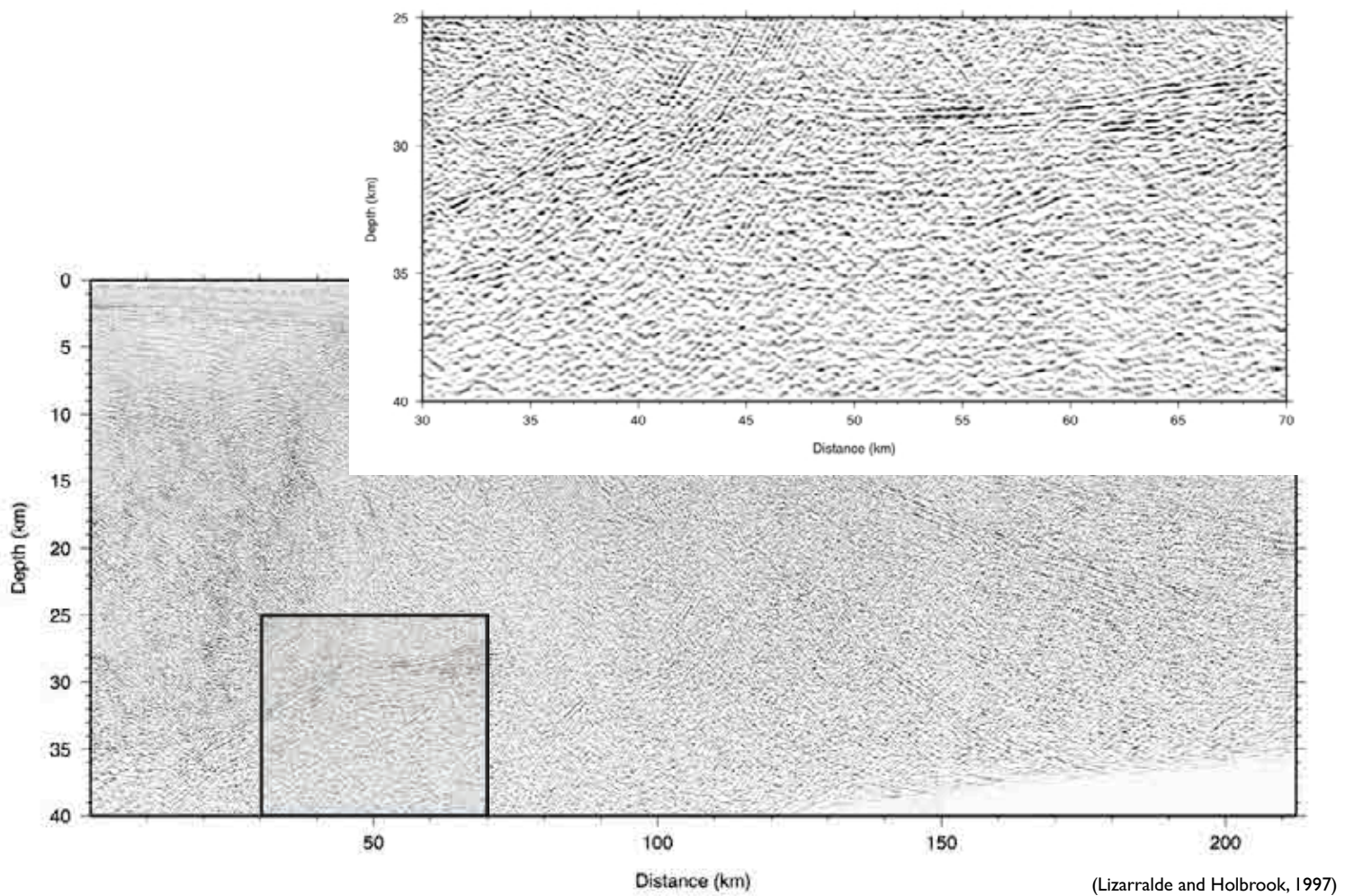


## EDGE Line 801: SDRS and carbonate bank in migrated MCS data

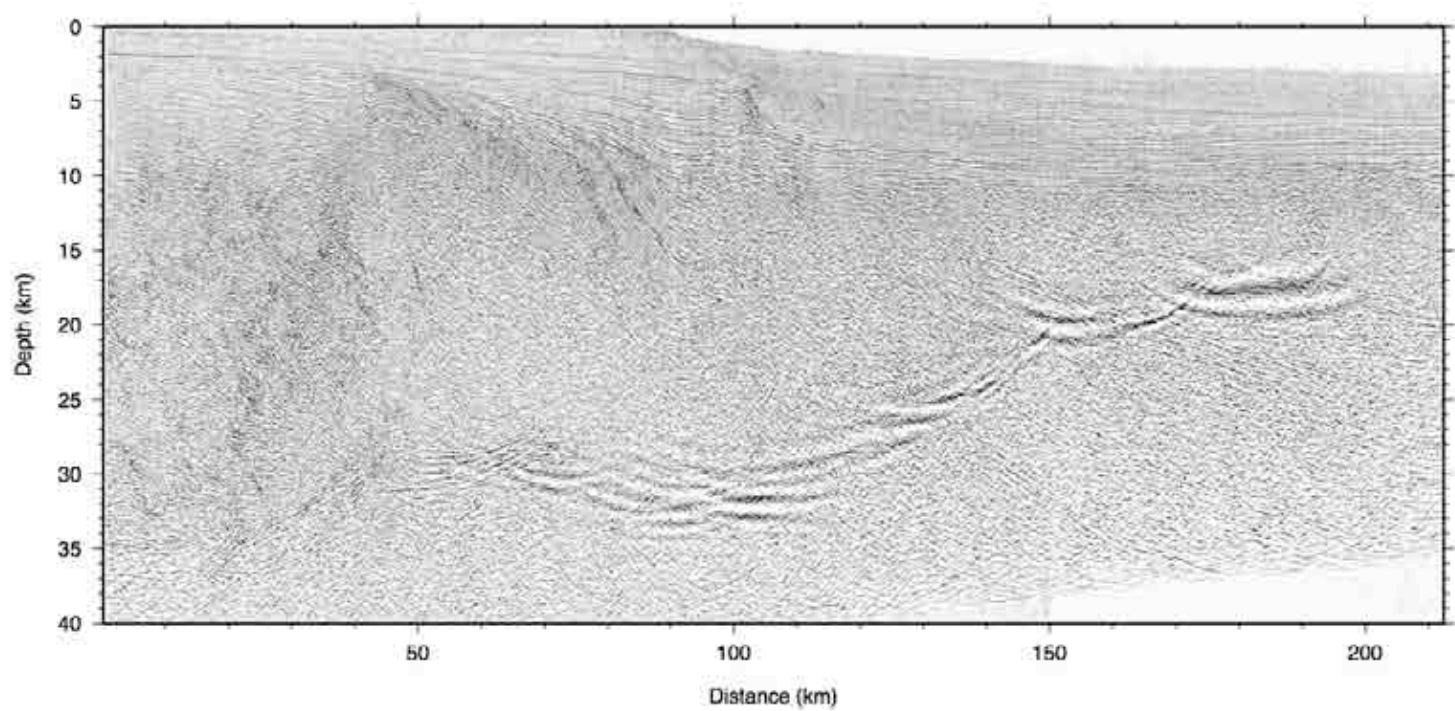


(Lizarralde and Holbrook, 1997)

## EDGE Line 80I: Moho in migrated MCS data



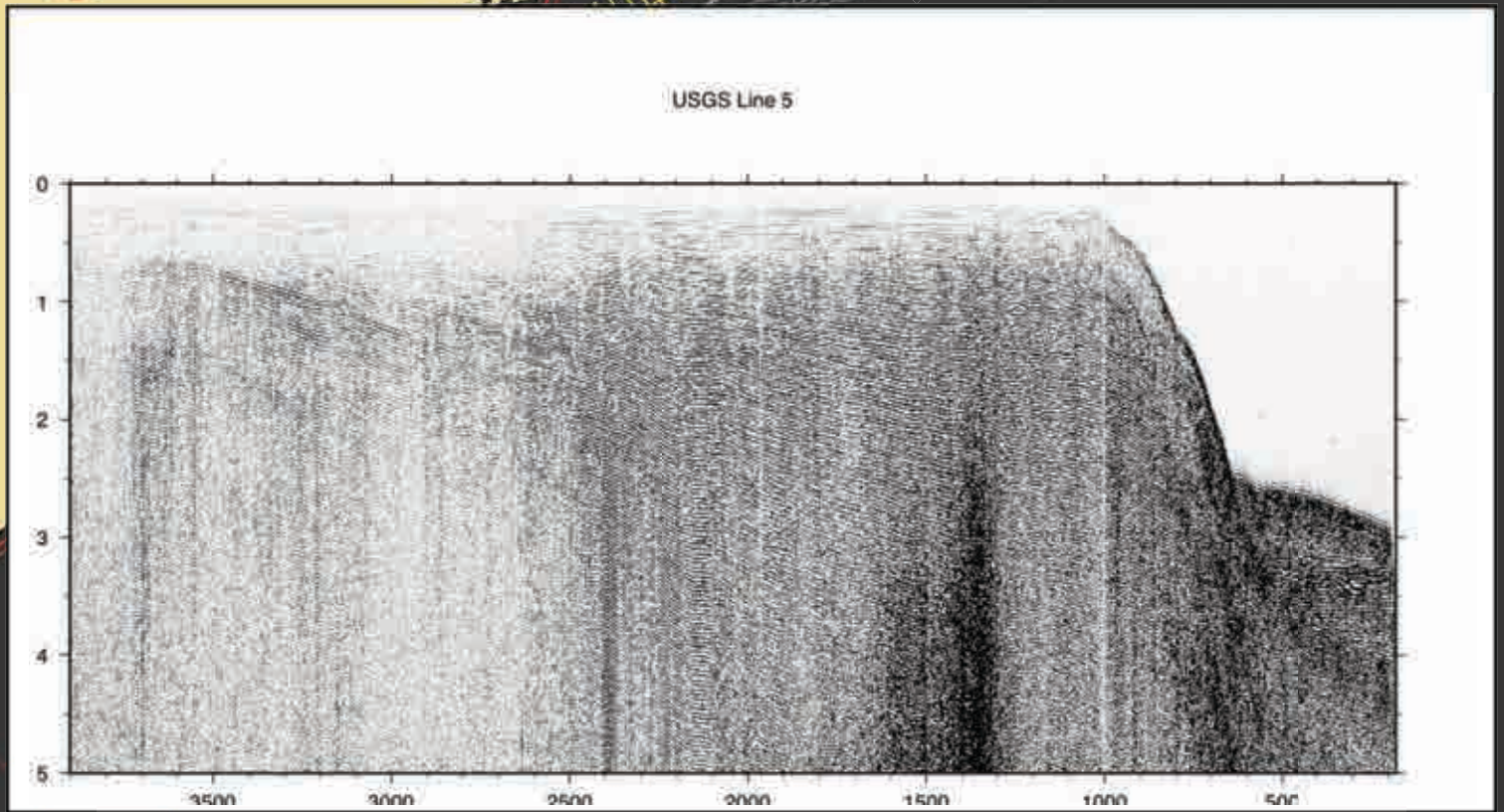
## EDGE Line 80I: Pre-stack depth migration of PmP recorded by OBH



(Lizarralde and Holbrook, 1997)



**Existing MCS data  
on the shelf**



## Extending a USGS ECS survey

- 13700 km of MCS lines
- 2 x 850 km refraction lines
- 2 deployments of 100 OBS
- USGS: ~\$4.6M
- NSF: ~\$4.1M

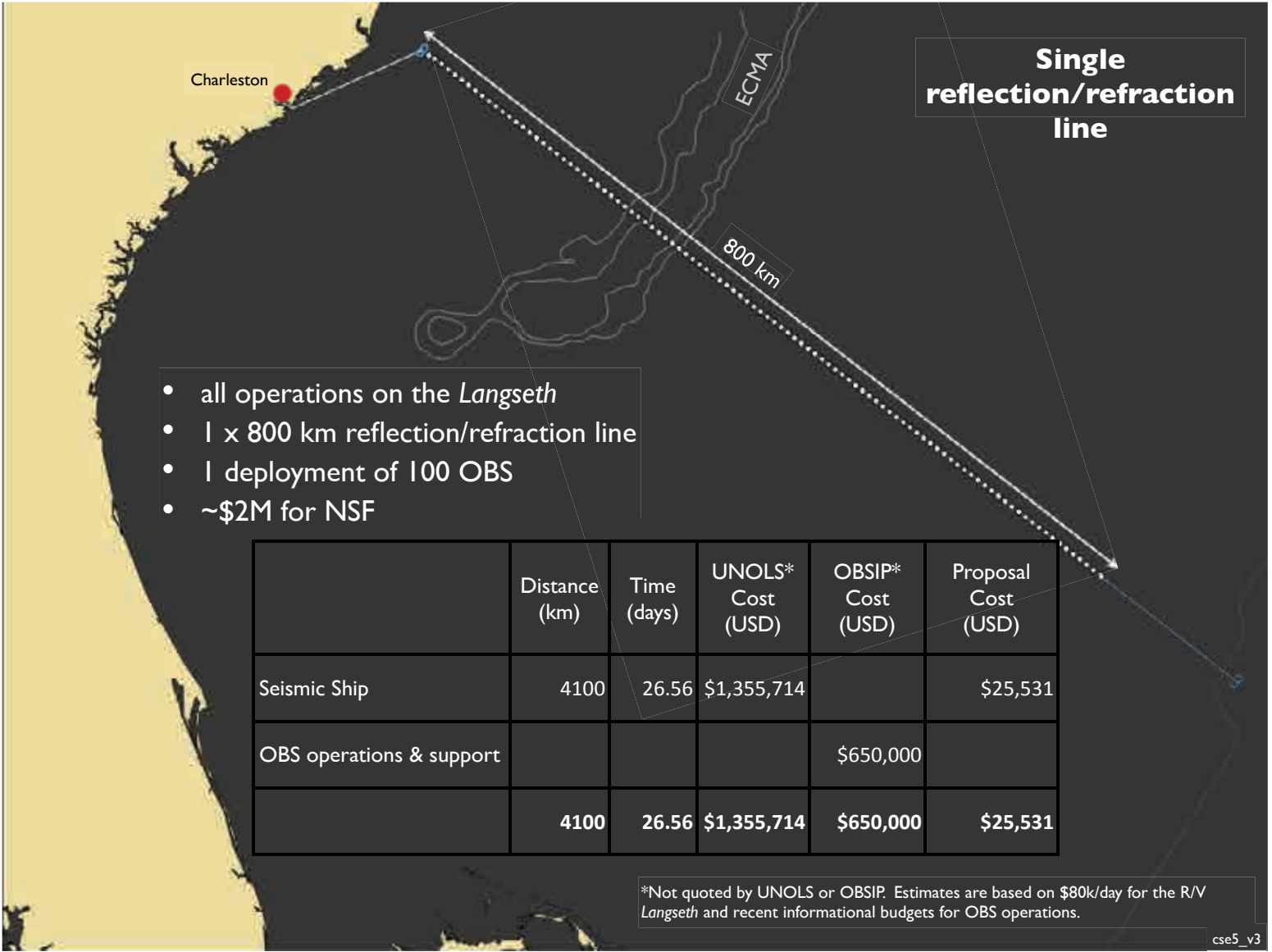
	Distance (km)	Time (days)	UNOLS* Cost (USD)	OBSIP* Cost (USD)	Proposal Cost (USD)
Mob./demob., permitting			\$230,000		
Transit	634	1.36	\$108,640		
Streamer/gun operations	444	4.22	\$337,695		
ECS MCS Acquisition	9764	48.82	\$3,905,420		
MCS Extensions	4487	22.43	\$1,794,761		
OBS Acquisition	1649	8.25	\$659,764		
OBS ship and instruments	3299	24.49	\$734,842	\$836,160	
Science Salaries					\$94,978
	20277	109.57	\$7,771,123	\$836,160	\$94,978

\*Not quoted by UNOLS or OBSIP. Estimates are based on \$80k/day for the R/V *Langseth*, \$30k/day for an OBS ship, and recent informational budgets for OBS operations.

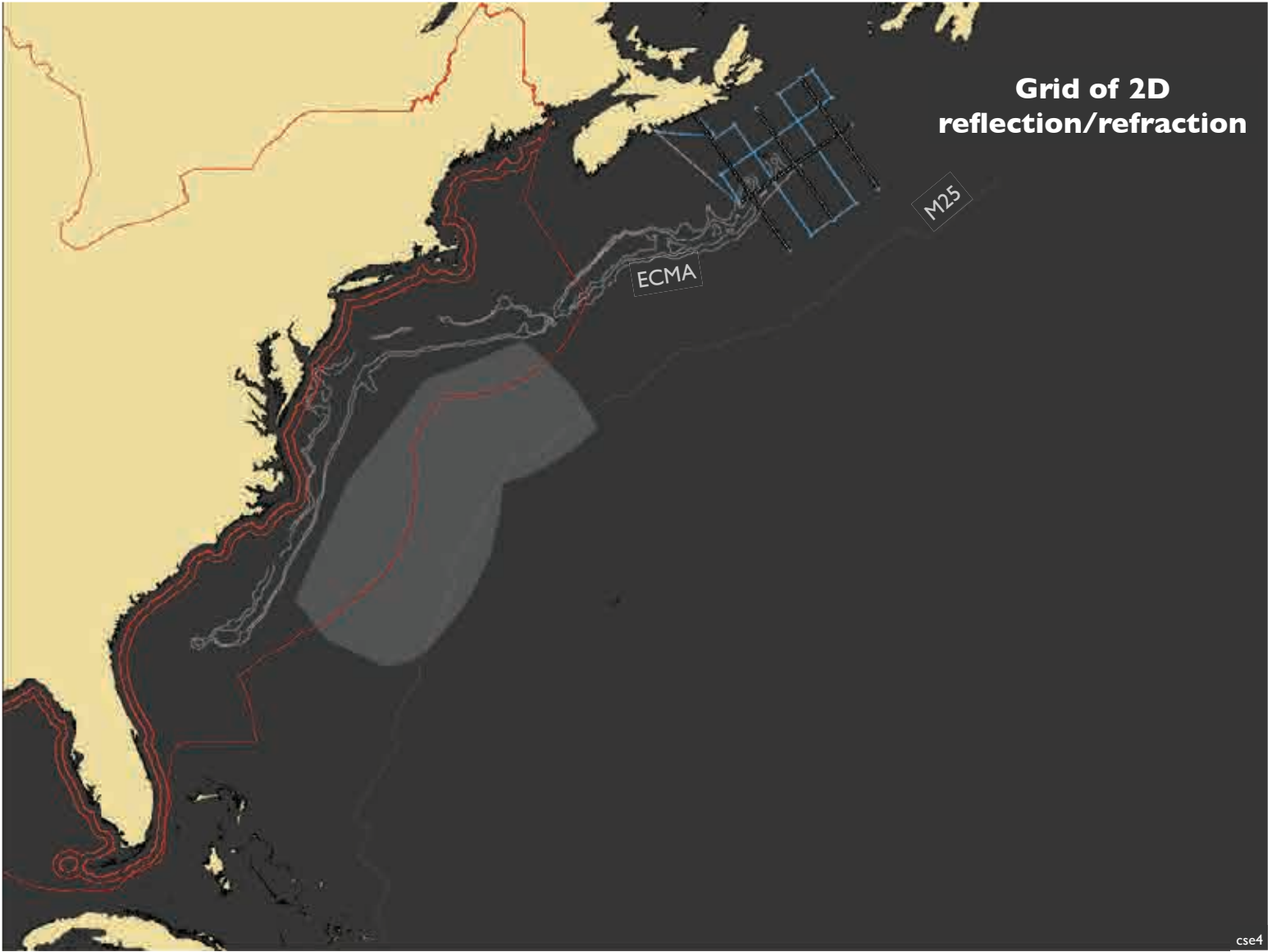
**Single  
reflection/refraction  
line**

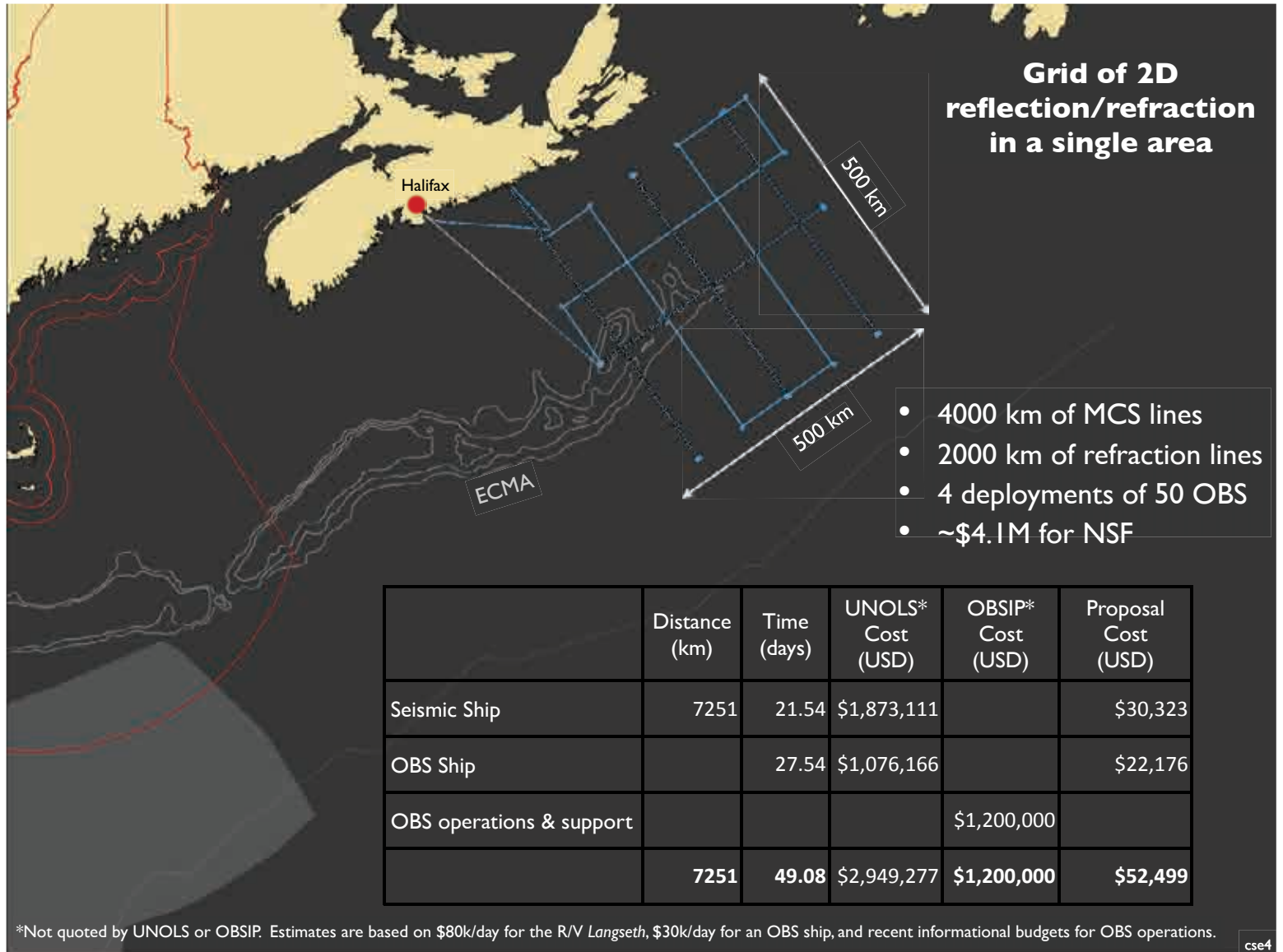
ECMA

M25









## Summary

