



MAG-PLAN Gulf of Mexico (GOM) 2016 Update and Applicability to New Program Areas

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Overview

- Background
- MAG-PLAN Basics
- Model Architecture
- 2016 Update
 - Methodology
 - New Program Areas (Atlantic OCS)
- Questions and Discussion



Background

- Outer Continental Shelf Lands Act of 1953 (OCSLA)
- OCSLA Amendments of 1978
- Efforts to Model Impacts of Offshore Development



MAG-PLAN Basics

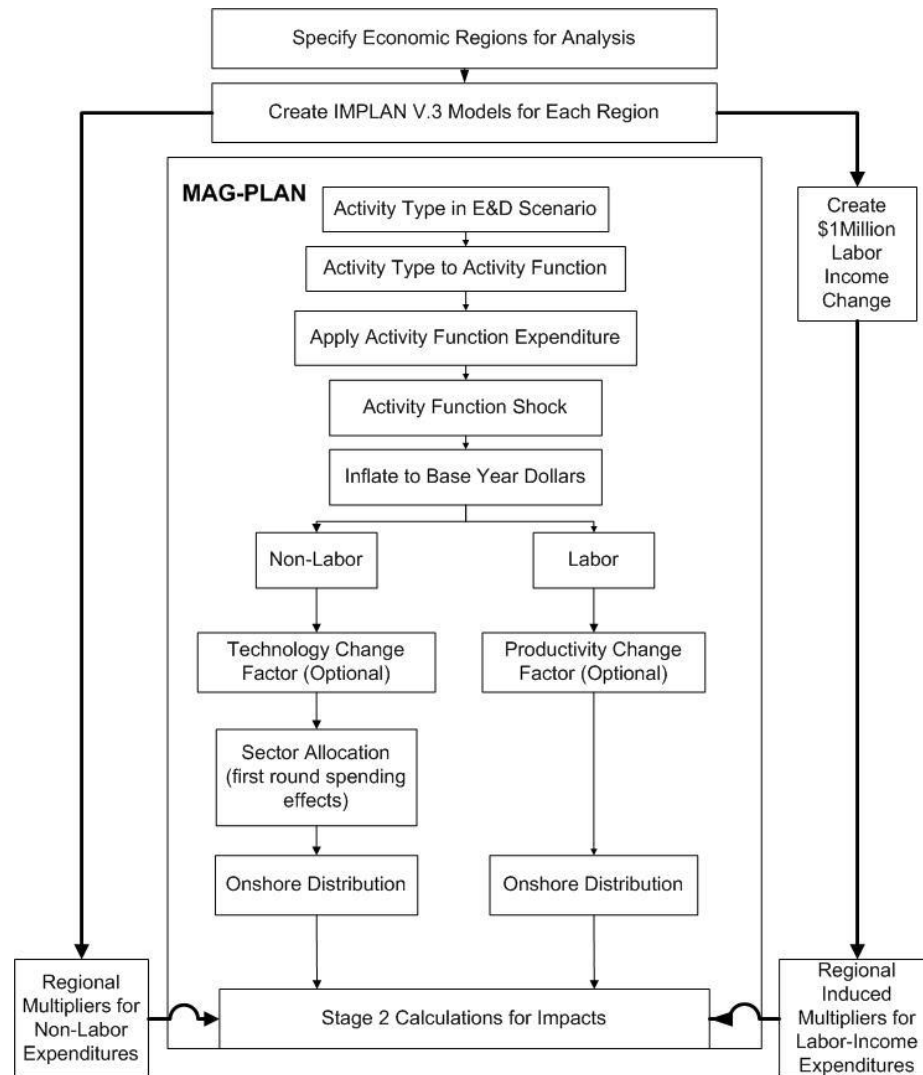
- Input/Output Modelling Framework
 - Examines relationships in the economy
 - Studies how an expenditure (a.k.a. “exogenous shock”) affects the entire economy
- I/O Approach Limits in Commercial Models
 - National data
 - Leakages
- MAG-PLAN is specifically designed to examine the impact of onshore and offshore oil and gas industry



Model Architecture

- Exploration and Development (E&D) Scenarios
- Activity Types and Activity Functions
- Sector Allocation
- Onshore Distribution
- Stage 1 Impacts
 - Initial Spending Effects
- Stage 2 Impacts
 - Indirect (Supply Chain)
 - Induced (Household Spending)
 - Regional Multipliers (IMPLAN)

Model Architecture





2016 Update: Framework

- **Methodological Updates**
 - Allocation of non-labor expenditures to industry sectors
 - Revision of onshore distributions
- **New Program Areas**
 - Assess the applicability of the MAG-PLAN broad structure
 - Develop geographic distributions for the Atlantic OCS



2016 Update: Sector Allocation

- Non-Labor Spending
 - Allocated To 440 IMPLAN Industry Sectors
 - Different Methods for Different Activities
- Modified Bill-of-Sale Approach
 - Geological and Geophysical Prospecting
 - Subsea Systems Installation
 - FPSO Vessels
 - Platform Decommissioning
 - Production O&M

2016 Update: Sector Allocation

Authorization for Expenditure	Cost Category	Detailed Cost
Cement	Cement And Services, Cementing Accessories	\$245,000
Services Cementing	Cement And Services, Cementing Accessories	\$27,900
Services Open Hole Logging	Logging, Openhole	\$92,000
	Packer & Downhole Equipment	N/R
	Production Equipment	N/R
	Special Services/Coiled Tubing/Testing/DST & Coring	N/R
Drilling Bits	Bits, Reamers, And Stabilizers	\$100,500
	Contingencies	N/R
Drilling Rig	Contract Drilling	\$3,410,000
Services Directional Survey	Directional Drilling Services	\$12,000
Services Directional Tools	Directional Drilling Services	\$205,500
	Drilling, Construction, & Company Overhead	N/R
Drig Fuel	Fuel, Power, Water, Hauling And Disposal	\$161,200
Rent Elect Line Unit	Fuel, Power, Water, Hauling And Disposal	\$15,500
Trans Fuel	Fuel, Power, Water, Hauling And Disposal	\$72,500
Drig Water	Fuel, Power, Water, Hauling And Disposal	\$12,400
	Miscellaneous Materials & Expenses	N/R
Drig Mob Demob	Mobilization / Demobilization	\$375,000
Drig Tools - Stab, Oh, Ur	Rental Tools And Equipment	\$48,300
Rent Drill String	Rental Tools And Equipment	\$13,400
Rent Misc	Rental Tools And Equipment	\$48,300
Trans Air	Transportation	\$99,200
Trans Crewboats	Transportation	\$105,400
Services Docks	Trucking & Freight	\$7,800

2016 Update: Sector Allocation

Cost Summary	Cost	Percent
Drilling contractor (including mobilization/demobilization)	\$3,785,000	42.9%
Directional Drilling	\$217,500	2.5%
Drilling fluids	\$538,000	6.1%
Drilling tools	\$210,500	2.4%
Mud logging	\$31,100	0.4%
Casing-materials	\$970,700	11.0%
Casing-services	\$97,500	1.1%
Cementing-materials	\$245,000	2.8%
Cementing-services	\$27,900	0.3%
BOPs	\$119,300	1.4%
Formation Evaluation	\$92,000	1.0%
Inspection Fees	\$70,200	0.8%
Insurance	\$1,052,400	11.9%
Company Labor	\$25,000	0.3%
Contract Labor (inc. dispatcher)	\$183,200	2.1%
G&G	\$40,000	0.5%
Misc.	\$67,200	0.8%
Fuel	\$233,700	2.6%
Water	\$12,400	0.1%
Power	\$15,500	0.2%
Transportation - air	\$99,200	1.1%
Transportation - water	\$588,400	6.7%
Transportation - land	\$75,000	0.8%
Accommodations	\$30,700	0.3%
Total	\$8,827,400	

2016 Update: Sector Allocation

Cost Summary	Percent		NAICS	IMPLAN	Sector Name
	Individual	Aggregate			
Drilling contractor (including mobilization/ demobilization)	42.9%	42.9%	213111	27	Drilling Oil and Gas Wells
Directional Drilling	2.46%	11.4%	213112	28	Support Activities for Oil and Gas Operations
Drilling fluids	6.1%				
Mud logging	0.4%				
Casing-services	1.1%				
Cementing-services	0.3%				
Formation Evaluation	1.0%				
G&G	0.5%	1.2%	541300	439	Architectural and Engineering Services
Inspection Fees	0.8%				
Transportation - air	1.1%	1.1%	481000	391	Air Transportation
Transportation - water	6.7%	6.7%	483000	393	Water Transportation
Transportation - land	0.8%	0.8%	484000	394	Truck Transportation
Accommodations	0.3%	0.3%	721A00	480	Other Accommodations
Drilling tools	2.4%	3.7%	333132	261	Oil and Gas Field Equipment and Machinery
BOPs	1.4%				
Casing-materials	11.0%	11.0%	331111	203	Iron and steel mills
Cementing-materials	2.8%	2.8%	327310	191	Cement manufacturing
Fuel	2.6%	2.6%	447000	407	Gasoline Stations
Water	0.1%	0.1%	221300	32	Water, Sewage, and Other Systems
Power	0.2%	0.2%	221100	30	Power Generation and Supply
Insurance	11.9%	11.9%	524100	427	Insurance Carriers
Company Labor	0.3%	3.1%			Wages (will be divided between households and insurance carriers)
Contract Labor (inc. dispatcher)	2.1%				
Misc	0.8%				
Total		100.0%			

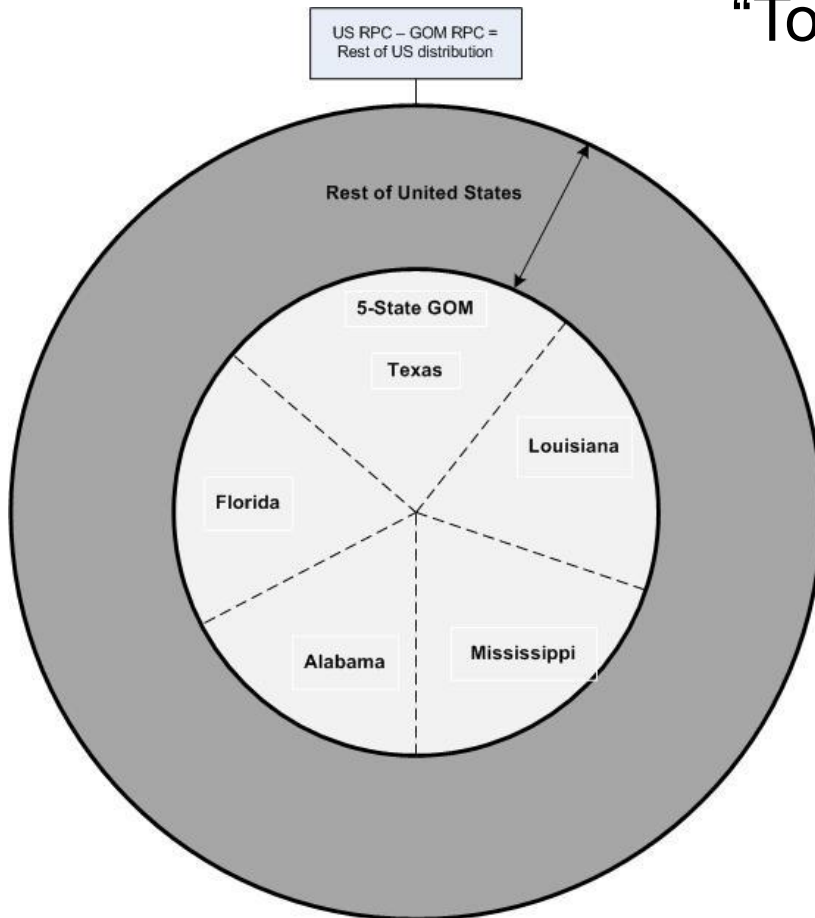


2016 Update: Onshore Distribution

- Spending to Onshore Areas
- Four Categories
 - Major/Non-Major
 - Local/Non-Local
- Categorize 440 IMPLAN Sectors
- “Top-Down” and “Bottom-Up” Approaches

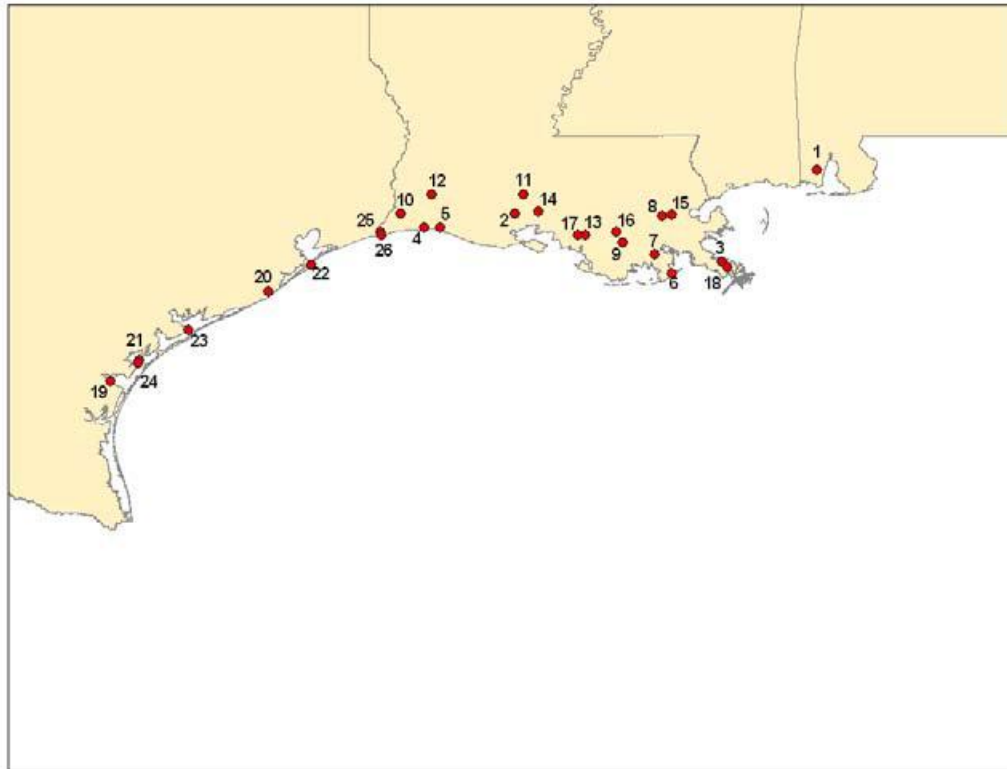
2016 Update: Onshore Distribution

“Top Down”



2016 Update: Onshore Distribution

- “Bottom Up”: Major Helicopter Service Provider Locations



New Program Areas

- Atlantic OCS (2017-2022 Draft Proposed Program)





New Program Areas

- Frontier Area
 - Core Atlantic States (DE, MD, VA, NC, SC, GA)
 - Extended Atlantic States (PA, NJ, FL)
 - Rest of GOM States (AL, MS, LA, TX)
- Builds on basic structure of MAG-PLAN GOM 2016
- Uses nearly the same set of activities
- Major difference: onshore distribution of expenditures
 - To “extended” states
 - To GOM states



Questions and Discussion

