

Update on Market and Behavioral Research Efforts

**US DOE Technical Analysis Workshop
for Window Attachments**

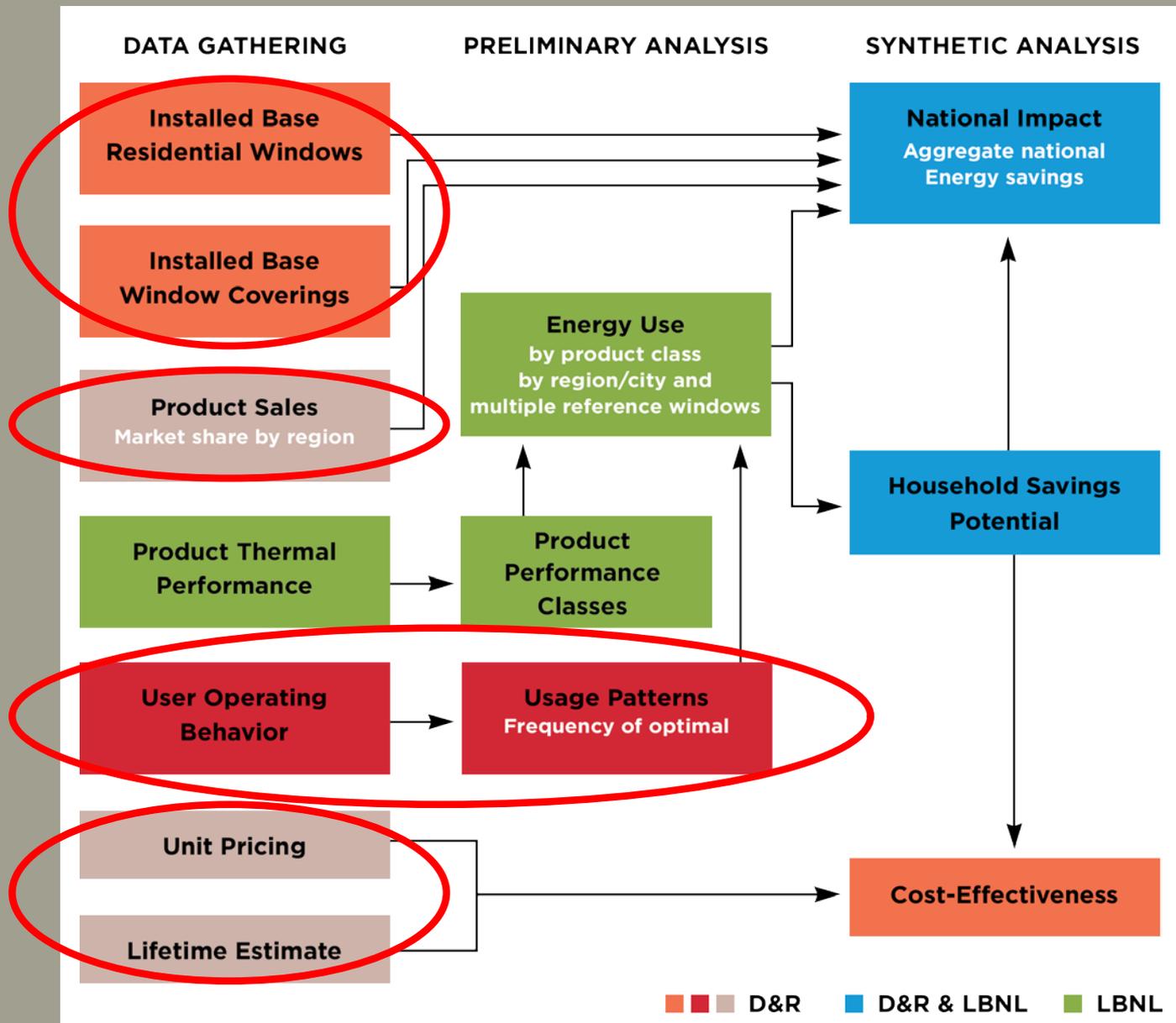
July 16

Stephen Bickel and Emily Phan-Gruber

D&R International

Background

- Engaged by WCMA in Summer of 2010
- Conducted analysis and provided strategic input for presentation to EPA and DOE in March 2011
- Developed proposal for behavioral, market, and energy savings research to answer EPA and DOE questions/concerns Spring 2011
- Contracted by WCMA to collect manufacturer data and gather data on installed base and user behavior Summer 2011
- Contracted by DOE through LBNL to analyze manufacturer data and survey datasets Winter/Spring 2012
- Received funding February/March 2012



Overview of Efforts

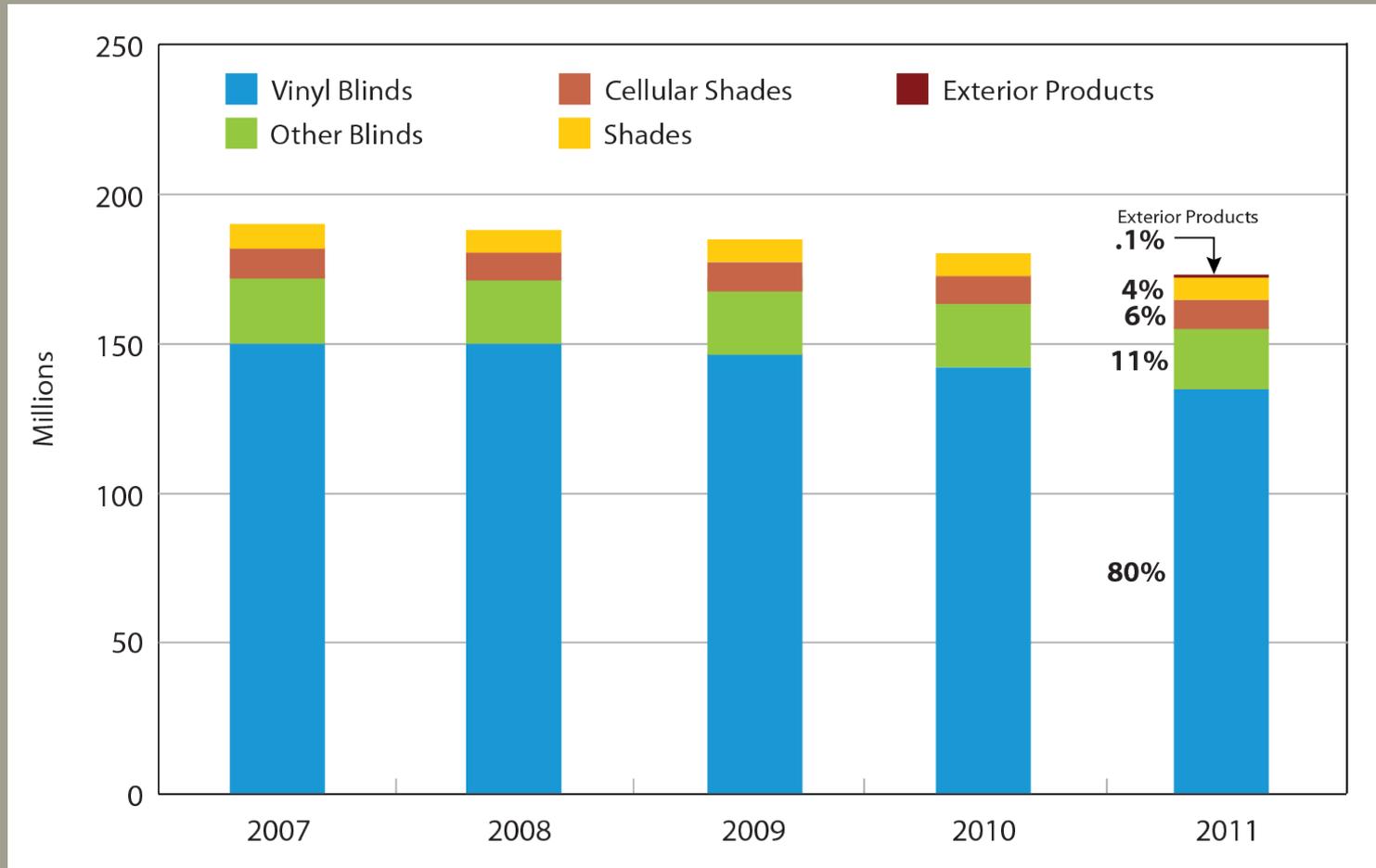
- **Market Data**
- **Behavioral and Installed Base Research**

Market Data Collection

Market Data Collection

- **WCMA members:**
 - Shipments
 - Pricing
 - Imports/Manufactured Domestically
 - Retail Channels
 - Market Share
 - Jobs
- **Government**
 - US Commerce imports data for vinyl blinds

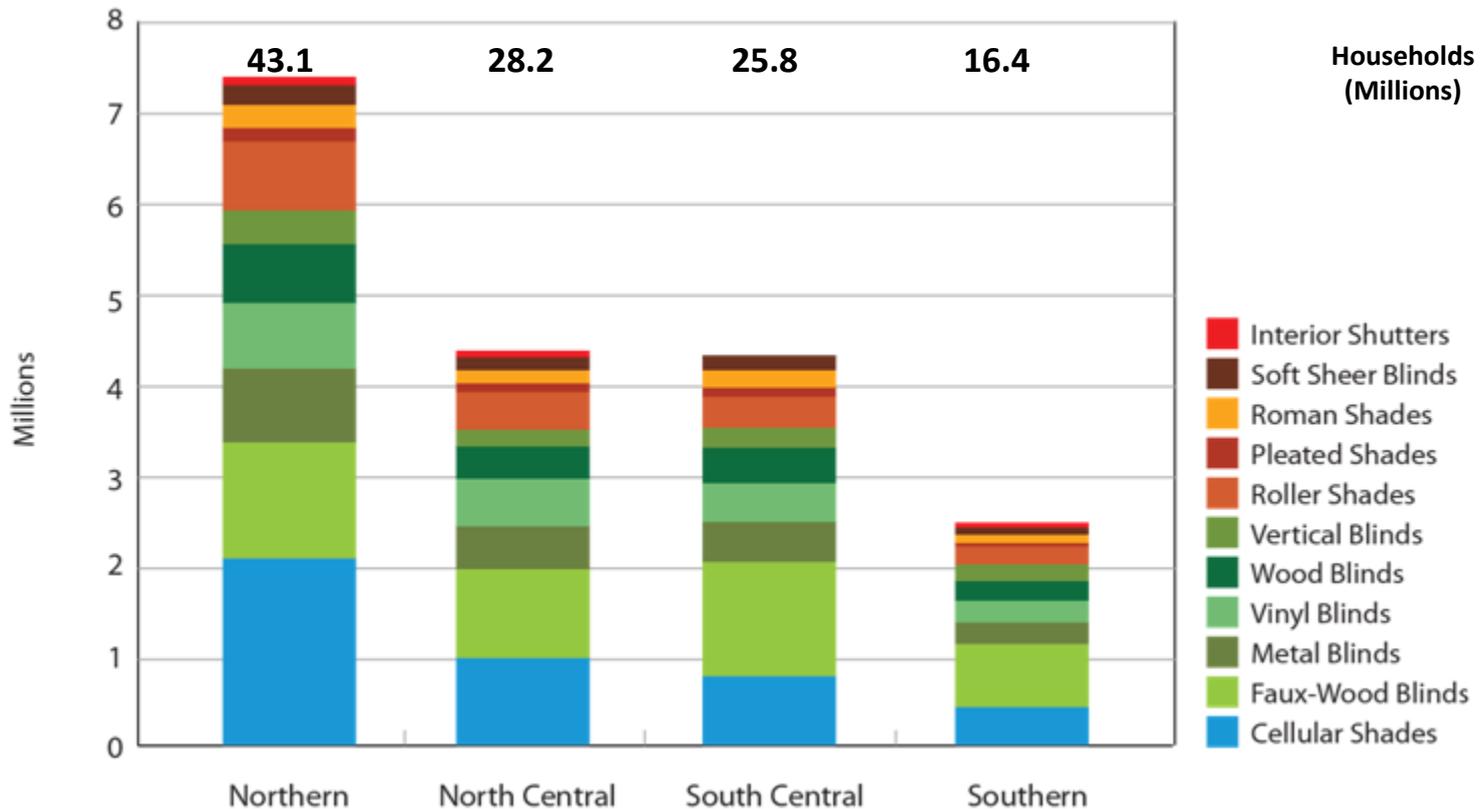
Annual Shipments



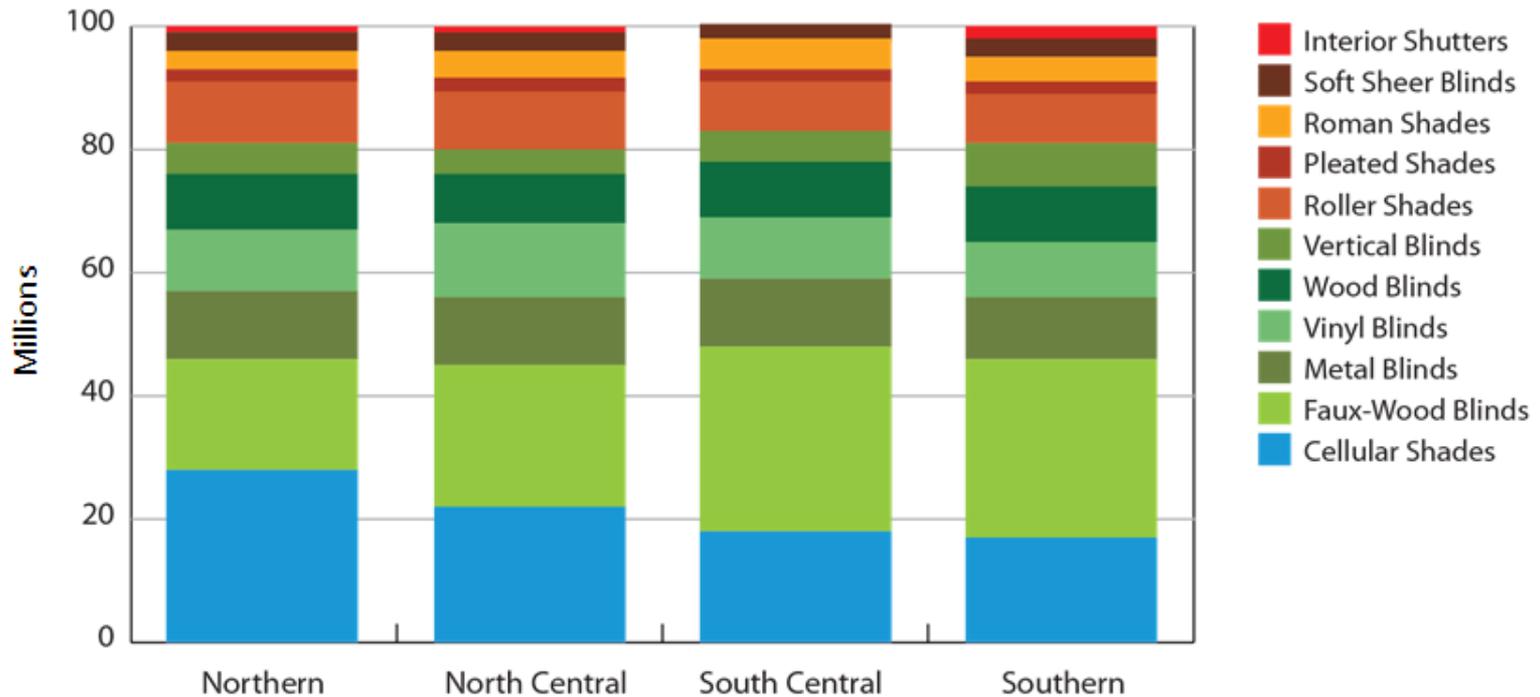
Average Product Lifetime

Coverings per household/year	1.52
Average number of windows/household	15
Average window covering product lifetime	10 years

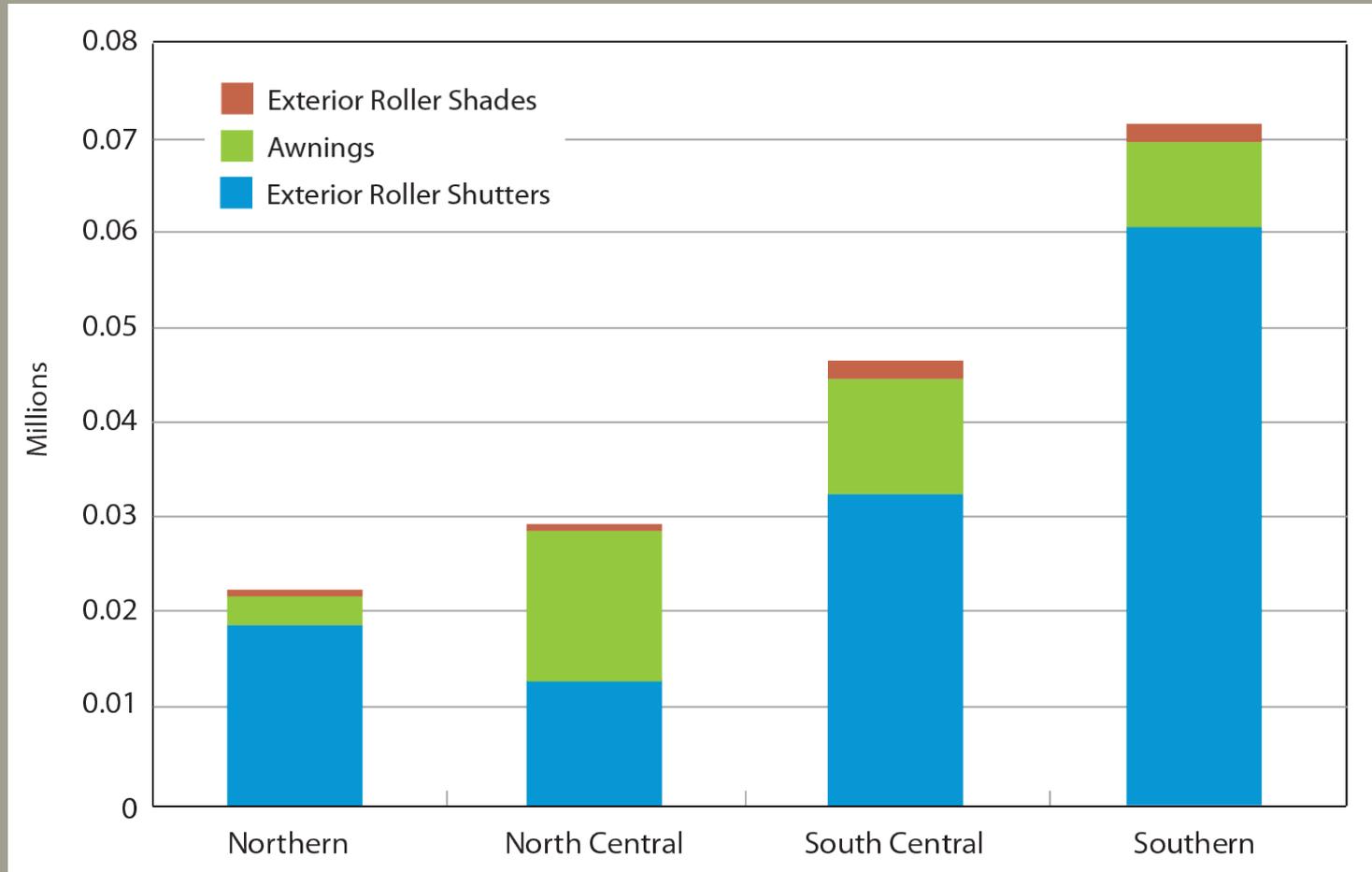
Shipments by Climate Zone-Interior Products



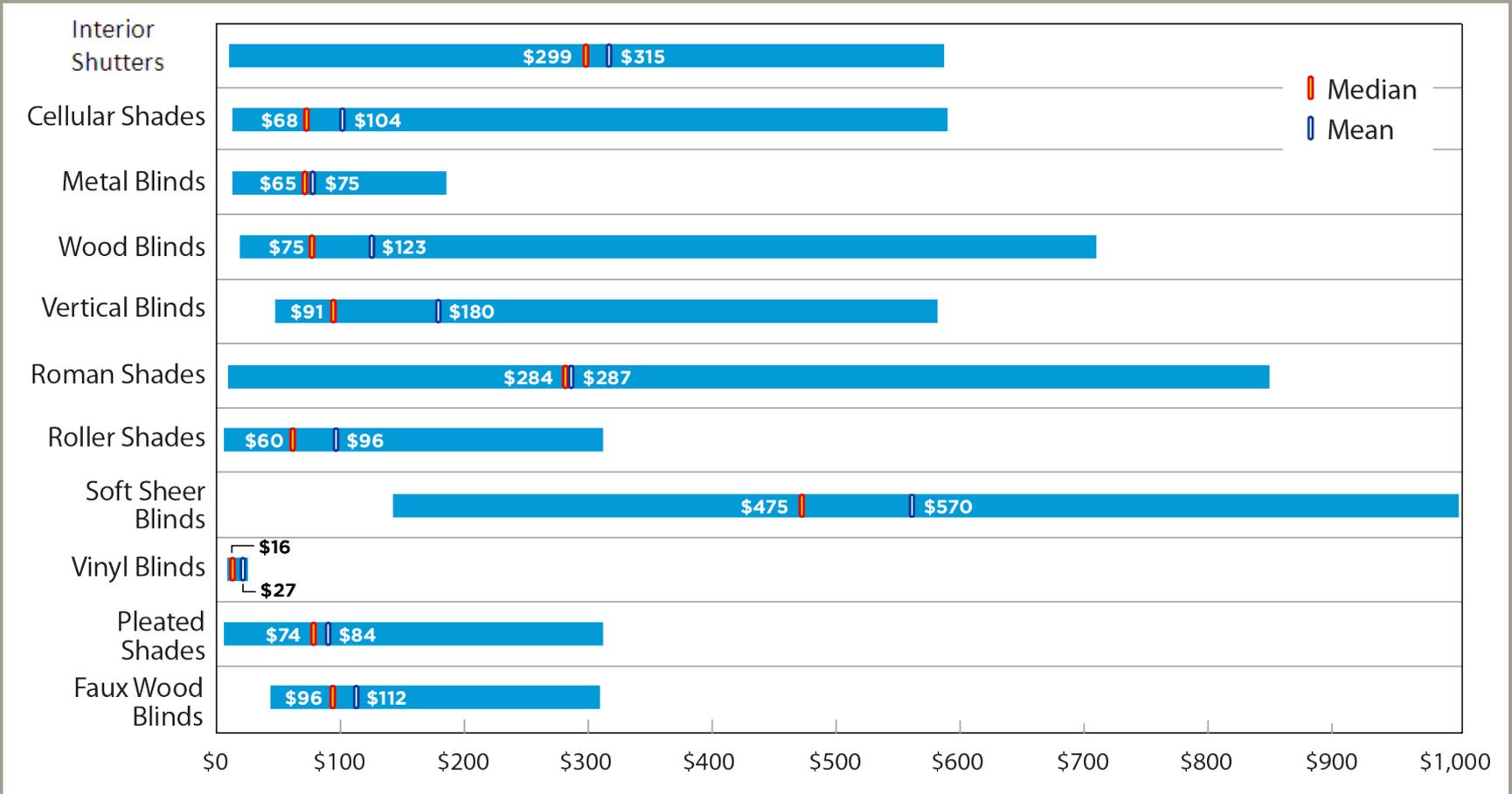
Shipments by Climate Zone-Interior Products



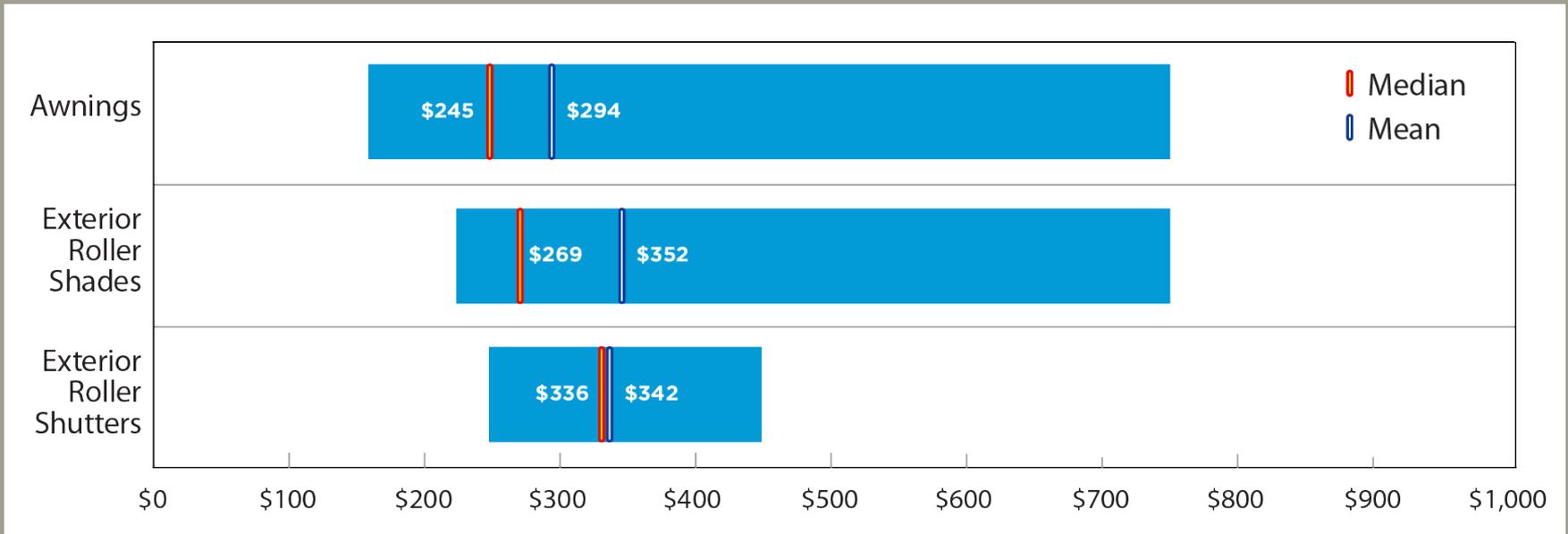
Shipments by Climate Zone-Exterior Products



Pricing



Pricing



Behavioral and Installed Base Research

Partners

- **Survey specialist: Russell Research**
- **Peer review: LBNL and WCMA**

Key Outputs

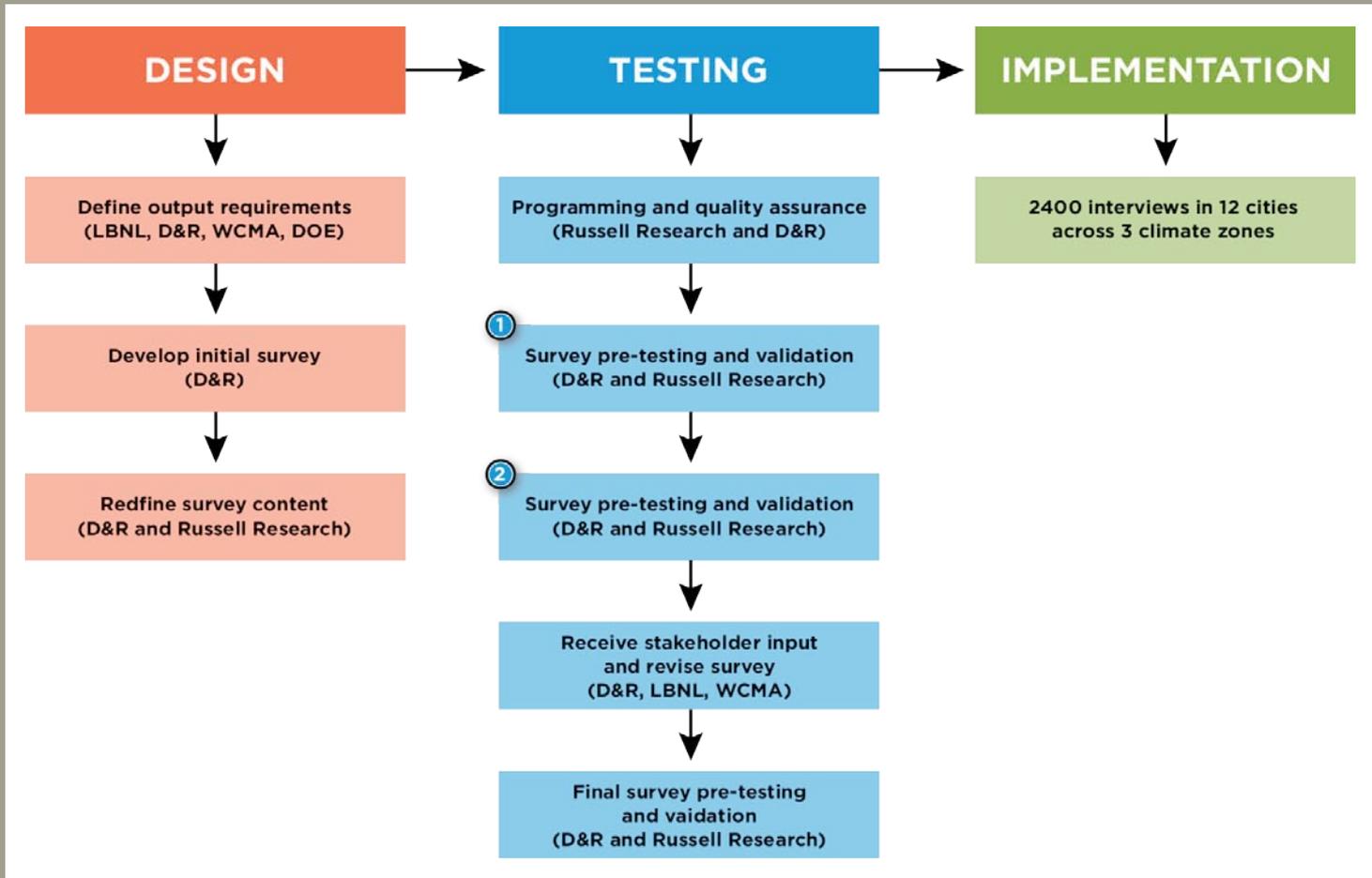
- **Installed base of windows**
- **Installed base of window coverings**
- **Schedules of window covering operation**

Scope

- 2400 interviews
- 12 cities
- 3 climate zones

Northern	Mid-Tier	Southern
Boston	Atlanta	Lake Charles
Chicago	Fort Worth	Phoenix
Denver	San Francisco	San Antonio
Minneapolis	Washington DC	Tampa

Survey Process



Survey

Orientation	<ul style="list-style-type: none">• Home• Each window in the home
Type of window	<ul style="list-style-type: none">• Operator type, number of panes, frame type, size• Presence of storm windows
Type of window coverings	<ul style="list-style-type: none">• Shade of covering (outward facing), mount type (inside or outside), top down/bottom up
Typical position of covering	<ul style="list-style-type: none">• Summer/Winter• Weekday/Weekend• Morning/Afternoon/Evening
Replacement of windows	<ul style="list-style-type: none">• ENERGY STAR• Year of replacement• Number of windows replaced
Household characteristics	<ul style="list-style-type: none">• Age of home• Duration in home• Central A/C

Window Types

Master Bedroom

- Single Window 
- 2 Side-By-Side Windows 
- 3 Side-By-Side Windows 
- 4 Side-By-Side Windows 
- 5 Side-By-Side Windows 
- 6 Side-By-Side Windows 
- Bay Window 
- Bow Window 
- Horizontal Slider 
- Picture Window 
- French Door 
- Sliding/Swinging Glass Door 

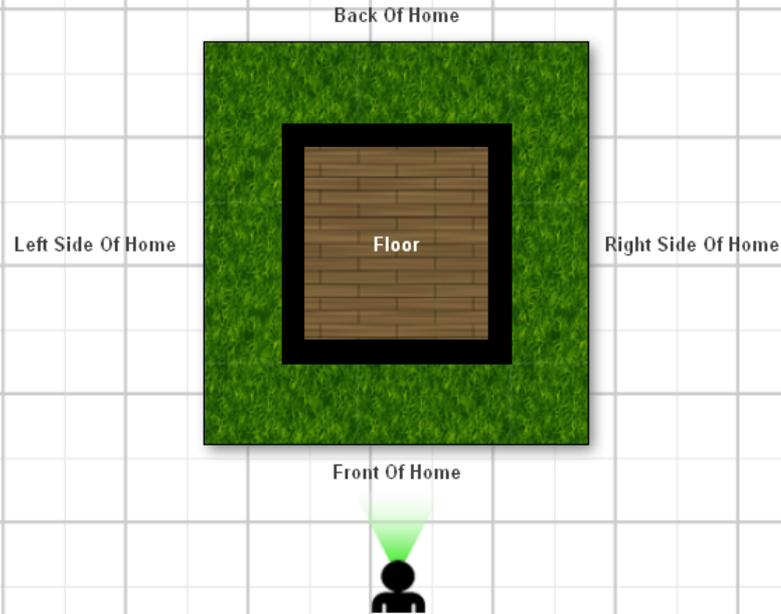
Using the diagram below as reference please identify each of the windows in your Master Bedroom

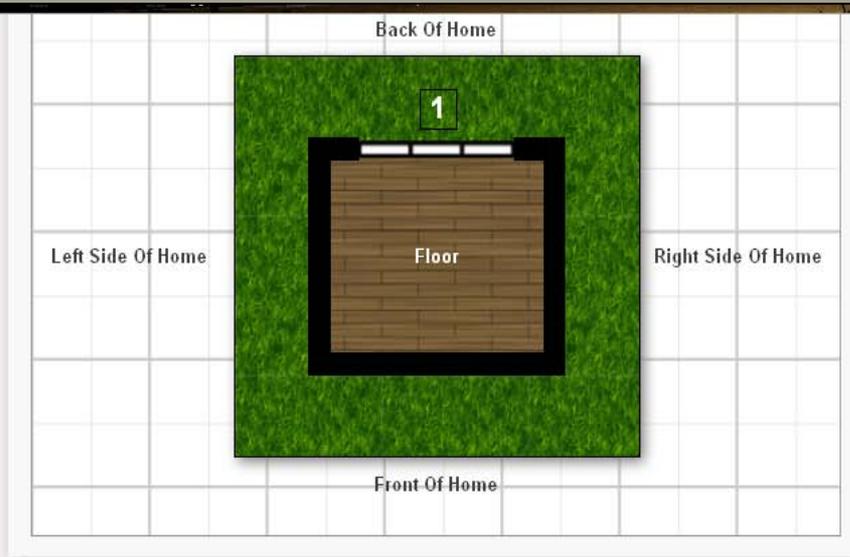
Please click on the appropriate type of window on the left and drag it to the appropriate wall of the room in the diagram below.

To remove a window, click the window and select "Delete Window".

After you have selected all windows in your Master Bedroom, please click "Move to the next room" at the bottom of the screen to continue.

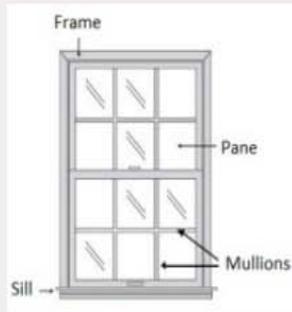
[Click Here for Glossary of Terms](#)





Using the above diagram as reference, please indicate what the frame of Window #1 in your Master Bedroom is made of.

Please select one answer below.



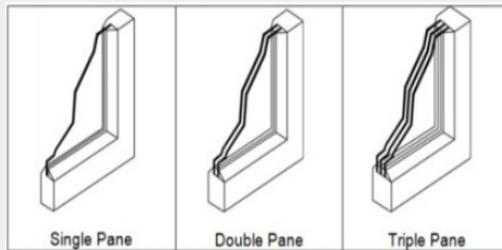
- Wood
- Plastic/Vinyl
- Metal
- Other (Specify)

Window #1

Wood
 Plastic/Vinyl
 Metal
 Other (Specify)

Which of the following pictures best describes the numbers of panes of glass in Window #1 in your Master Bedroom?

Please select one answer below.



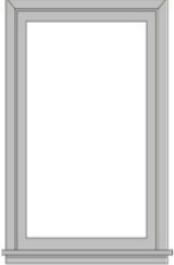
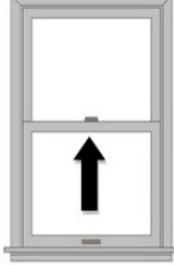
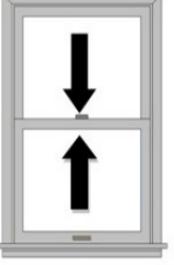
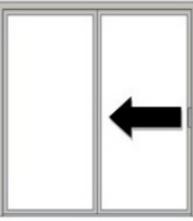
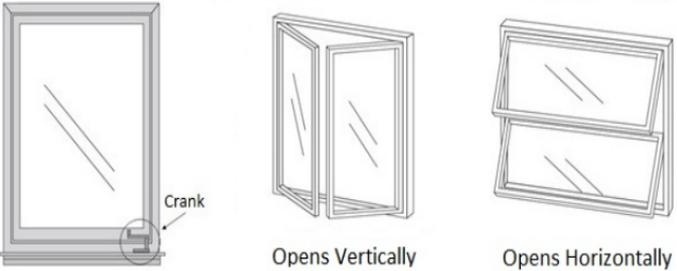
- Single pane
- Double pane
- Triple pane or greater

Window #1

-
-
-

Which of the following images does Window #1 in your Master Bedroom most look like?

Please select one answer below.

 <p>Fixed (Does not open)</p>	 <p>Single Hung (Only lower half can be slid up and down to open)</p>	 <p>Double Hung (Both the lower and upper halves can be slid up or down to open)</p>	 <p>Horizontal Slider (Has movable panels, which slide horizontally)</p>
 <p>Casement (Swings open in or out on side or top hinges)</p>			

Fixed (does not open)

Casement

Single hung

Double hung

Horizontal slider

Window #1

Typically, what is the position of the window coverings in each of the following rooms on a typical weekday during the summer in the morning (i.e. before noon)?

Please select one answer for each side of the house.

Summer weekday morning...

Master Bedroom

	<u>Open</u>	Half <u>Open</u>	<u>Closed</u>
Back of Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Child's/Other Family Member's Bedroom

	<u>Open</u>	Half <u>Open</u>	<u>Closed</u>
Back of Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Right Side of Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Guest bedroom

	<u>Open</u>	Half <u>Open</u>	<u>Closed</u>
Left Side of Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Kitchen

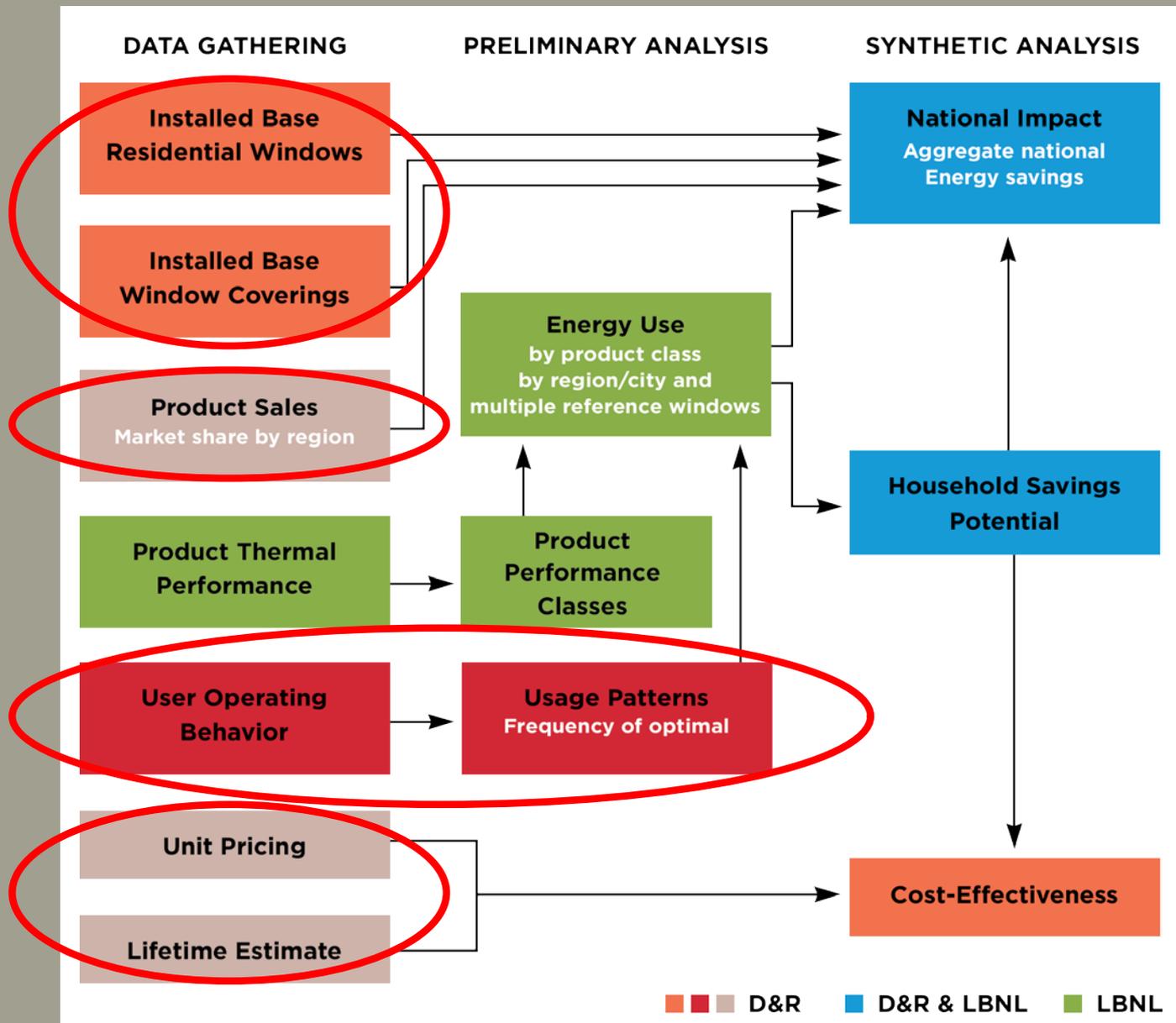
	<u>Open</u>	Half <u>Open</u>	<u>Closed</u>
Right Side of Home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Status

- **Pre-testing complete**
- **Interviews to be conducted over the next two weeks**

Deliverables

- **Market Data Report
(July 2012)**
- **Survey Data Report
(September 2012)**



Questions?

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