IBCC Meeting

May 31, 2012

Meeting Agenda

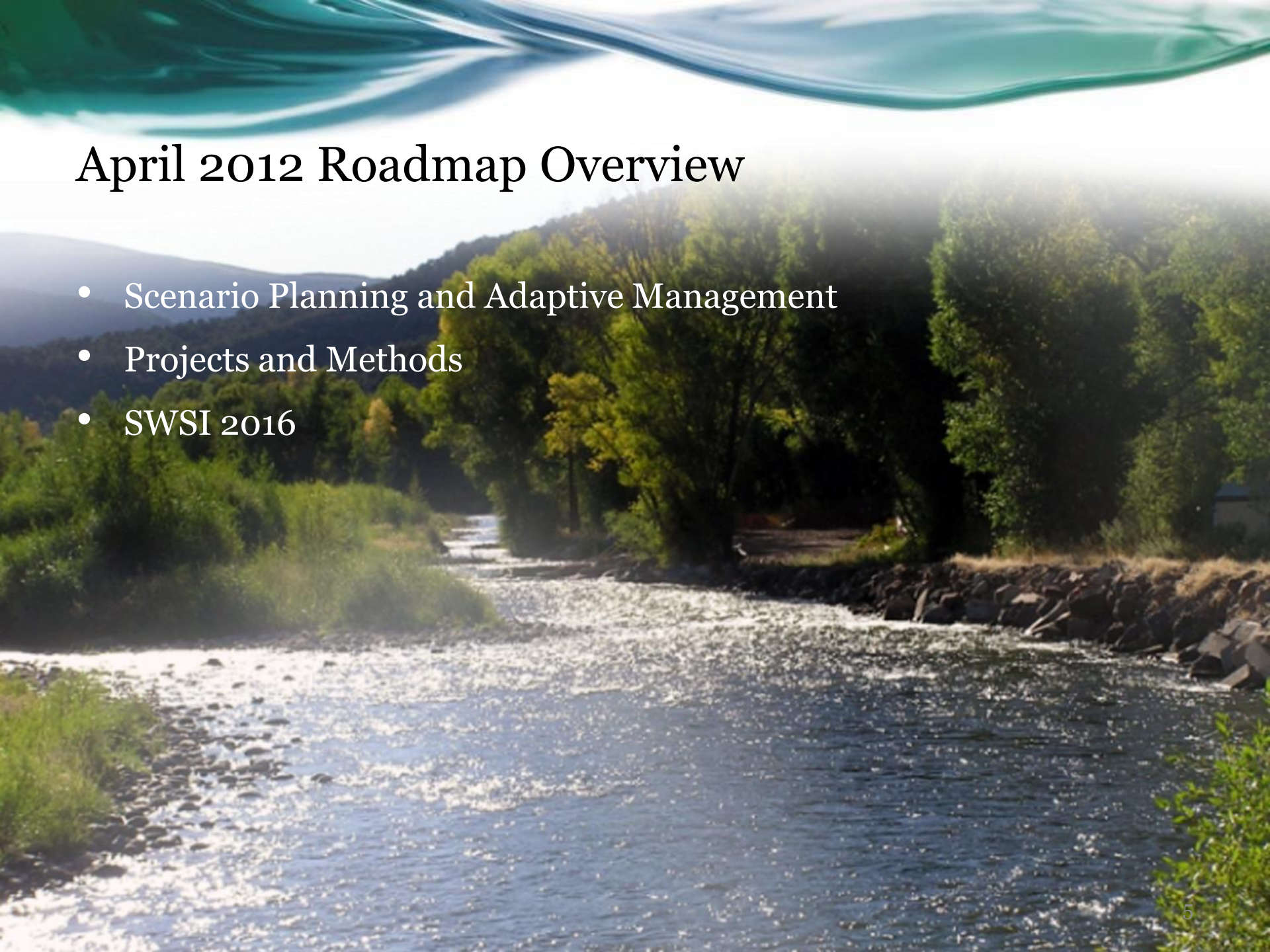
8:30 – 8:45	Welcome and Introductions
8:45 – 10:30	Framing the Roadmap Forward
10:30 – 10:45	Break
10:45 – Noon	Applications of Scenario Planning
Noon – 12:45	Lunch
12:45 – 2:45	Identify a Set of Portfolios to Evaluate for a Range of Scenarios
2:45 – 3:00	Break
3:00 – 4:30	Evaluation Metrics
4:30 – 5:00	Future Meeting Plan and Wrap-up

Meeting Objectives

- Understand roadmap/path forward
- Understand scenario planning and adaptive management concepts
- Identify scenarios
- Identify a range of portfolios to evaluate across scenarios
- Explore the development of metrics
- Present meeting schedule and 2012 milestones

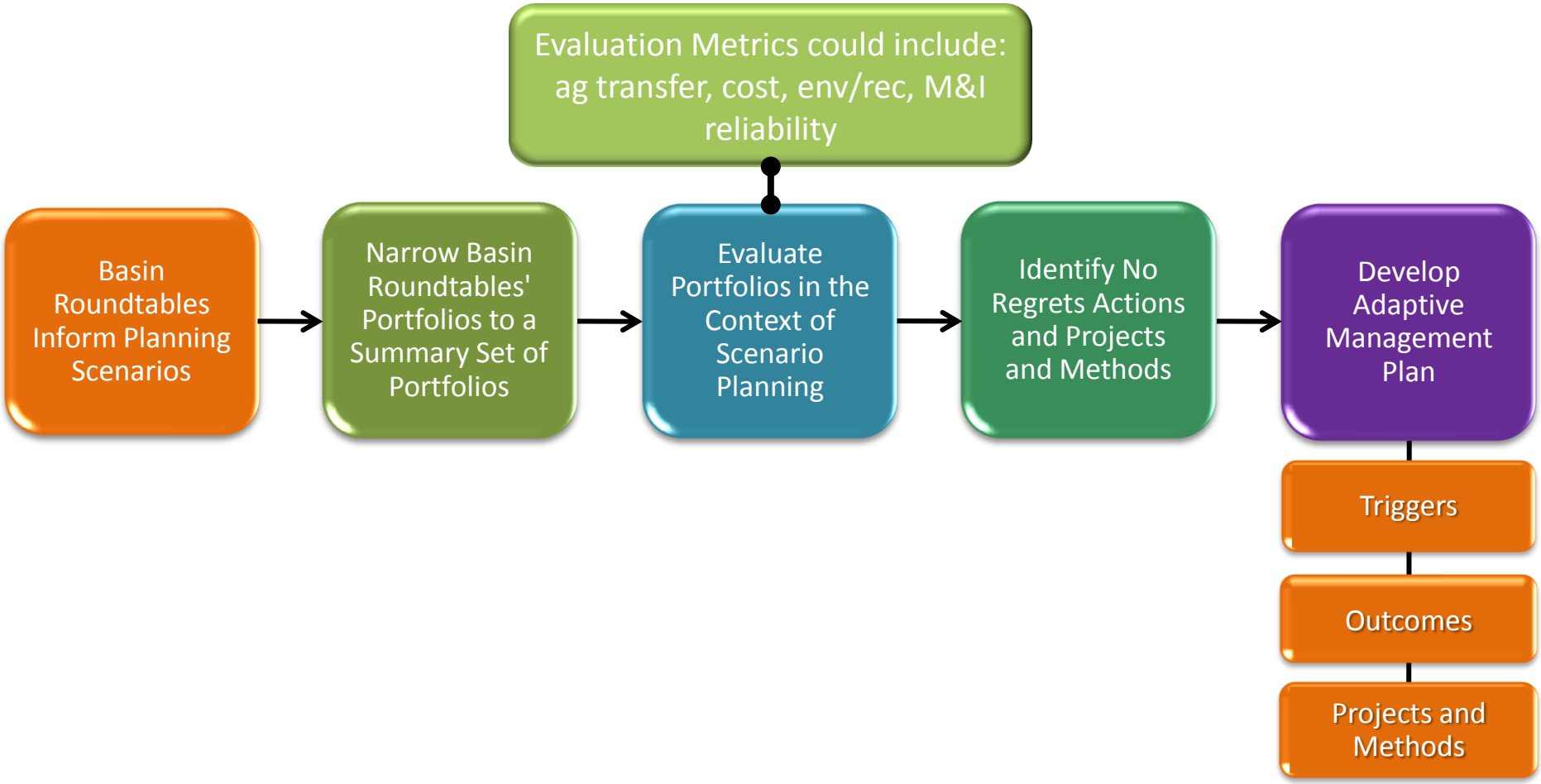
Framing the Roadmap Forward

April 2012 Roadmap Overview

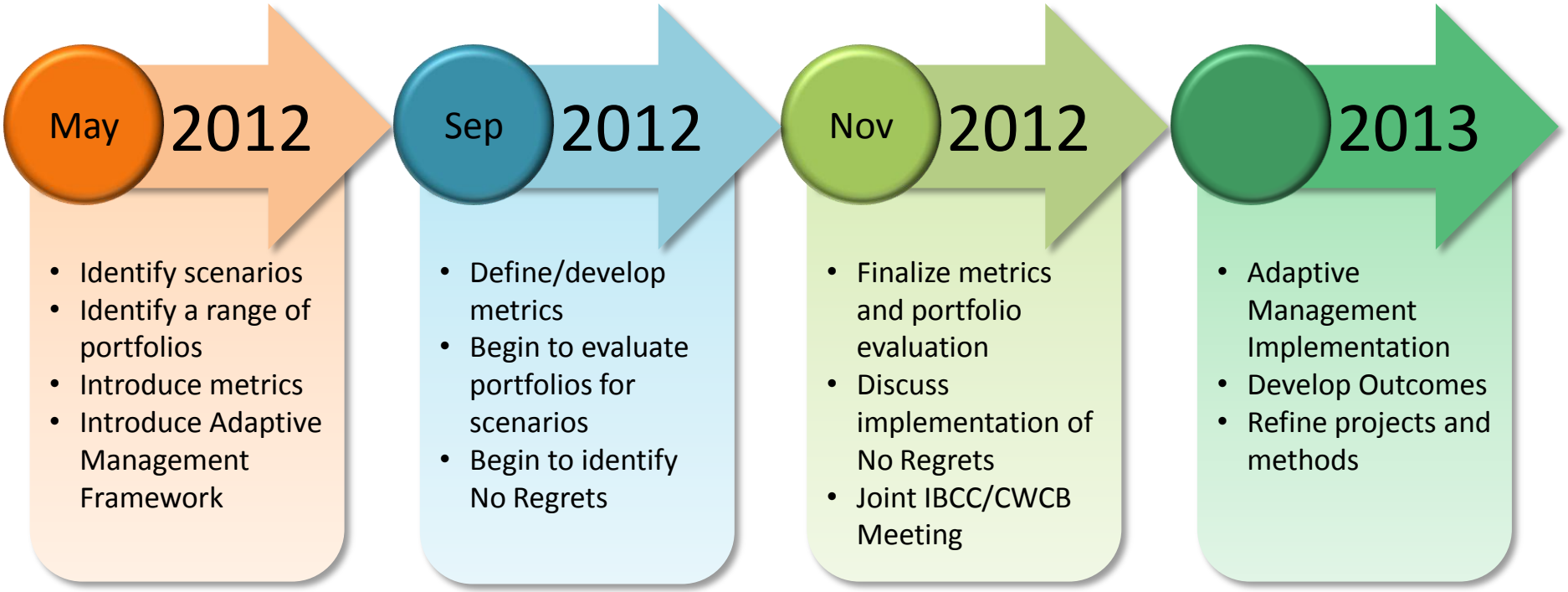


- Scenario Planning and Adaptive Management
- Projects and Methods
- SWSI 2016

IBCC's Approach to Scenario Planning and Adaptive Management



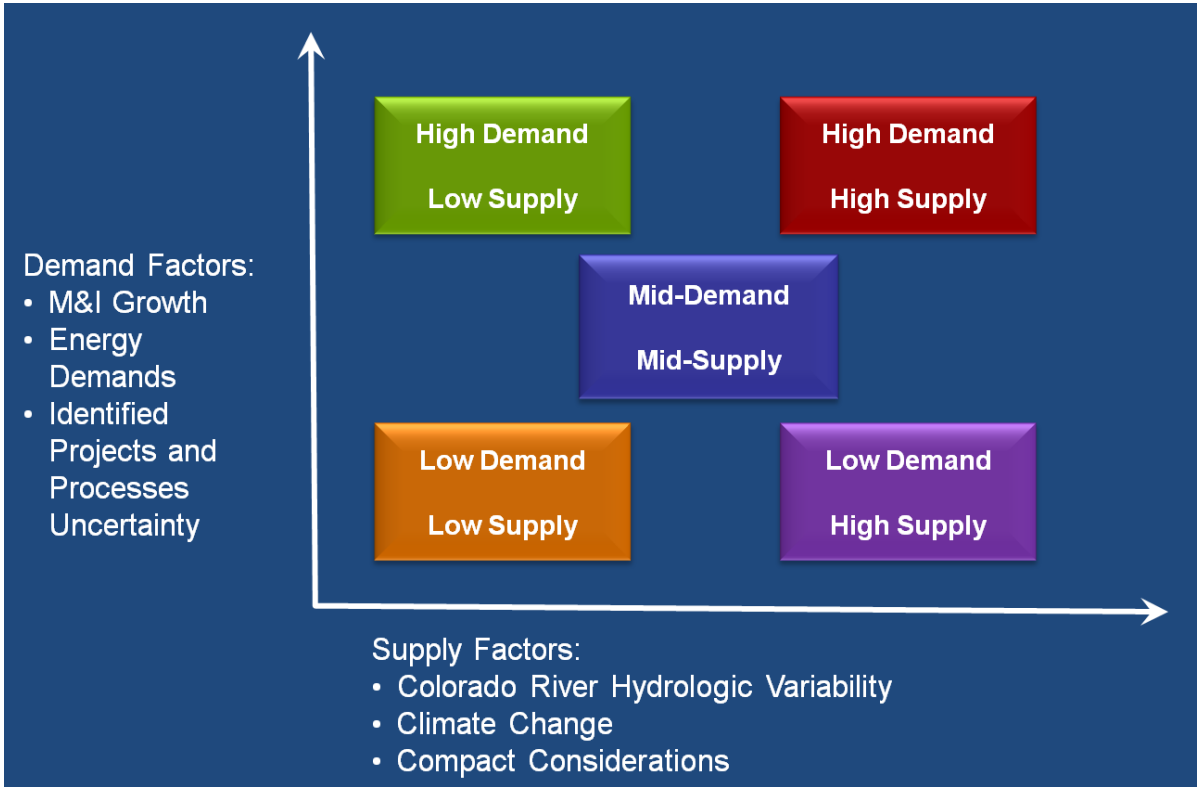
IBCC Meeting Schedule



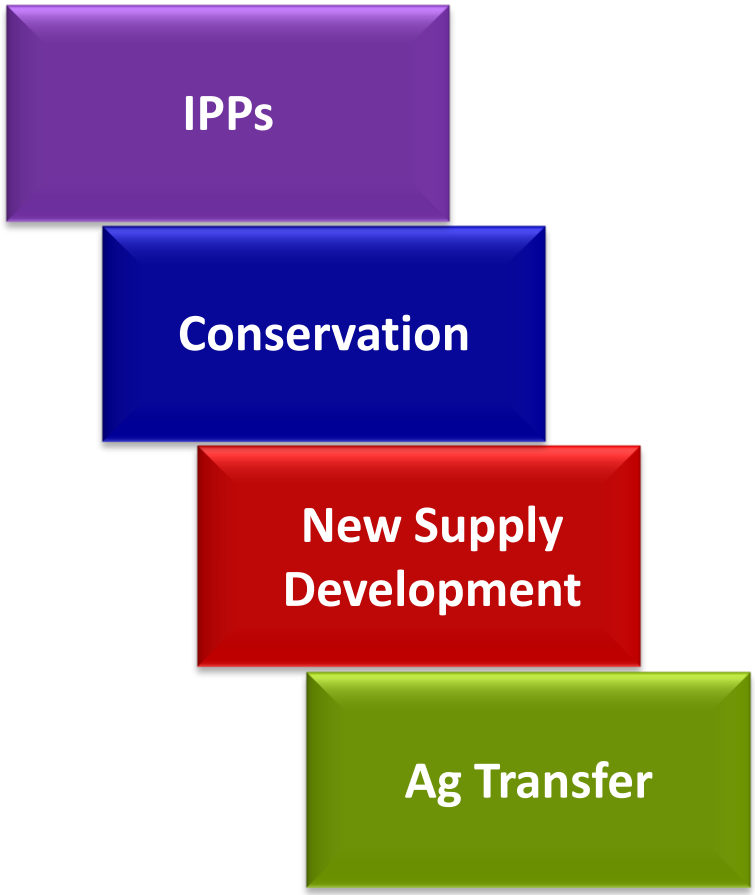
Scenario Planning and Adaptive Management Definitions

Scenario Planning	A process to formulate and evaluate future uncertainties regarding demand and supply
Scenarios	Alternative futures (water demand and supply) that portfolios will be tested against
Portfolios	Different combinations of strategies to address future M&I demands
Strategies	Groupings of similar projects and methods (e.g., "four legs of the stool," IPPs, Conservation, Ag Transfers, and New Supply)
Projects and Methods	Specific actions that help implement a strategy (e.g., IPPs, roundtable projects and methods, long-term conceptual projects)
Metrics	Evaluation indicators that assess how the portfolios relate to meeting M&I demands, nonconsumptive needs, and agricultural needs
No Regrets Actions	Near-term strategies or projects and methods that produce benefits under most future scenarios
Adaptive Management	The process of using triggers and outcomes to develop phased implementation of future projects and methods
Triggers	Decision points based on scenarios used to identify possible outcomes
Outcomes	Varied future paths based on triggers and used to establish phasing of future projects and methods

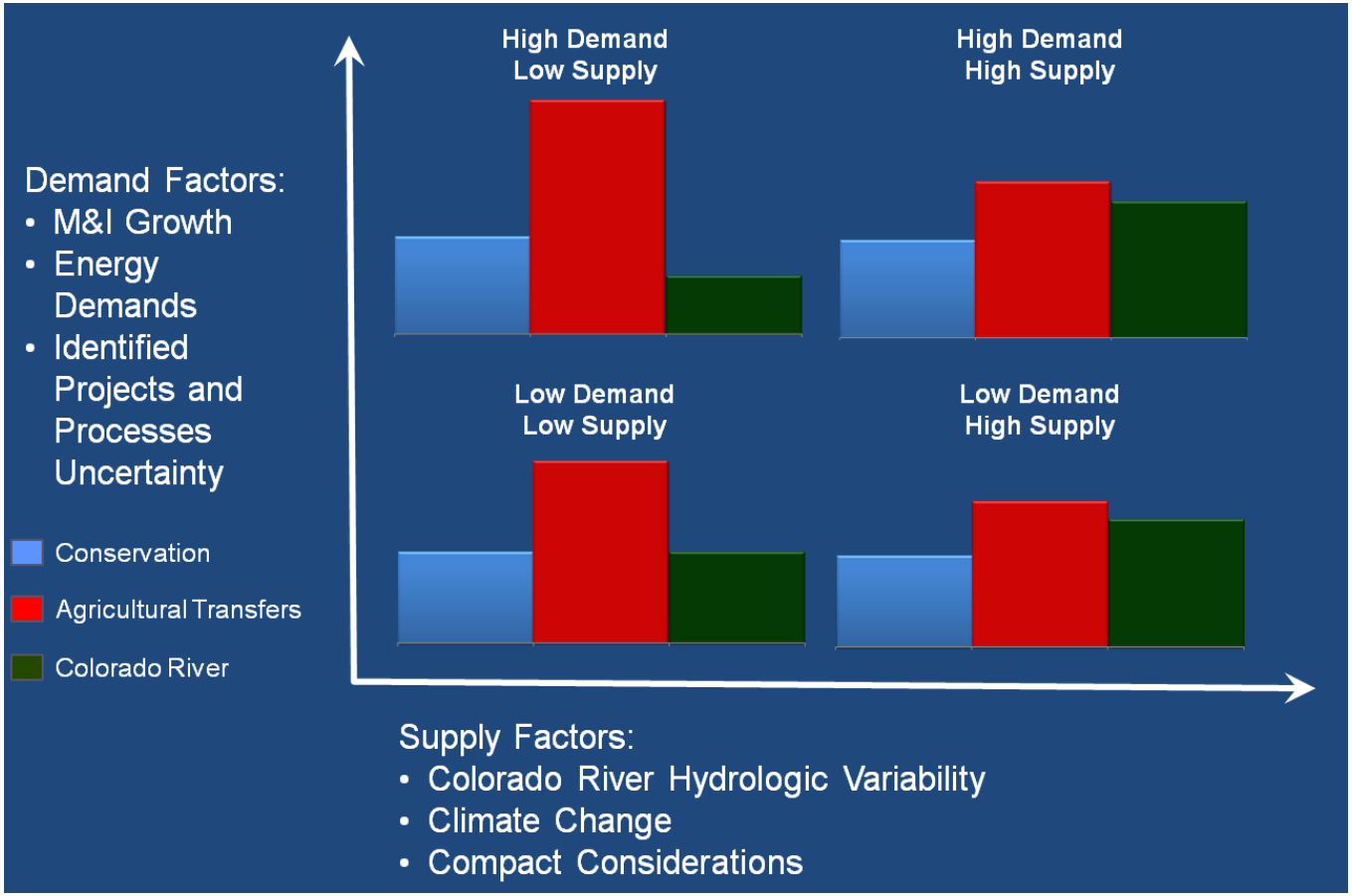
Scenarios – Different future conditions. Each scenario represents a different, but plausible, representation of circumstances that would result in differing statewide M&I demands and water supply.



Strategies – Groupings of similar projects and methods that are broad categories of solutions for meeting Colorado's M&I demands.



Portfolios – Combinations of strategies that meet M&I demands. Portfolios will be evaluated for future scenarios.



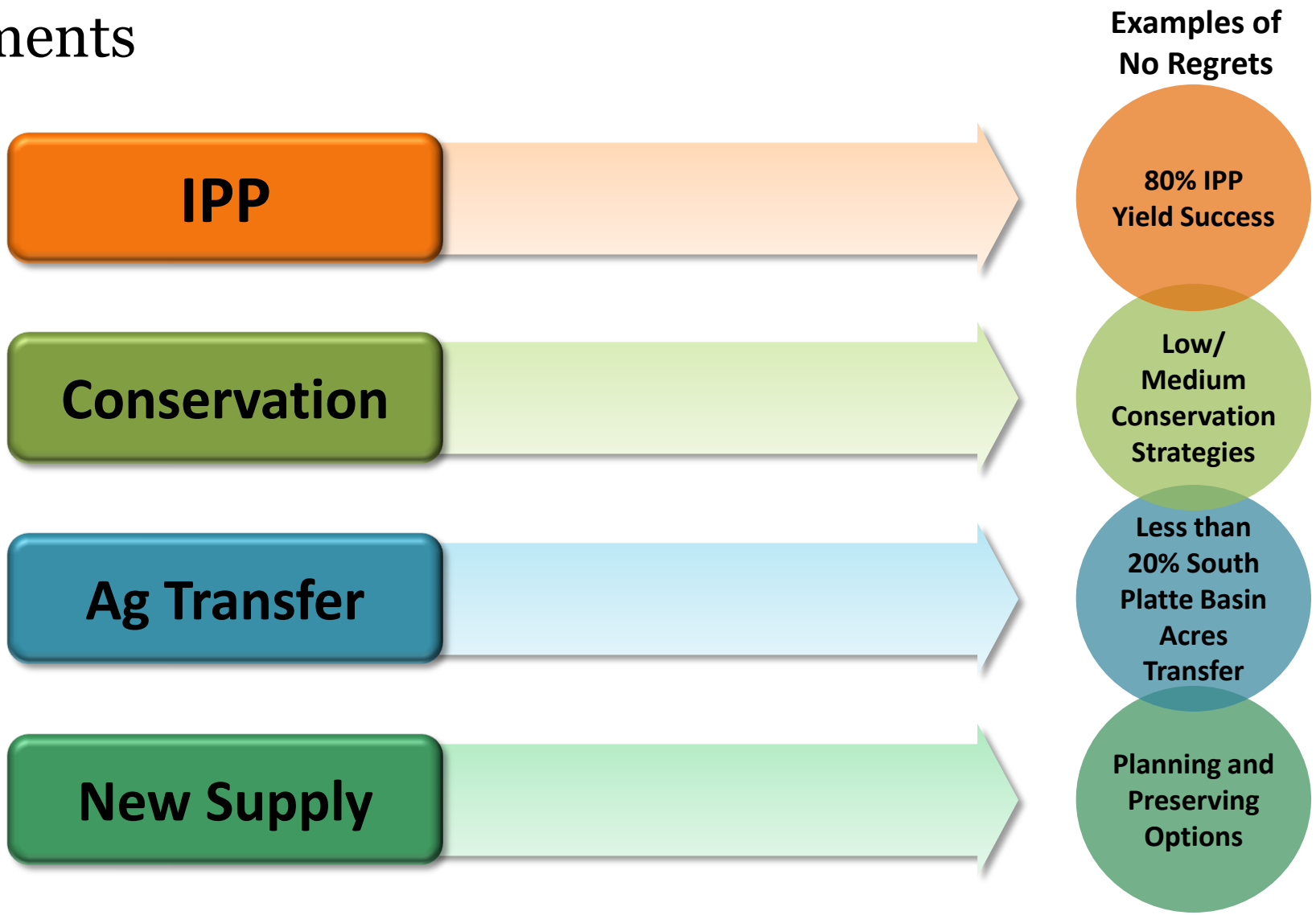
Projects and Methods – Specific actions that help implement each strategy. Each Basin Roundtable is responsible for proposing projects and methods to meet their consumptive and nonconsumptive needs. Examples include:

- A water project helps implement a new water supply development strategy
- A rotational fallowing program helps implement an agricultural transfer strategy
- A block rate pricing program helps implement a conservation strategy

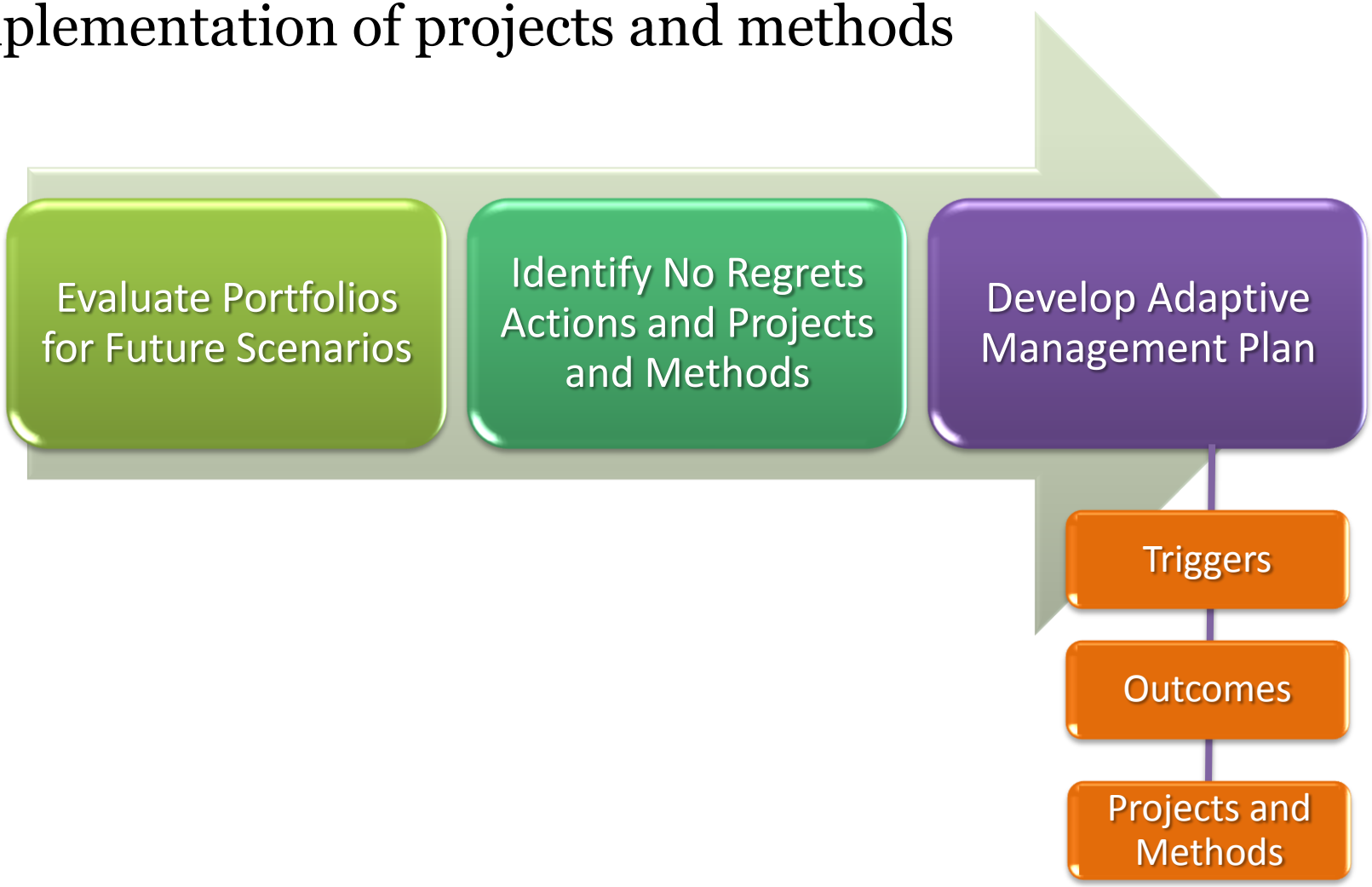
Metrics will be developed to evaluate benefits and impacts of the portfolios, such as:

- Cost
- Environmental and recreational metrics
- Reduction in irrigated acres
- Reliability
- Regional cooperation
- Rotational fallowing program size

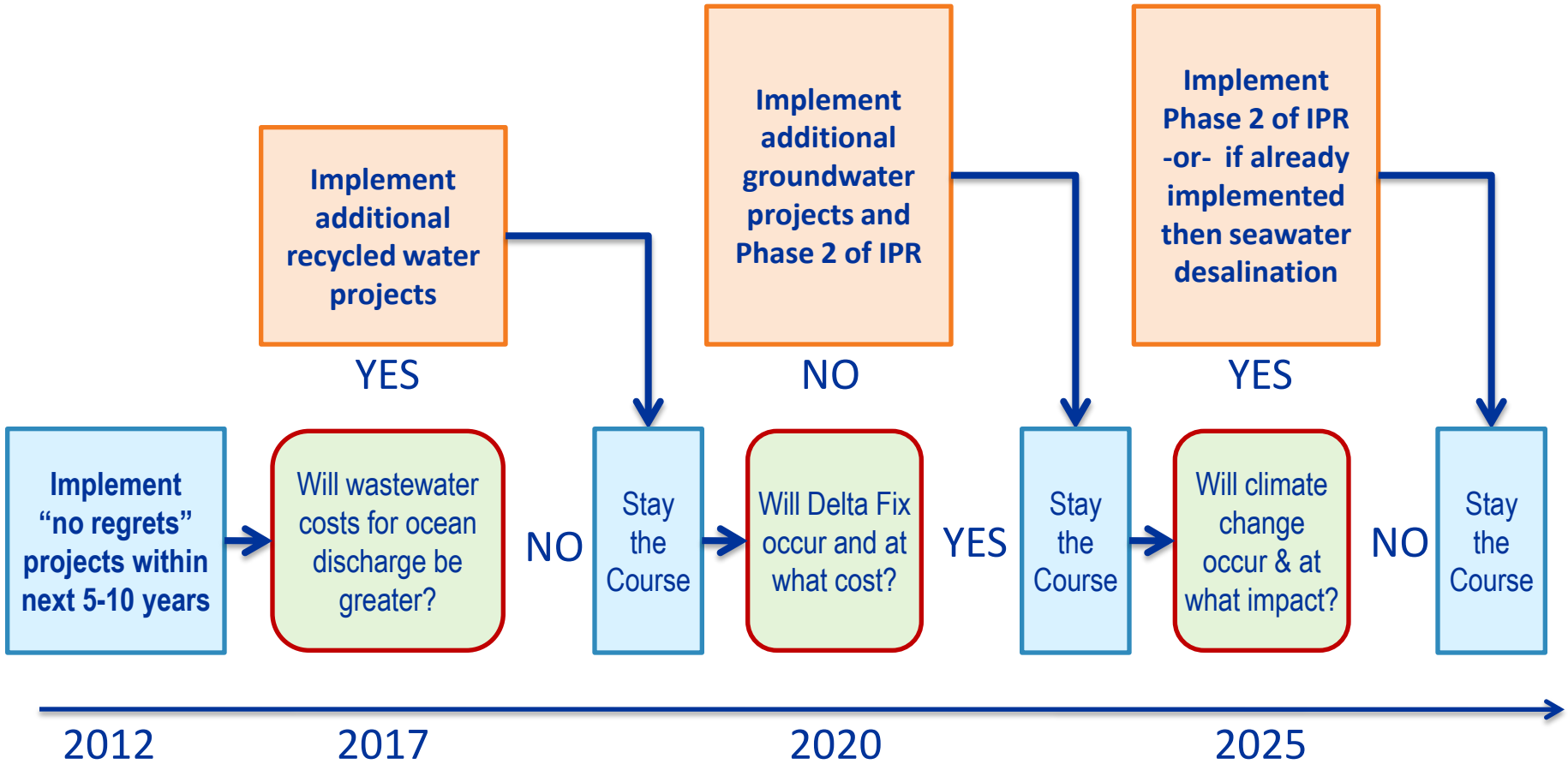
The IBCC will identify "No Regrets" portfolio elements



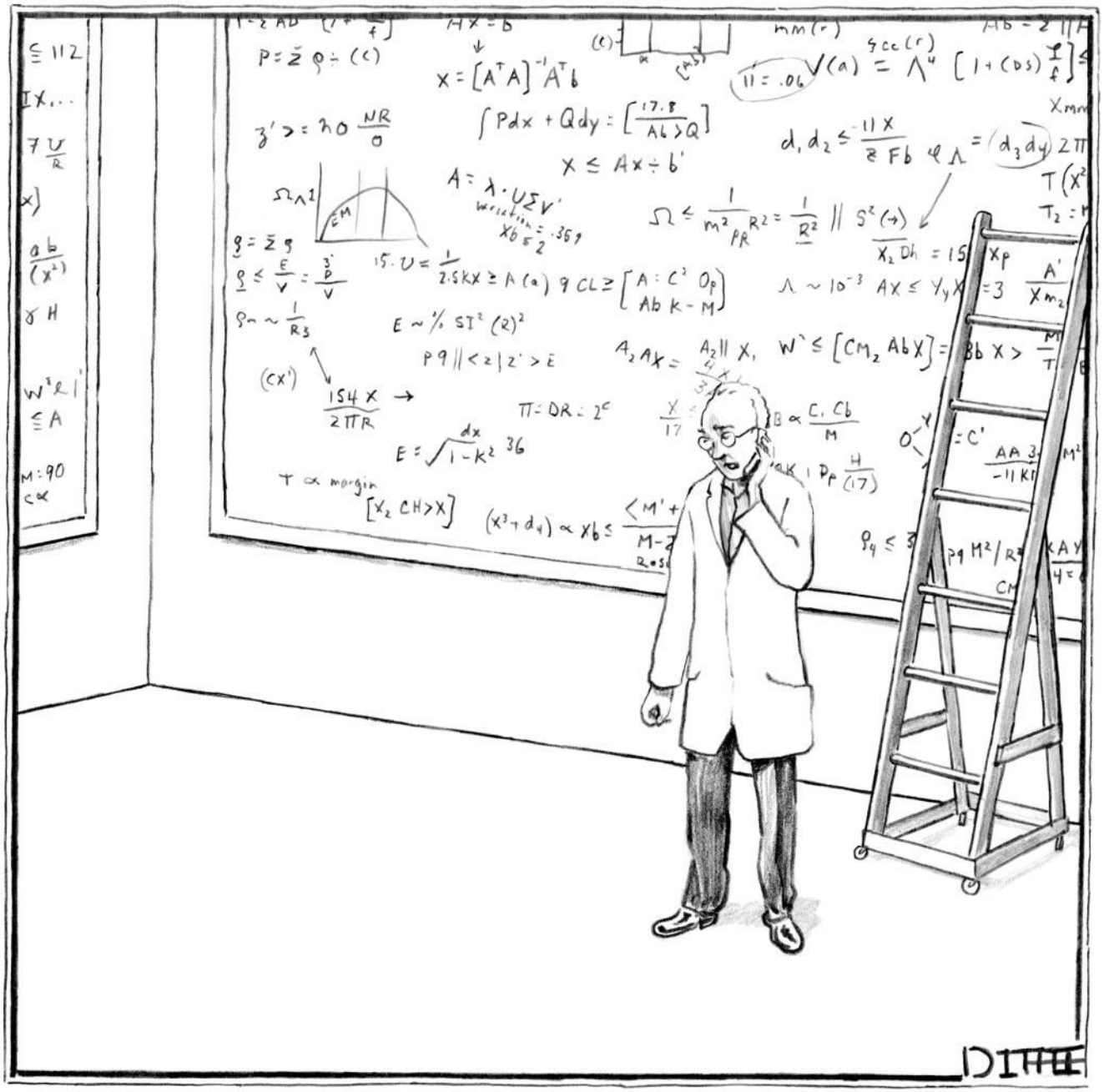
Adaptive management will lead to phased implementation of projects and methods



Adaptive Management Plan Example from San Diego



Anticipated decision points, but will be re-assessed every 5 years



"I just figured out why we've never had girlfriends."

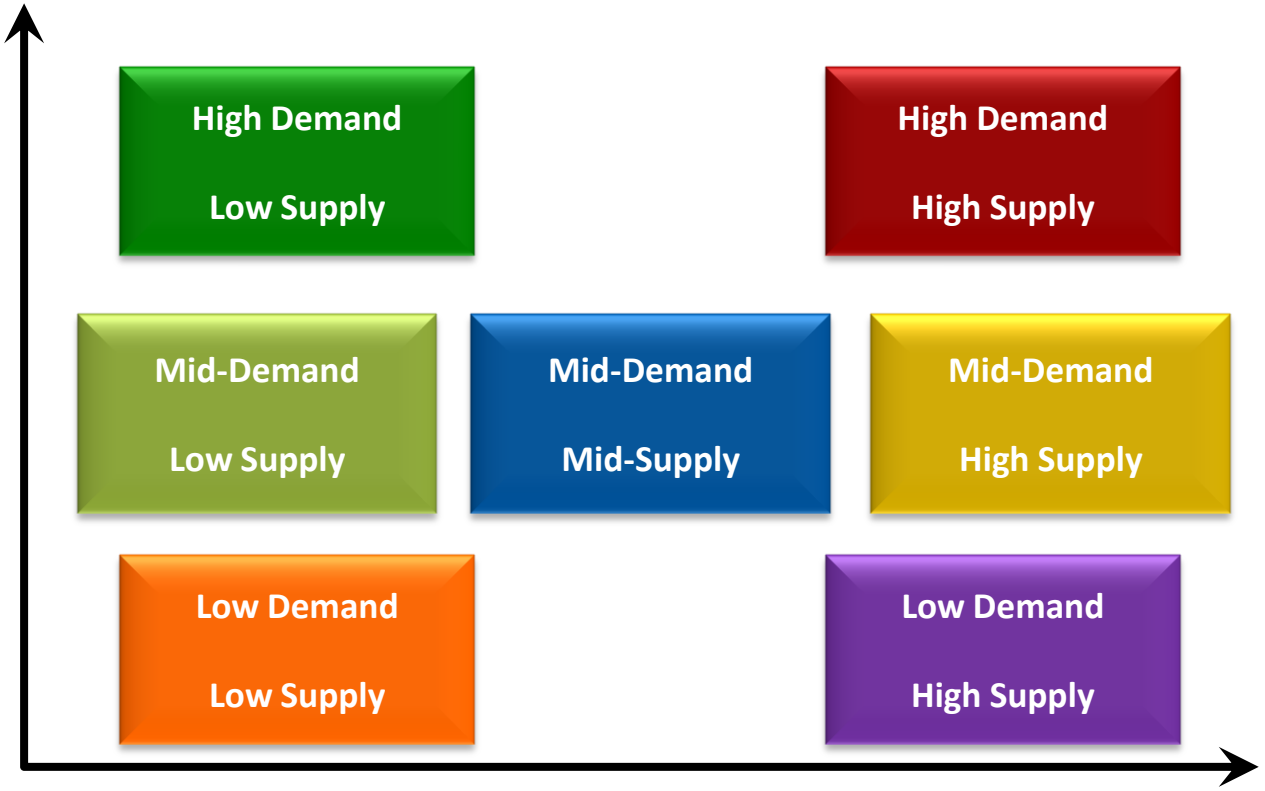
Break

Applications of Scenario Planning

Identify a Set of Portfolios to Evaluate for a Range of Scenarios

Scenario development is underway

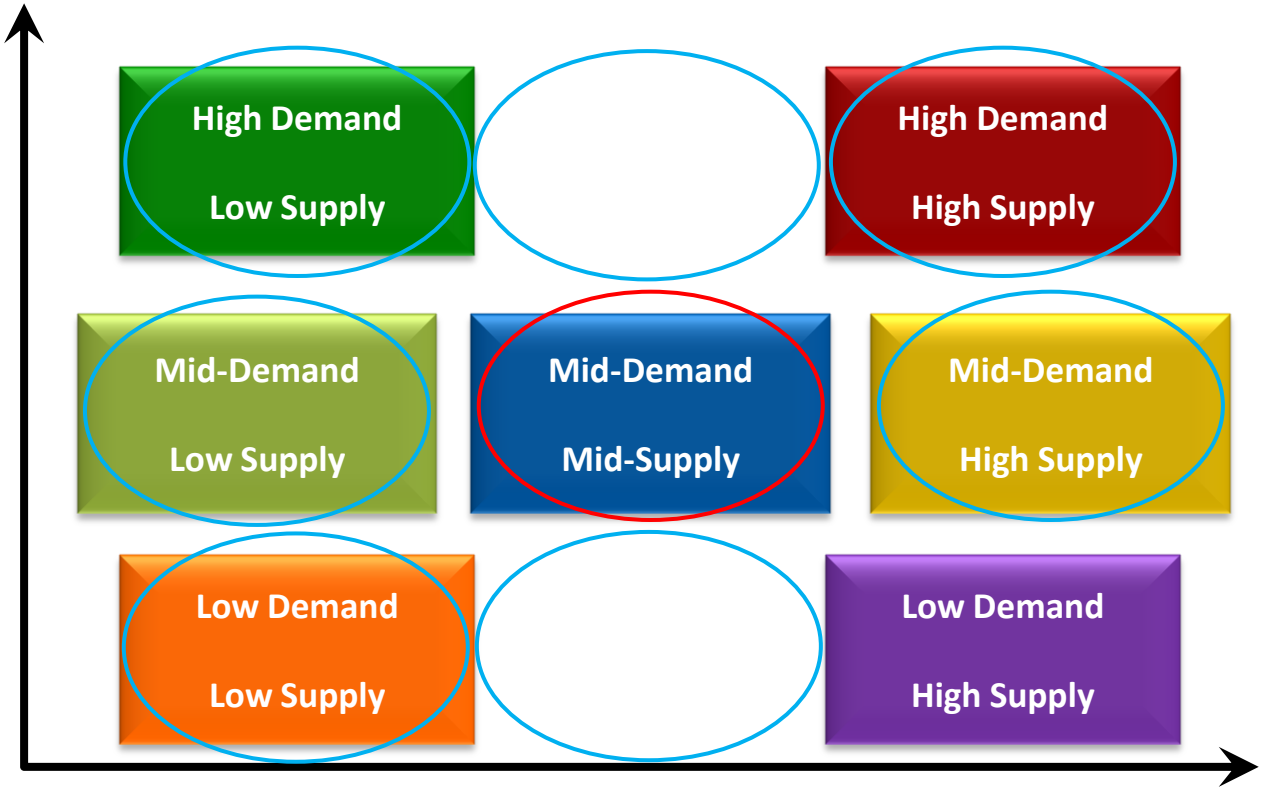
Demand Factors:
- M&I growth
- Energy demands
- GW Replacement



CO River Supply Factors:
- Colorado River hydrologic variability
- Climate change
- Compact considerations

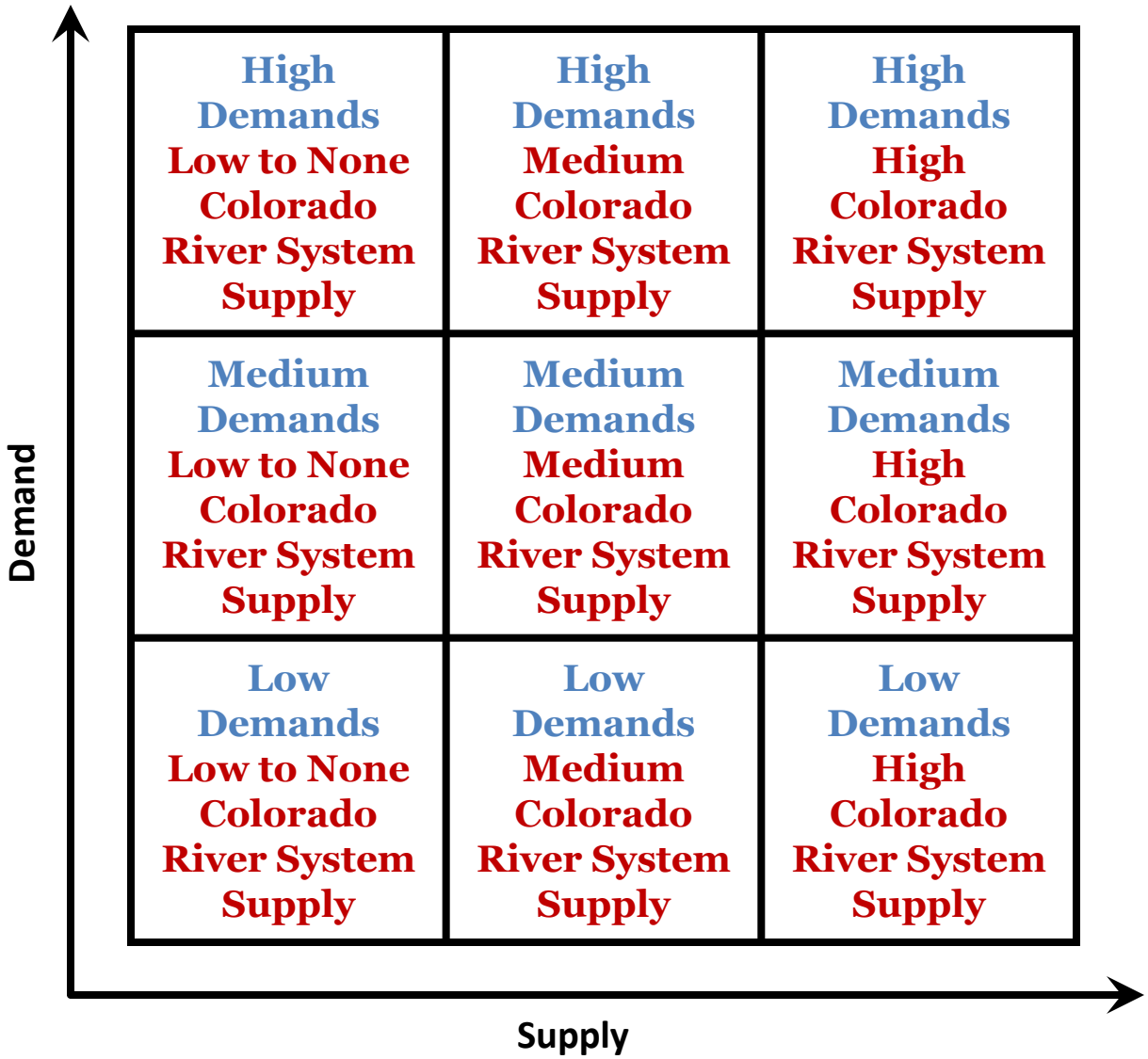
Scenarios have been identified as a result of the roundtable exercise

Demand Factors:
- M&I growth
- Energy demands
- GW Replacement



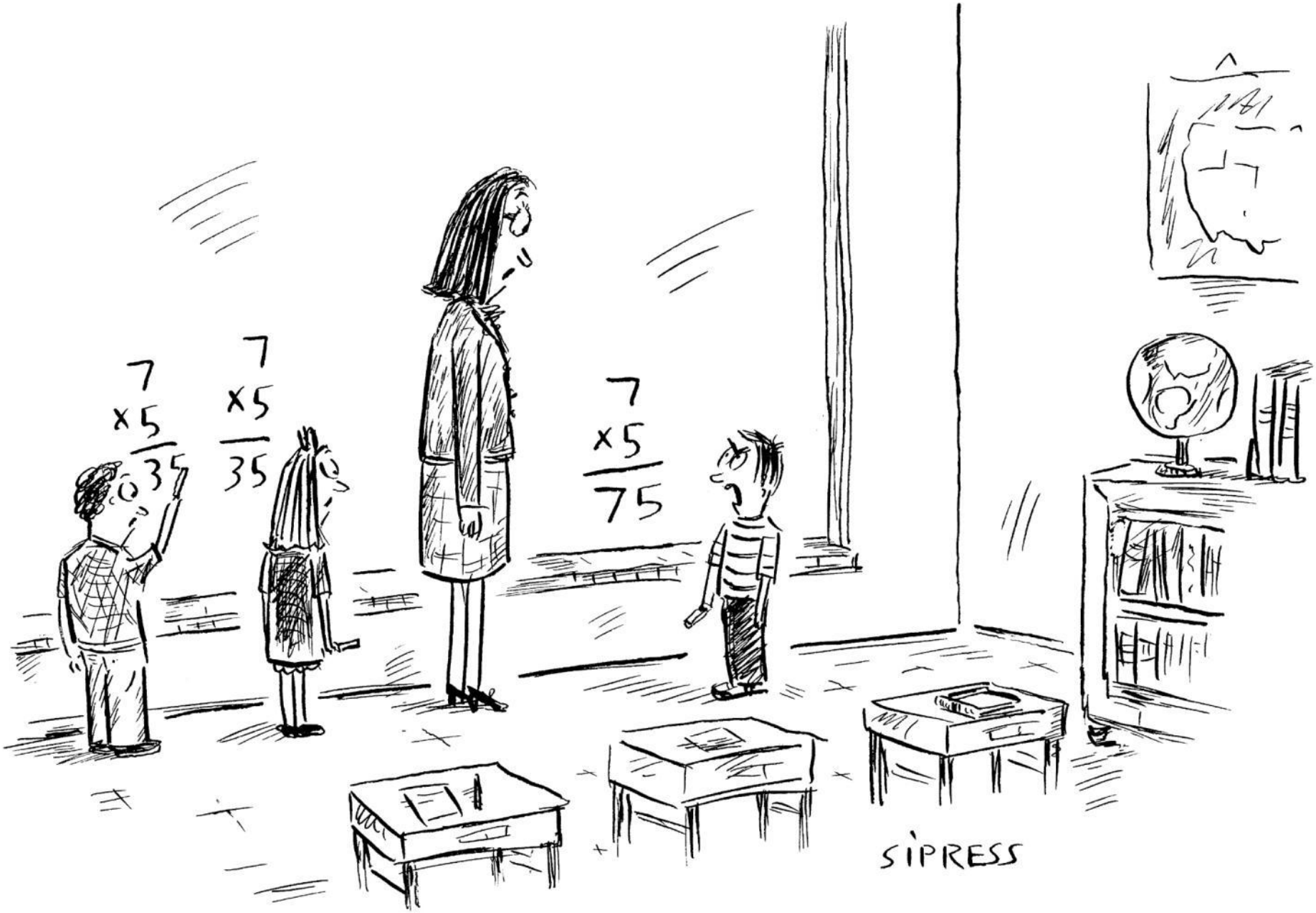
CO River Supply Factors:
- Colorado River hydrologic variability
- Climate change
- Compact considerations

Portfolios will be evaluated using nine future scenarios



Scenario Definitions

High Demands High Supply	Booming economy and full oil shale development on the West Slope result in high M&I demands. Climate variability and regulatory/institutional drivers do not impact Colorado River system supply.
Mid Demands High Supply	Population growth follows historic trends and moderate oil shale development on the West Slope result in medium M&I demands. Climate variability and regulatory/institutional drivers do not impact Colorado River system supply.
Low Demands High Supply	There is minimal economic recovery resulting in low M&I demands. Climate variability and regulatory/institutional drivers do not impact Colorado River system supply.
High Demands Mid Supply	Booming economy and full oil shale development on the West Slope result in high M&I demands. Climate variability and regulatory/institutional drivers result in medium Colorado River system supply.
Mid Demands Mid Supply	Population growth follows historic trends and moderate oil shale development on the West Slope result in medium M&I demands. Climate variability and regulatory/institutional drivers result in medium Colorado River system supply.
Low Demands Mid Supply	There is minimal economic recovery resulting in low M&I demands. Climate variability and regulatory/institutional drivers result in medium Colorado River system supply.
High Demands Low Supply	Booming economy, full oil shale development on the West Slope and climate variability result in high M&I demands. Climate variability and regulatory/institutional drivers result in low Colorado River system supply.
Mid Demands Low Supply	Population growth follows historic trends, moderate oil shale development on the West Slope, and climate variability result in medium M&I demands. Climate variability and regulatory/institutional drivers result in low Colorado River system supply.
Low Demands Low Supply	There is minimal economic recovery and climate variability result in low M&I demands. Climate variability and regulatory/institutional drivers result in low Colorado River system supply.



"It may be wrong, but it's how I feel."

Summary Set of Portfolios

Based on SWSI 2010, the Basin Roundtables' work, and recent completed studies, a spectrum of low, medium, and high M&I demands will be developed for summary set of portfolios

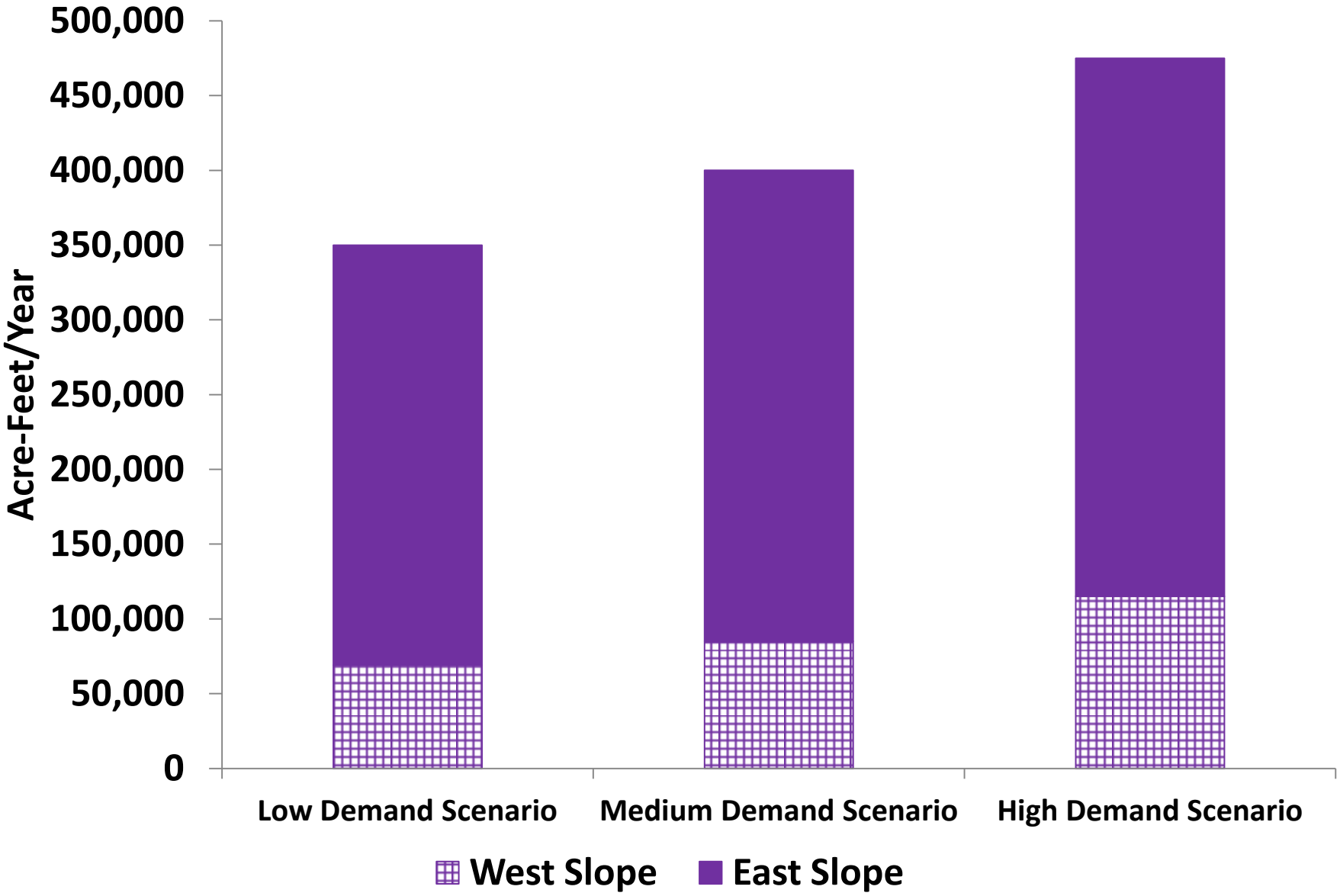
- Need to factor in climate variability for the demand side based on:
  - CRWAS
  - Colorado River Basin Study
  - Front Range Vulnerability Study
- High demands for today's discussion based on roundtable work - increased demands 15% statewide

Summary of IPP amounts based on Basin Roundtable Portfolios

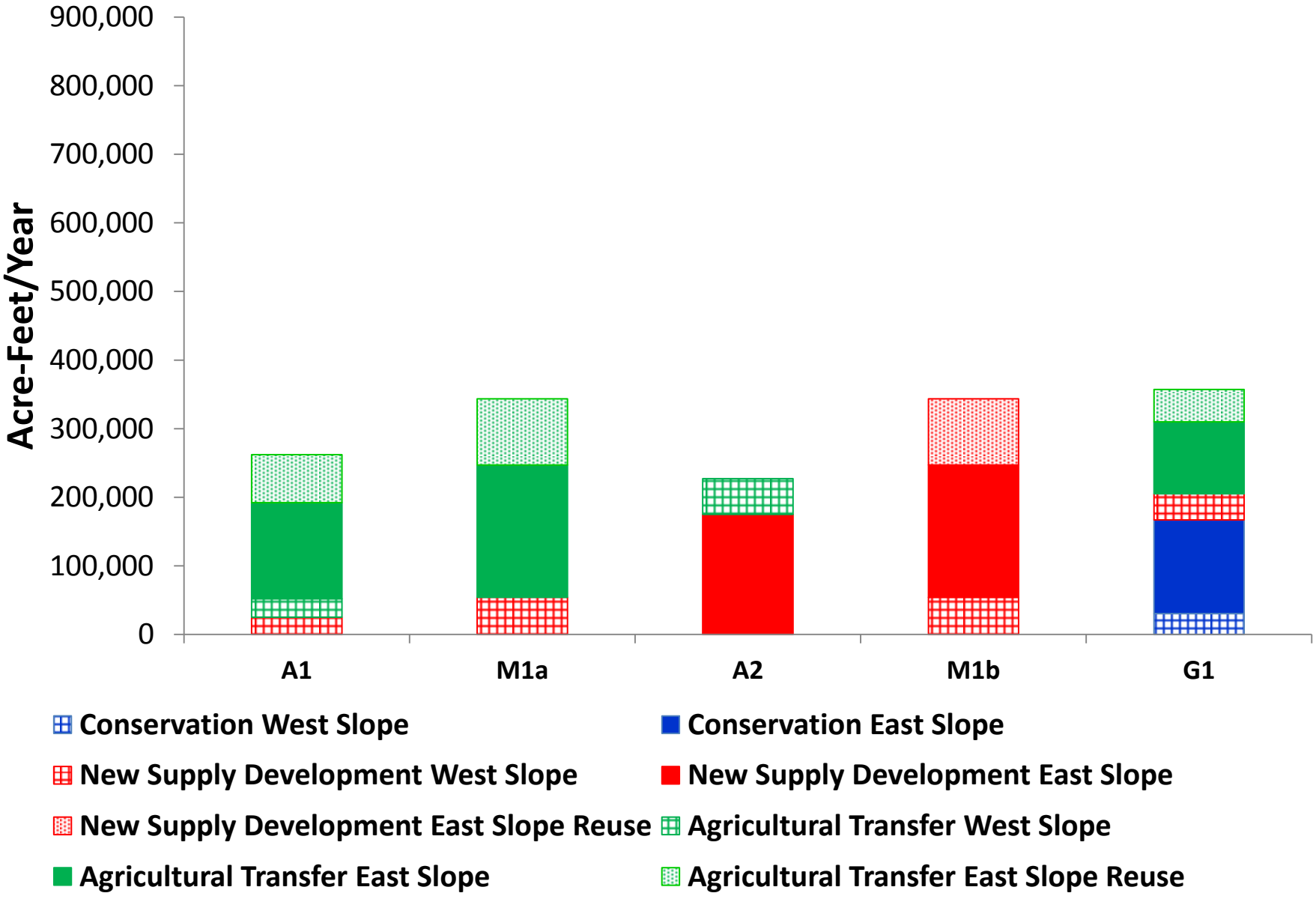
IPP Success Rate by Basin and IPP Type

Basin	Agricultural Transfer	Reuse	Existing Supplies	In-Basin Project	Transbasin	In-Basin Firming	Total Success Rate
Arkansas	75%	75%	100%	100%	75%	80%	86%
Colorado	90%	90%	100%	85%	90%	85%	91%
Gunnison	90%	90%	100%	90%	90%	90%	88%
Metro	75%	75%	100%	75%	75%	75%	88%
North Platte	0%	90%	100%	90%	90%	90%	100%
Rio Grande	90%	90%	100%	90%	90%	85%	93%
South Platte	50%	80%	100%	50%	85%	50%	65%
Southwest	100%	100%	100%	80%	100%	100%	88%
Yampa-White	100%	100%	100%	50%	100%	100%	67%

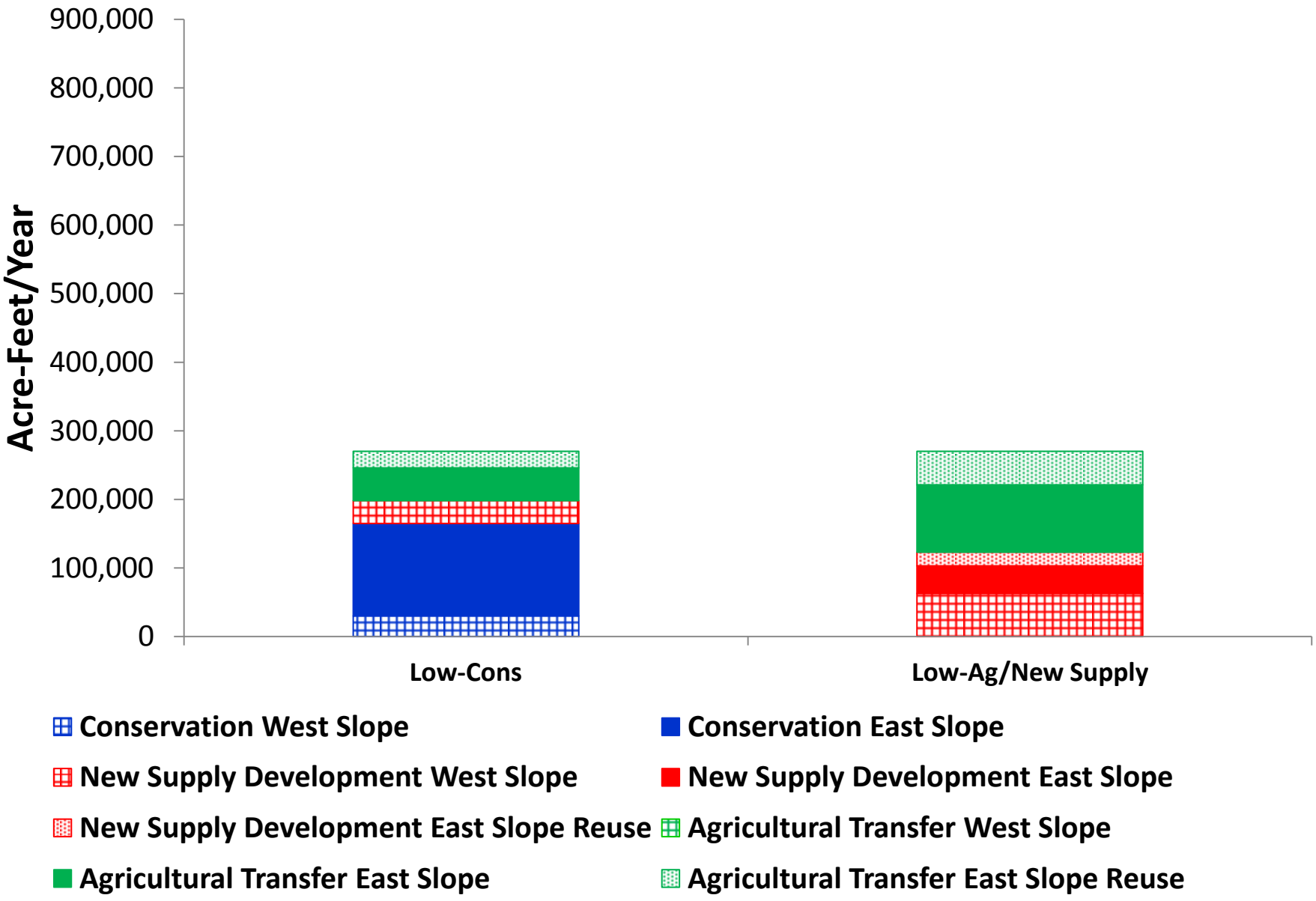
IPP Yields at 80 Percent Based on SWSI 2010



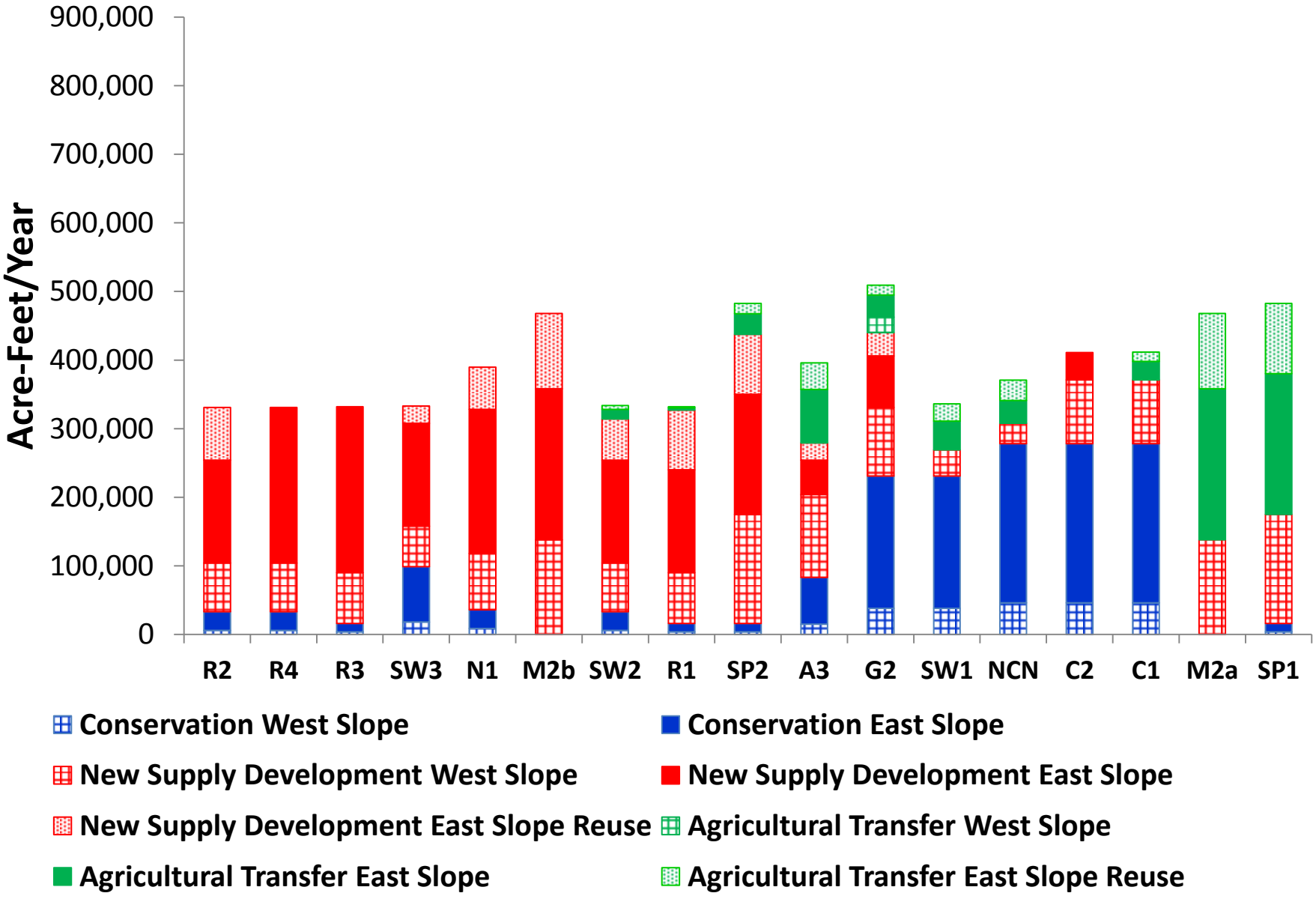
Low Demand Scenario Portfolios from Basin Roundtables



Low Demand Summary Portfolios



Medium Demand Scenario Portfolios from Basin Roundtables



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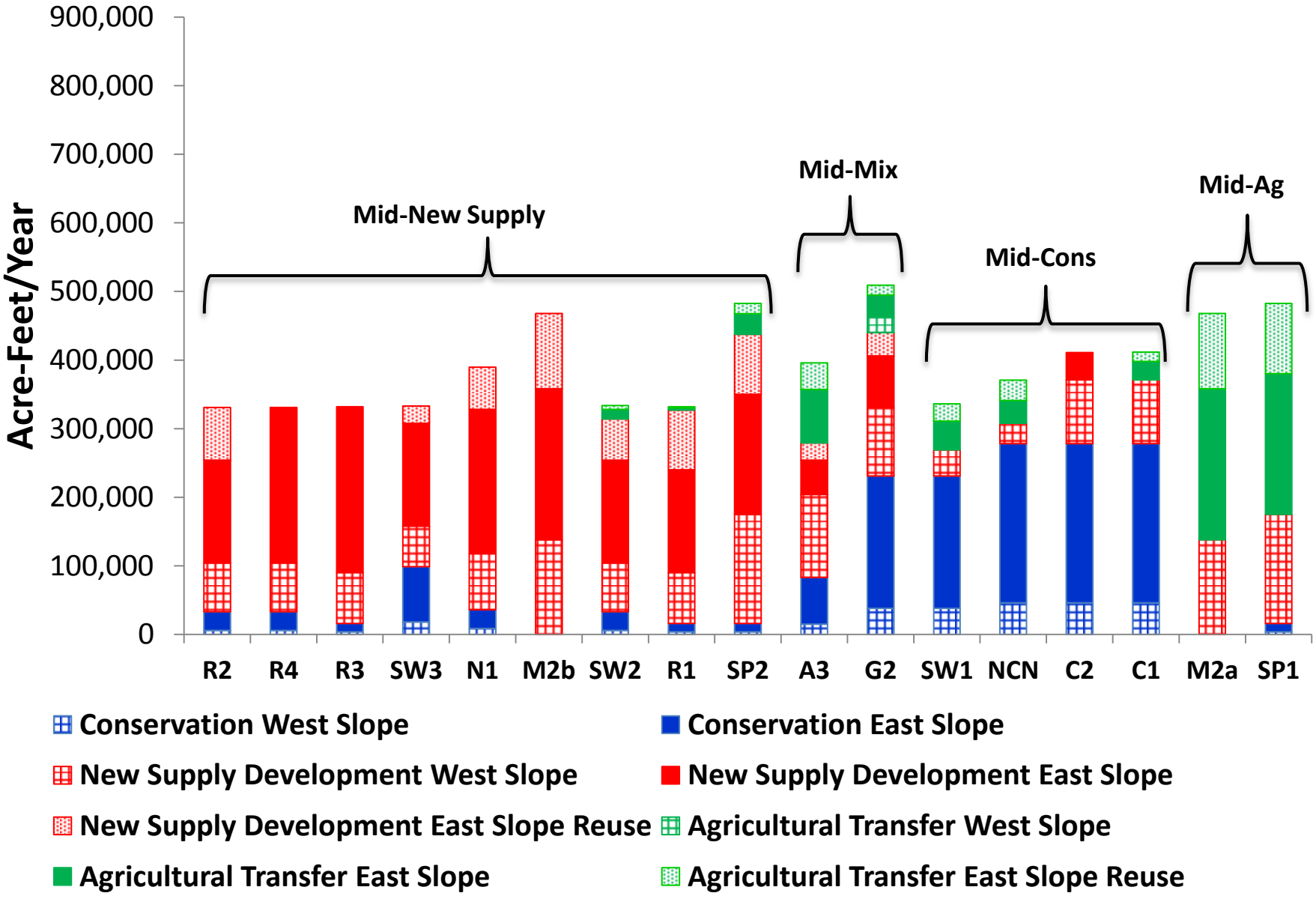
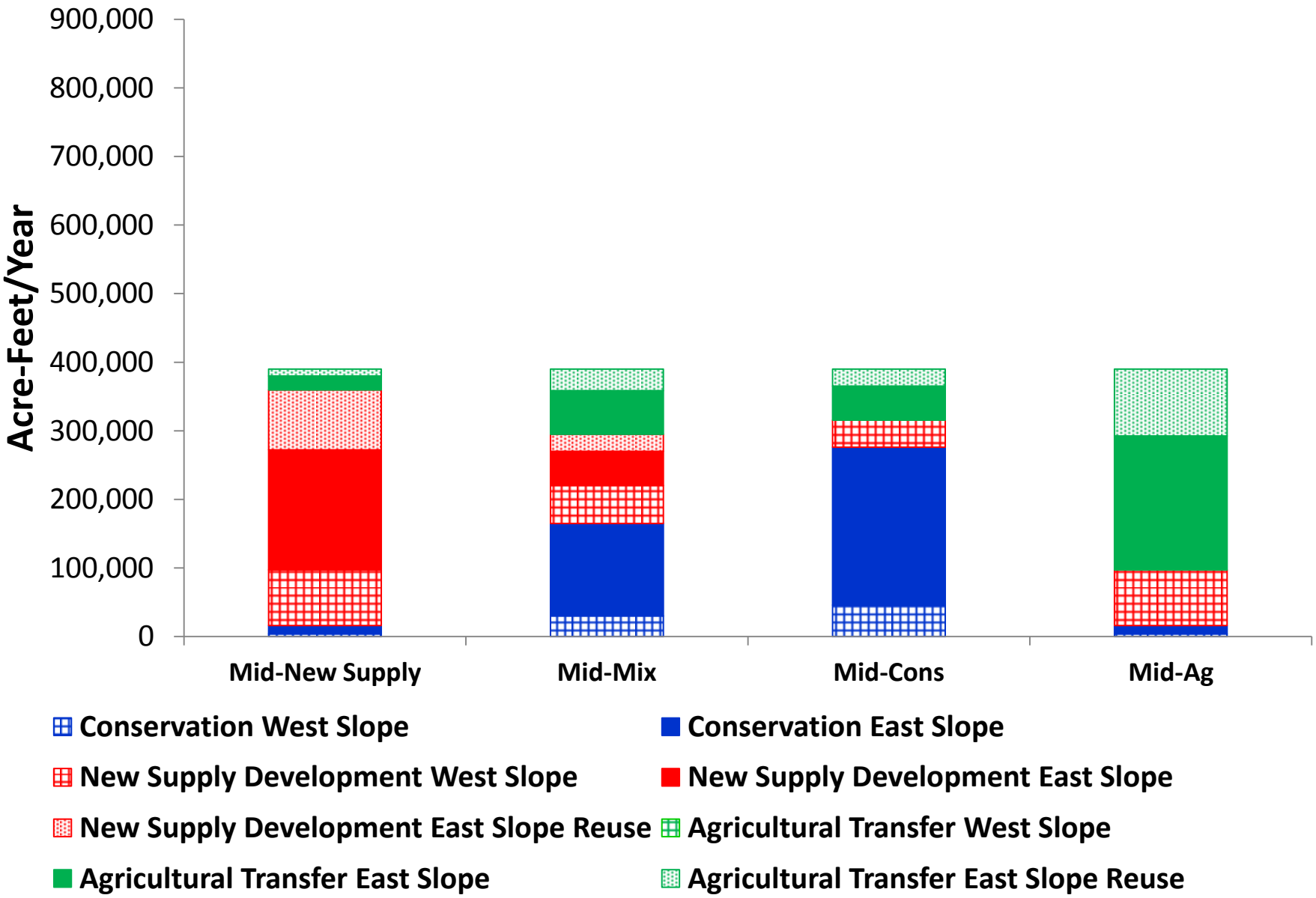
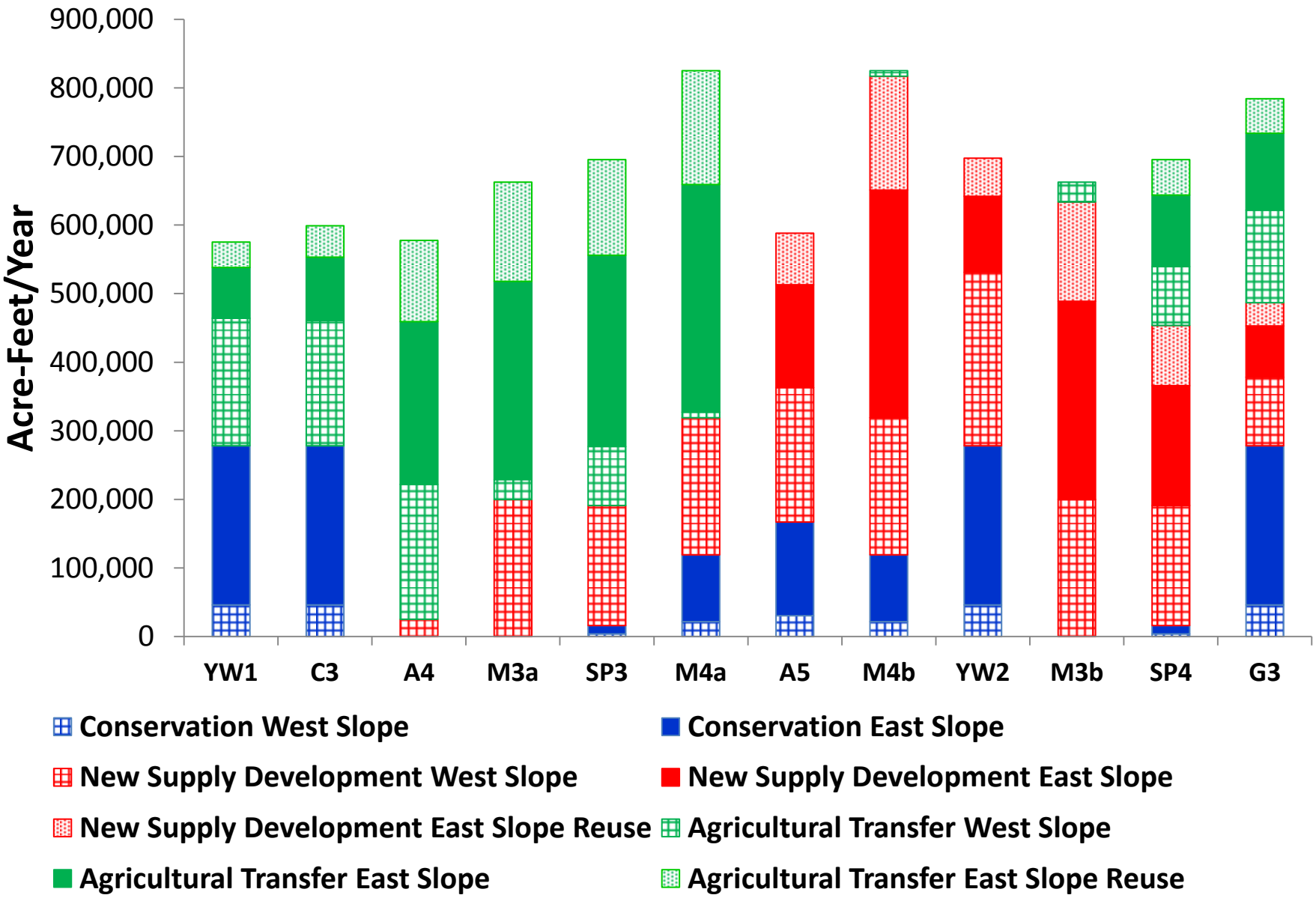


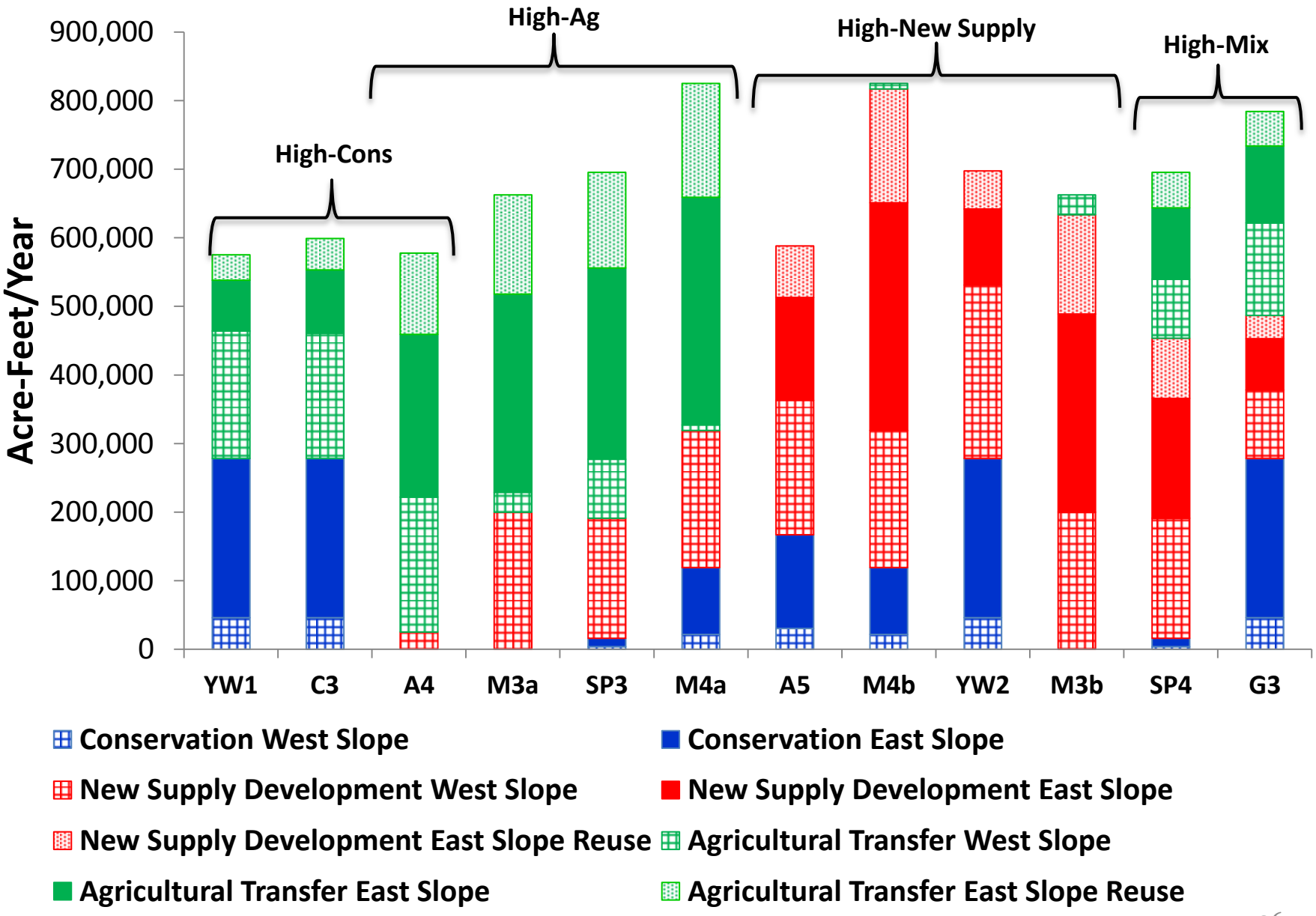
Medium Demand Summary Portfolios



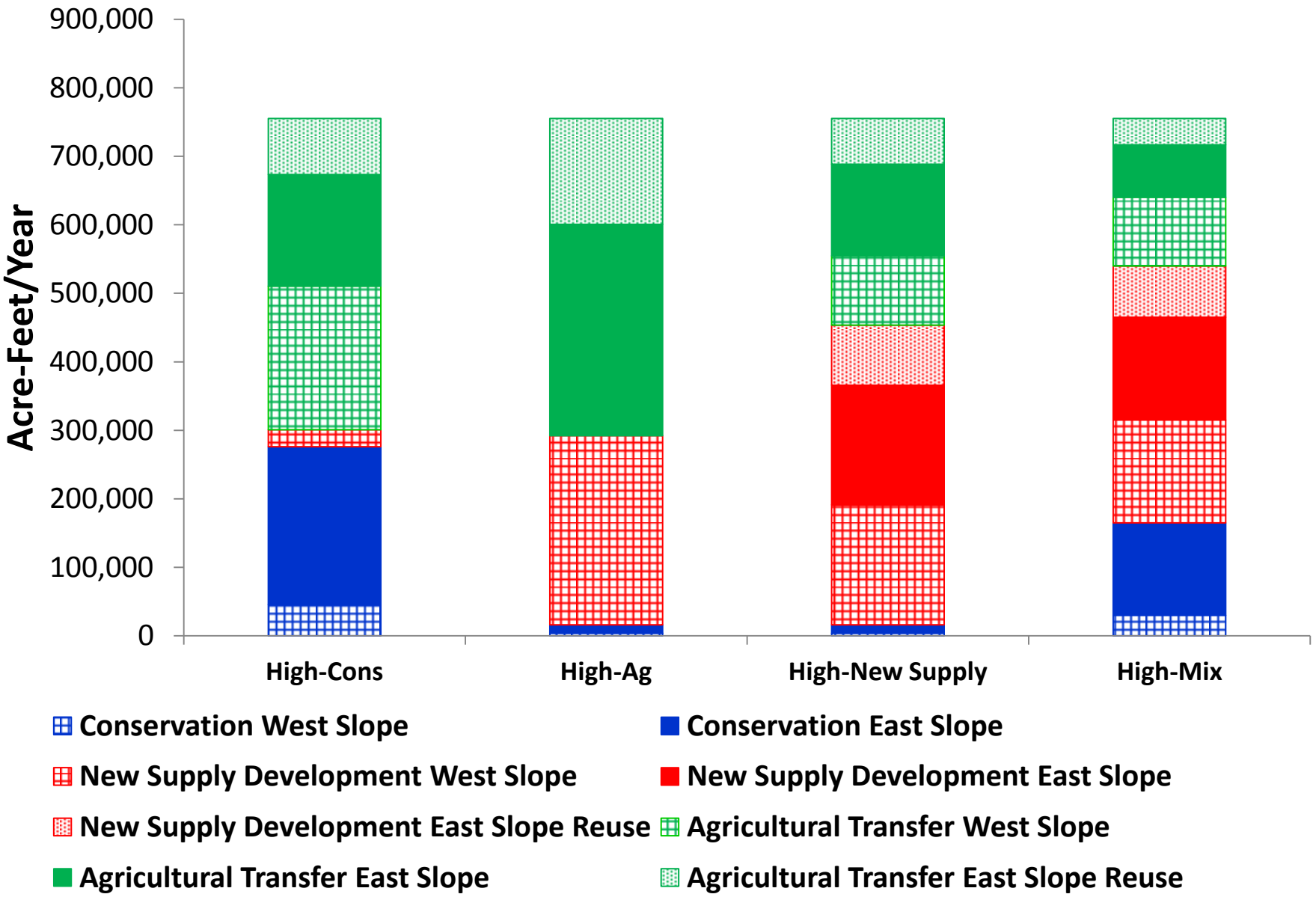
High Demand Scenario Portfolios from Basin Roundtable



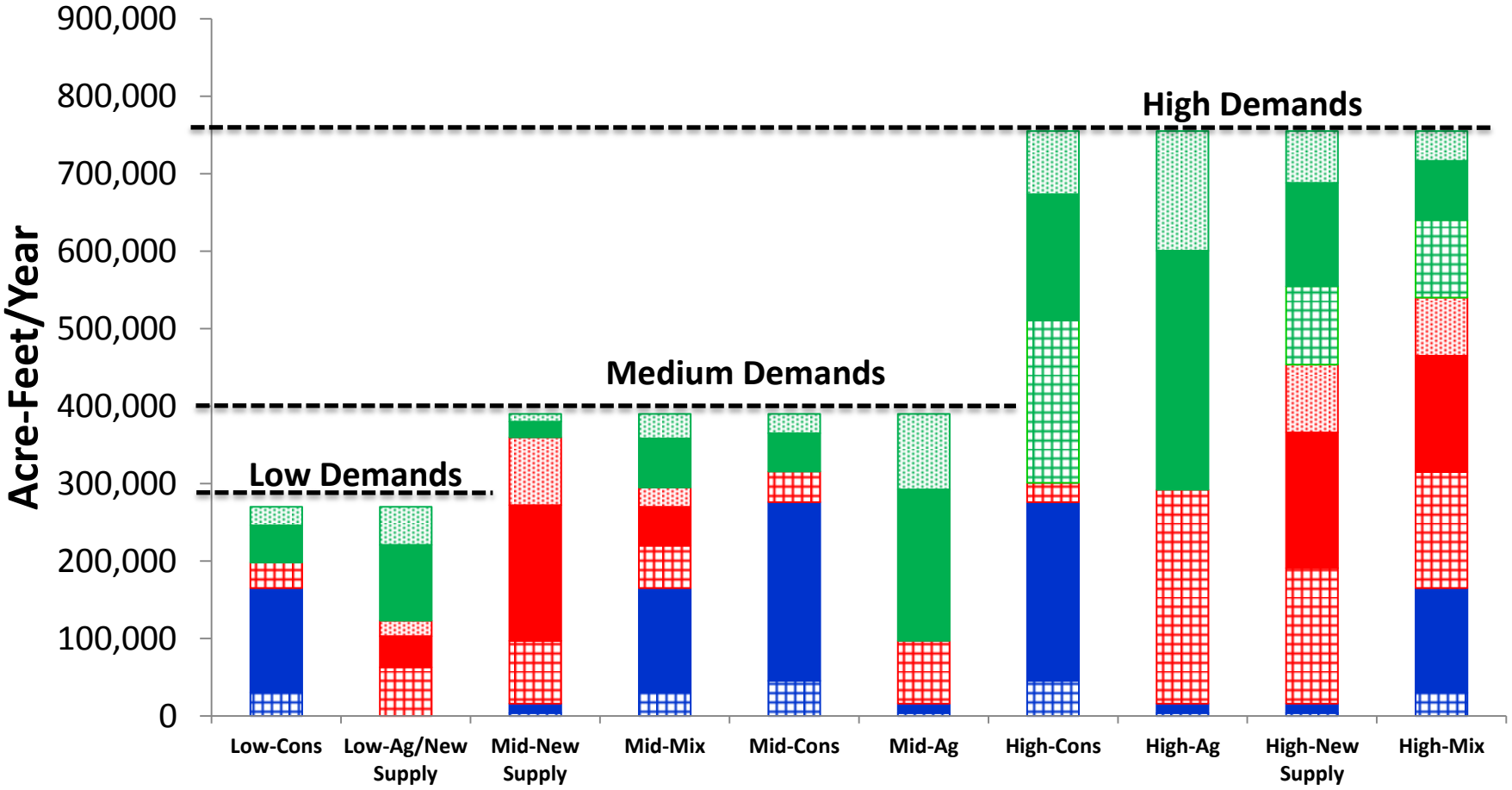
High Demand Scenario Portfolios from Basin Roundtable



High Demand Summary Portfolios

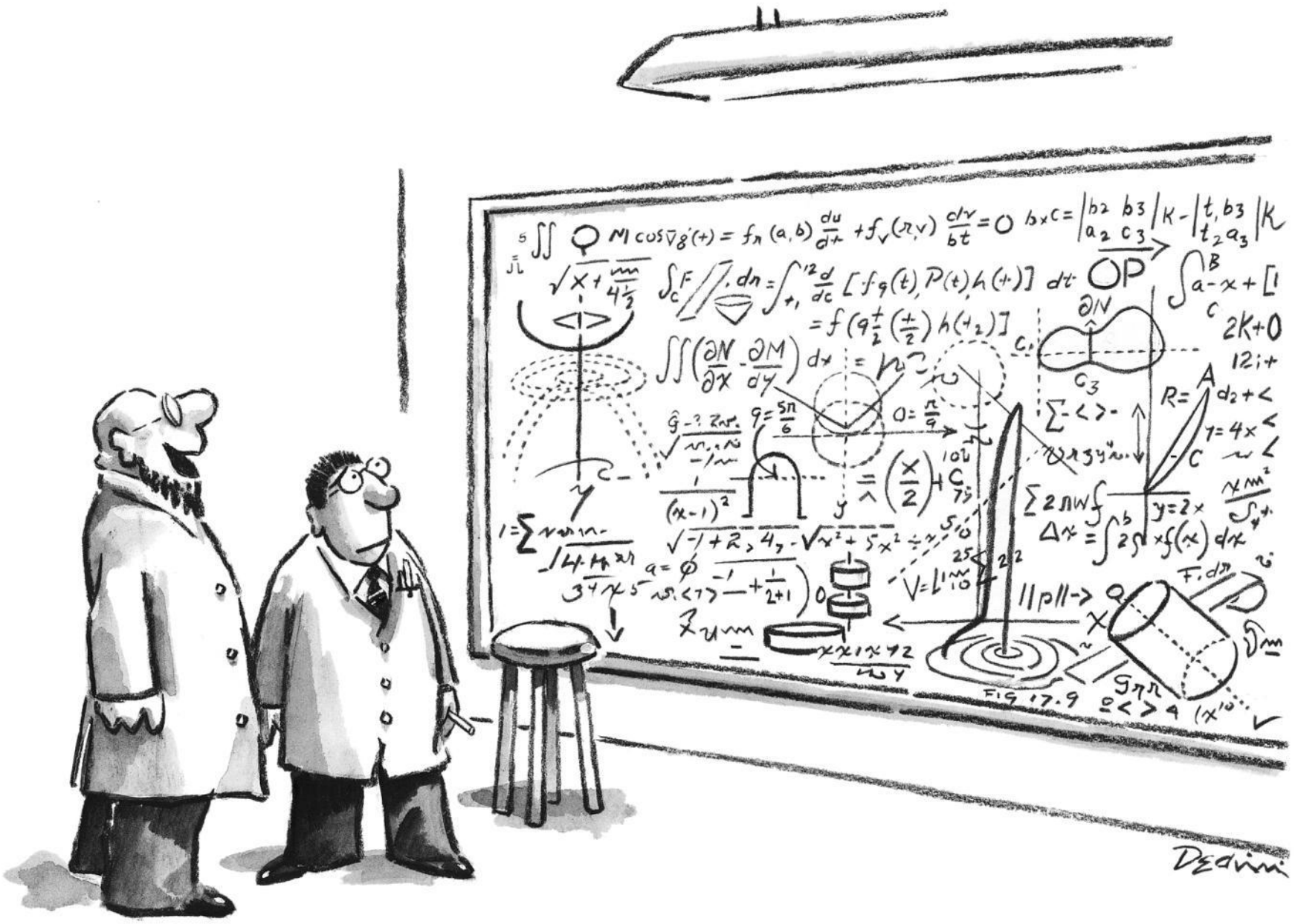


Summary Portfolios to Evaluate for a Range of Scenarios



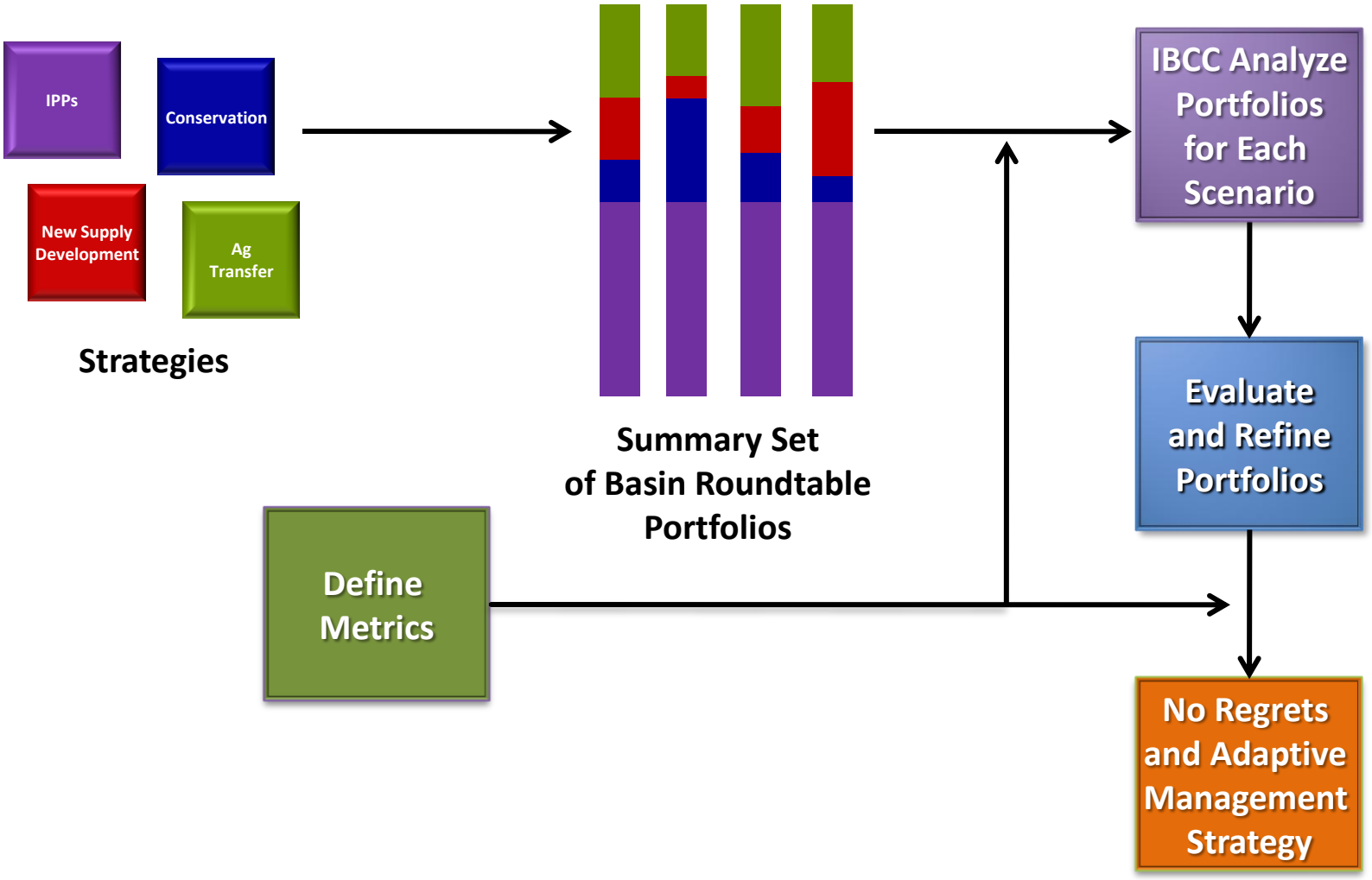
Break

Evaluation Metrics



"Hey, no problem!"

Portfolio Evaluation Process



Initial metrics have been developed as part of the Basin Roundtable Portfolio Tool Effort

- Ag Transfer
- Cost
- South Platte Depletion
- Nonconsumptive

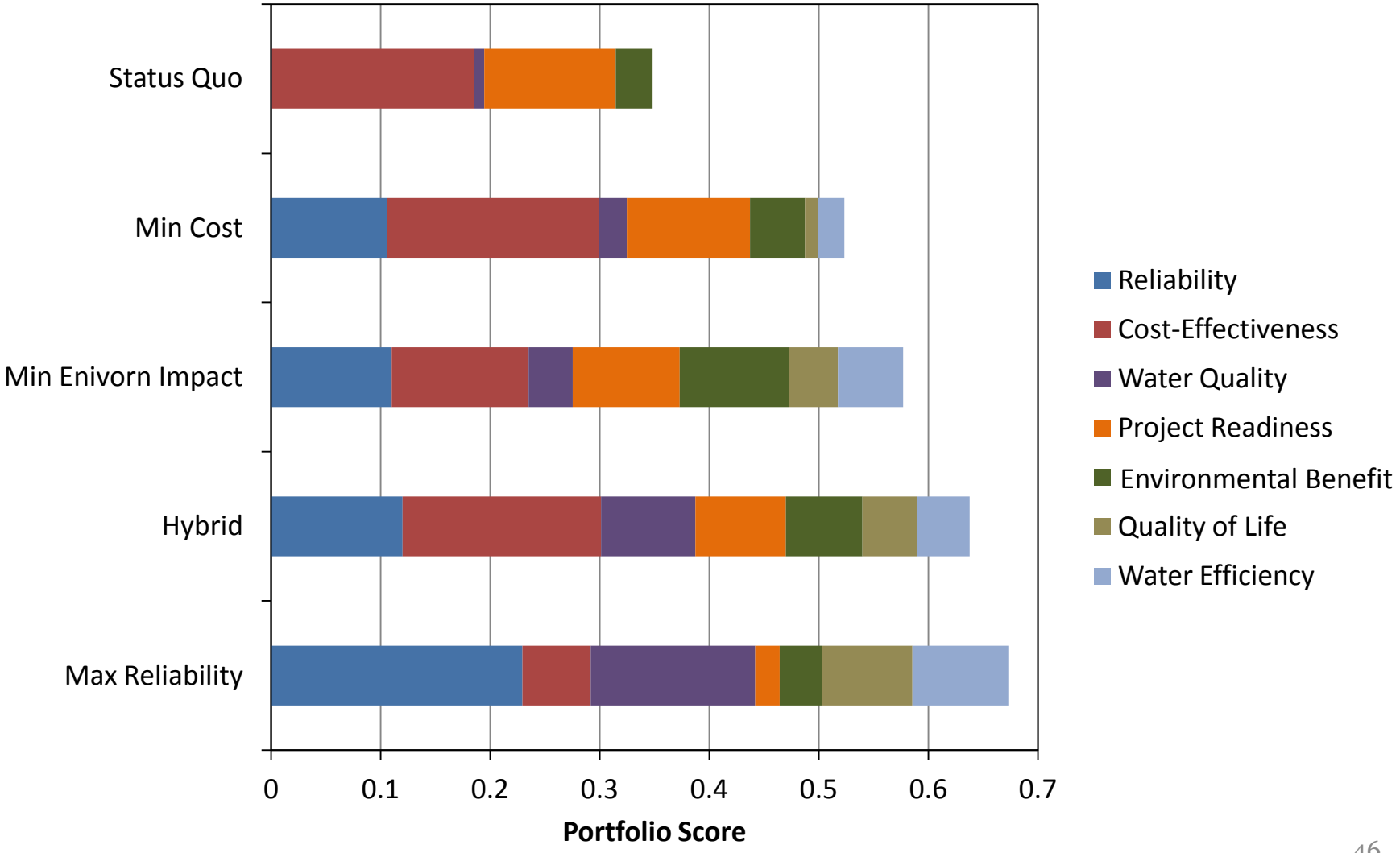
Recommended Metrics from Nonconsumptive Subcommittee

- Endangered species
- Gold Medal Trout
- Recreational boating
- Riparian
- Potential consideration of instream flows and flat-water boating

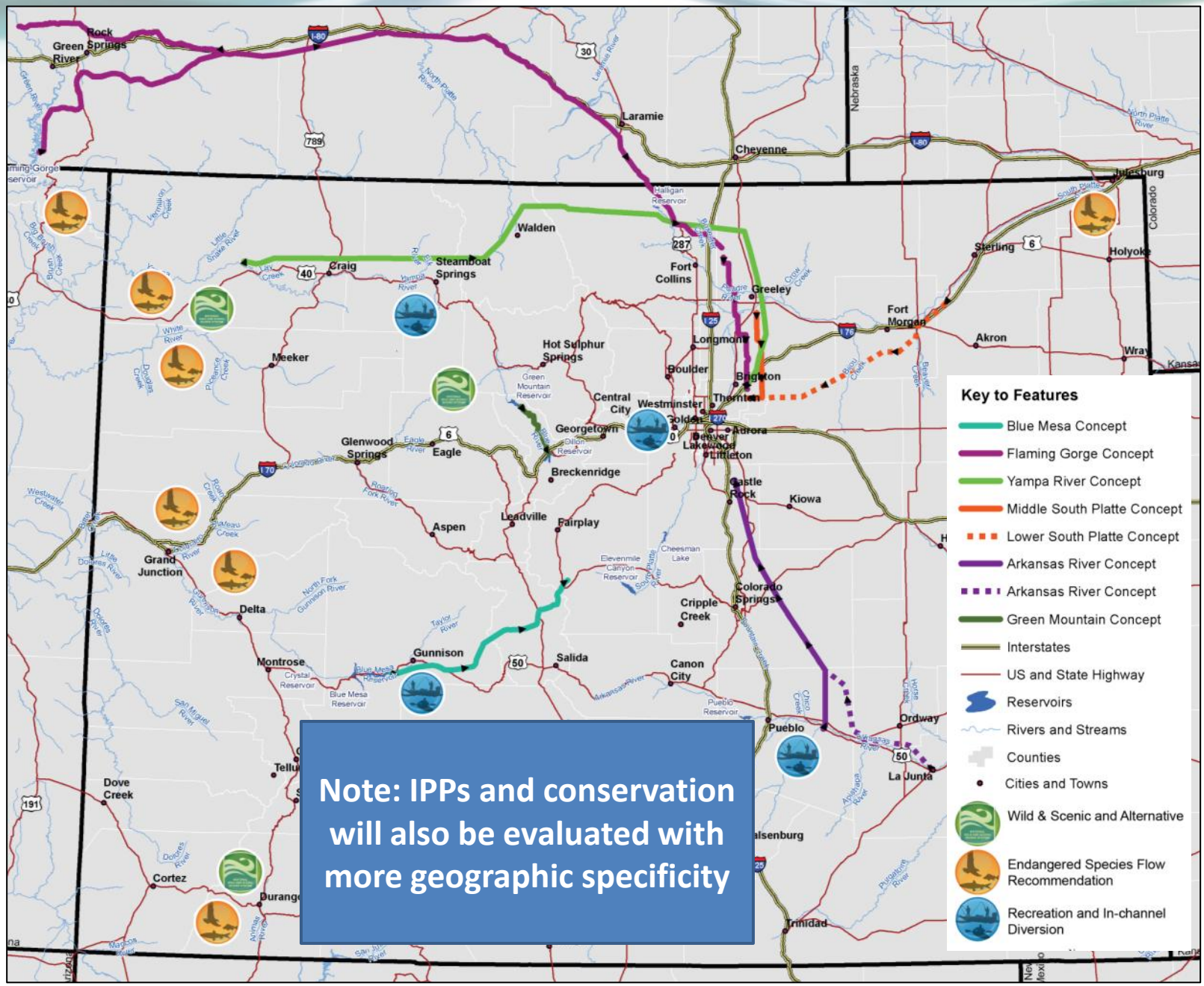
Potential Additional Metrics

- Agricultural economics
- Agricultural reliability
- Lifecycle costs
- M&I reliability
- Regional cooperation

Example Metric Evaluation Results from San Diego



Portfolios will be evaluated using more specific information



Future Meeting Plan and Wrap-up

IBCC Meeting Schedule