Canadian Asphalt Industry – Survey of Research Needs and Shortfalls

CUPGA 2010

November 28, 2010

Presentation:

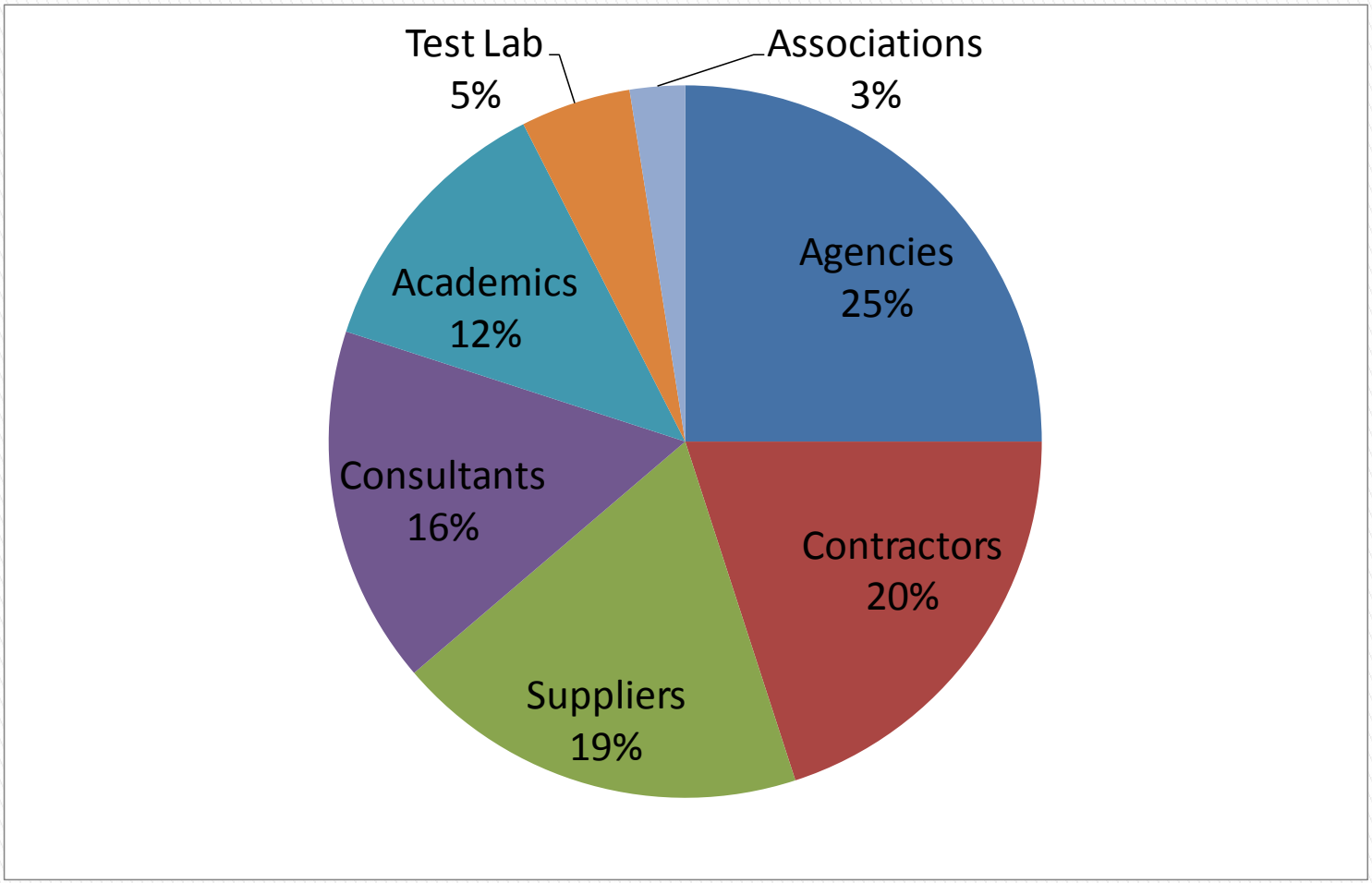
- Objective
- Survey Methodology
- Survey Results
- Summary Findings
- Recommendations

Objective:

- Obtain views from CUPGA members on needs and shortfalls in Canadian Asphalt Research
  - Agencies
  - Contractors,
  - Suppliers
  - Consultants,
  - Academics,
  - Others
- Communicate findings to members
- Encourage research in areas identified as greatest research needs

Survey Metholodogy:

- Simple 4-page survey sent to 80 CUPGA members on November 2, 2010
- Cross section of members from different sectors
  - Agencies 20
  - Contractors 16
  - Suppliers 15
  - Consultants 13
  - Academics 10
  - Test labs 4
  - Associations 2
- Summarized survey responses and tabulated results



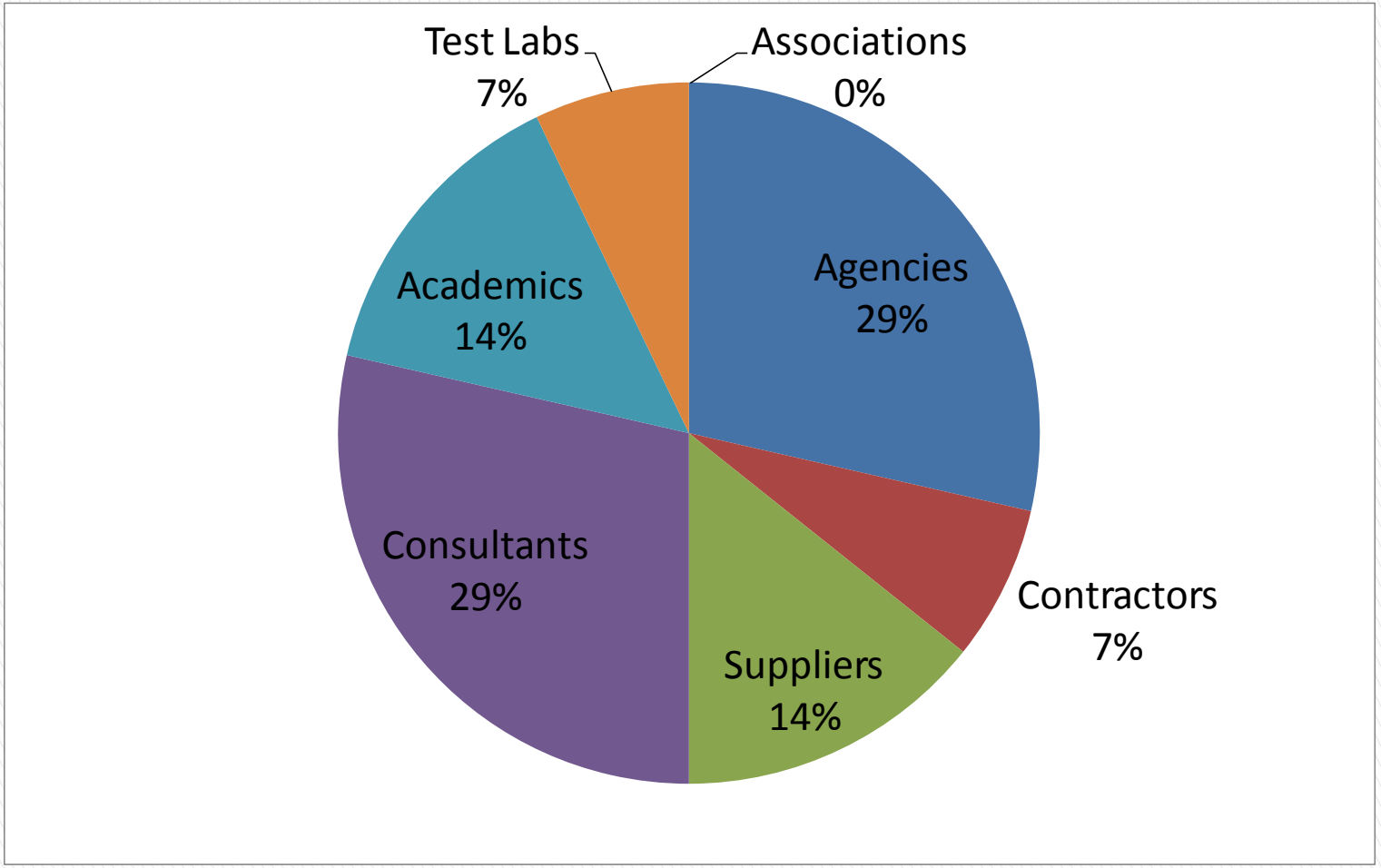
Surveys Sent to Members

Survey Results:

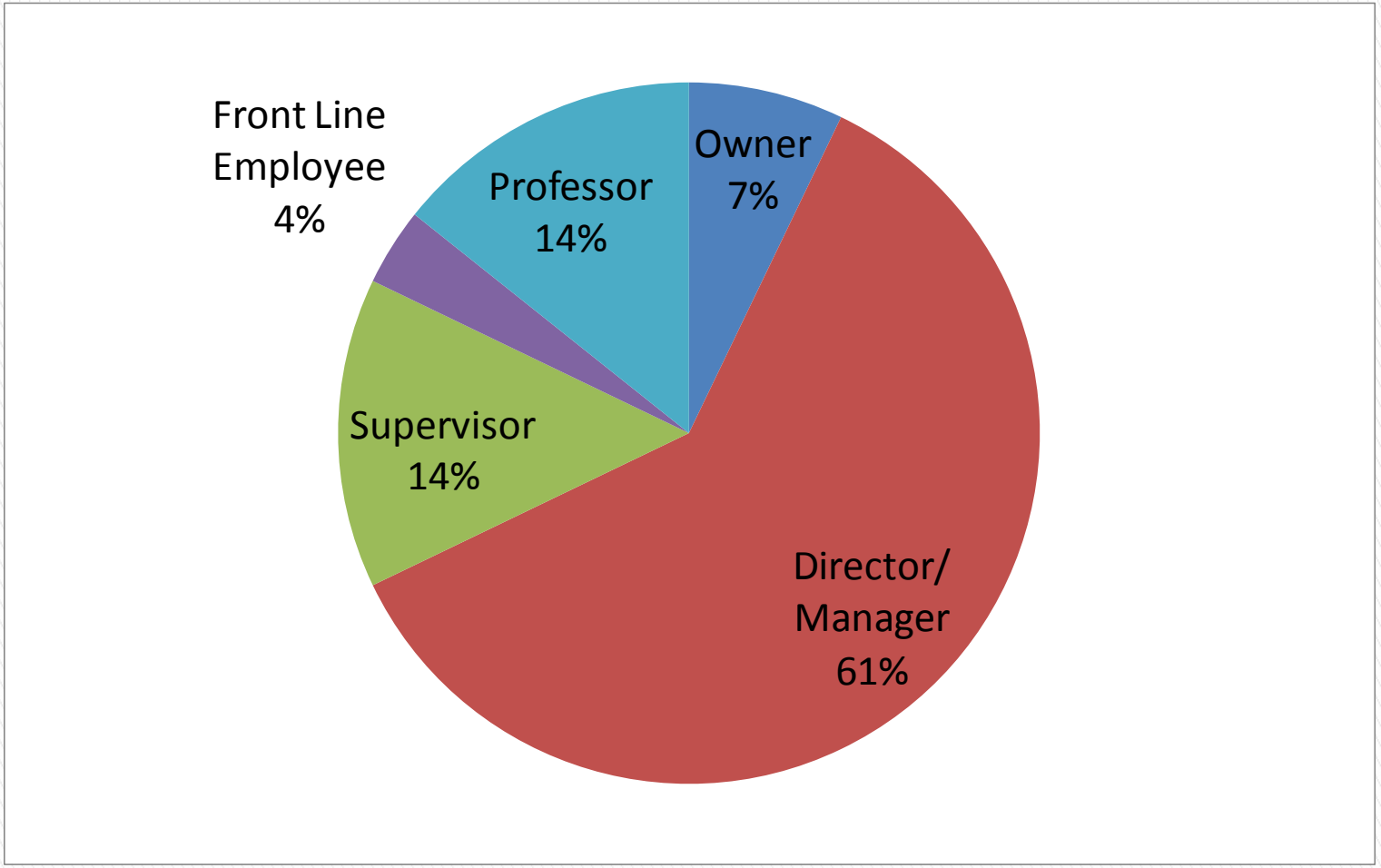
- 28 of 80 surveys were returned
  - Response rate: 35%
  - Thank you to members that provided responses
- Results tabulated and is presented

Question 1: General Information

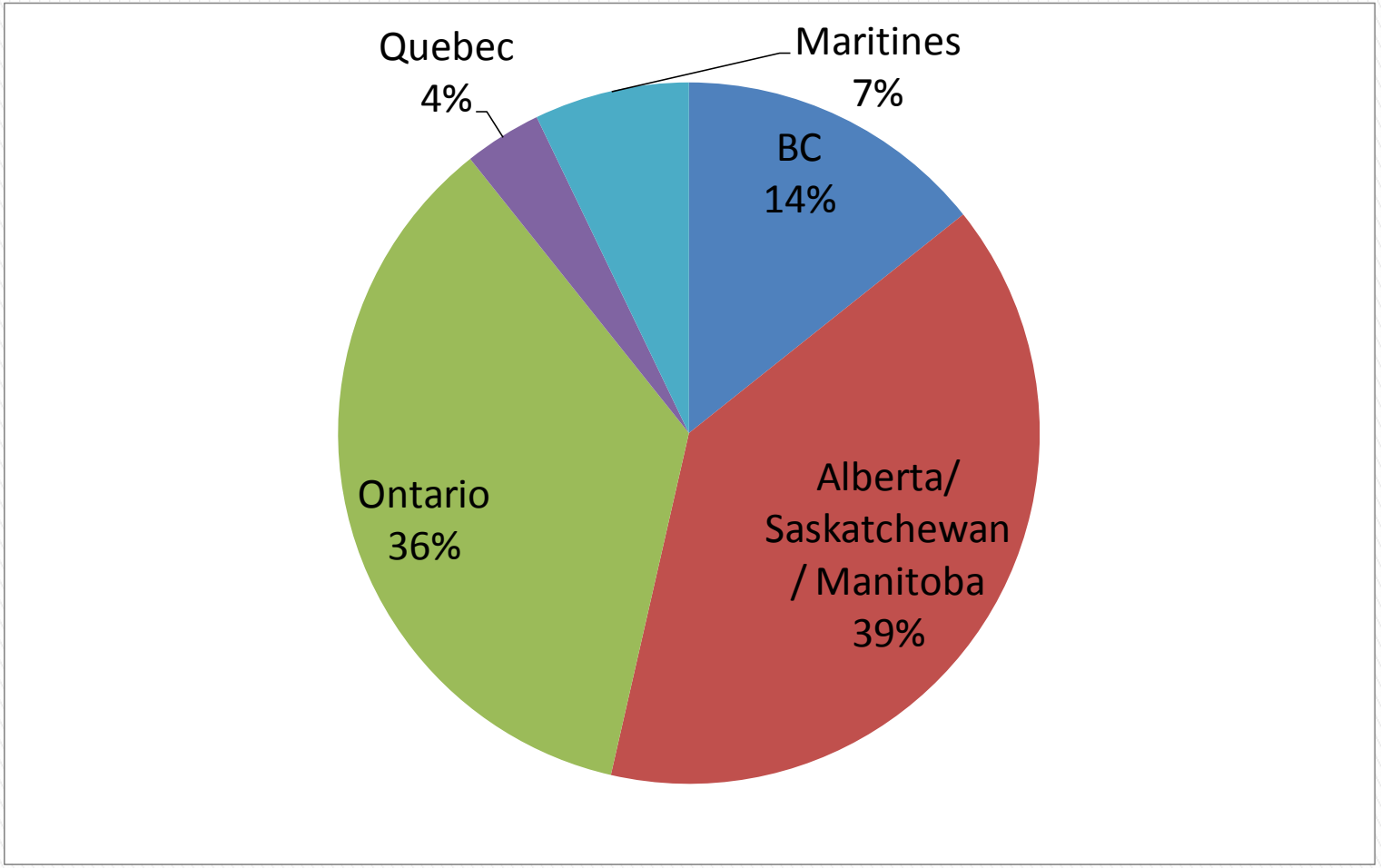
- Company Affiliation
- Position in Company
- Region in Canada



Members – Response to Survey



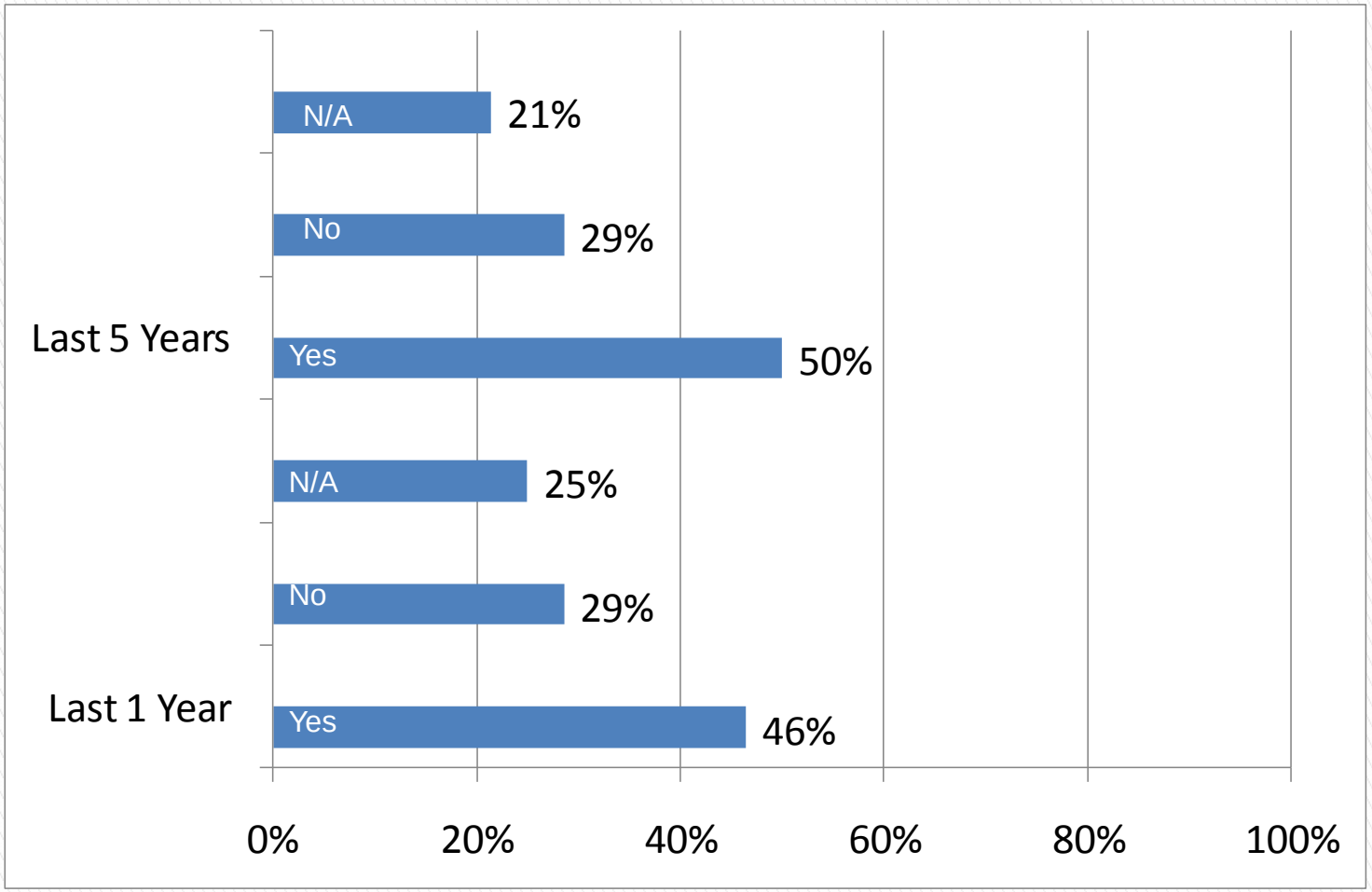
Members Position – Response to Survey



Members Region – Response to Survey

Question 2: Research Involvement

- What was your involvement or collaboration in University Research over the:
  - Last 1 year, and
  - Last 5 years?



Member Involvement or Collaboration in University Research- Survey Response

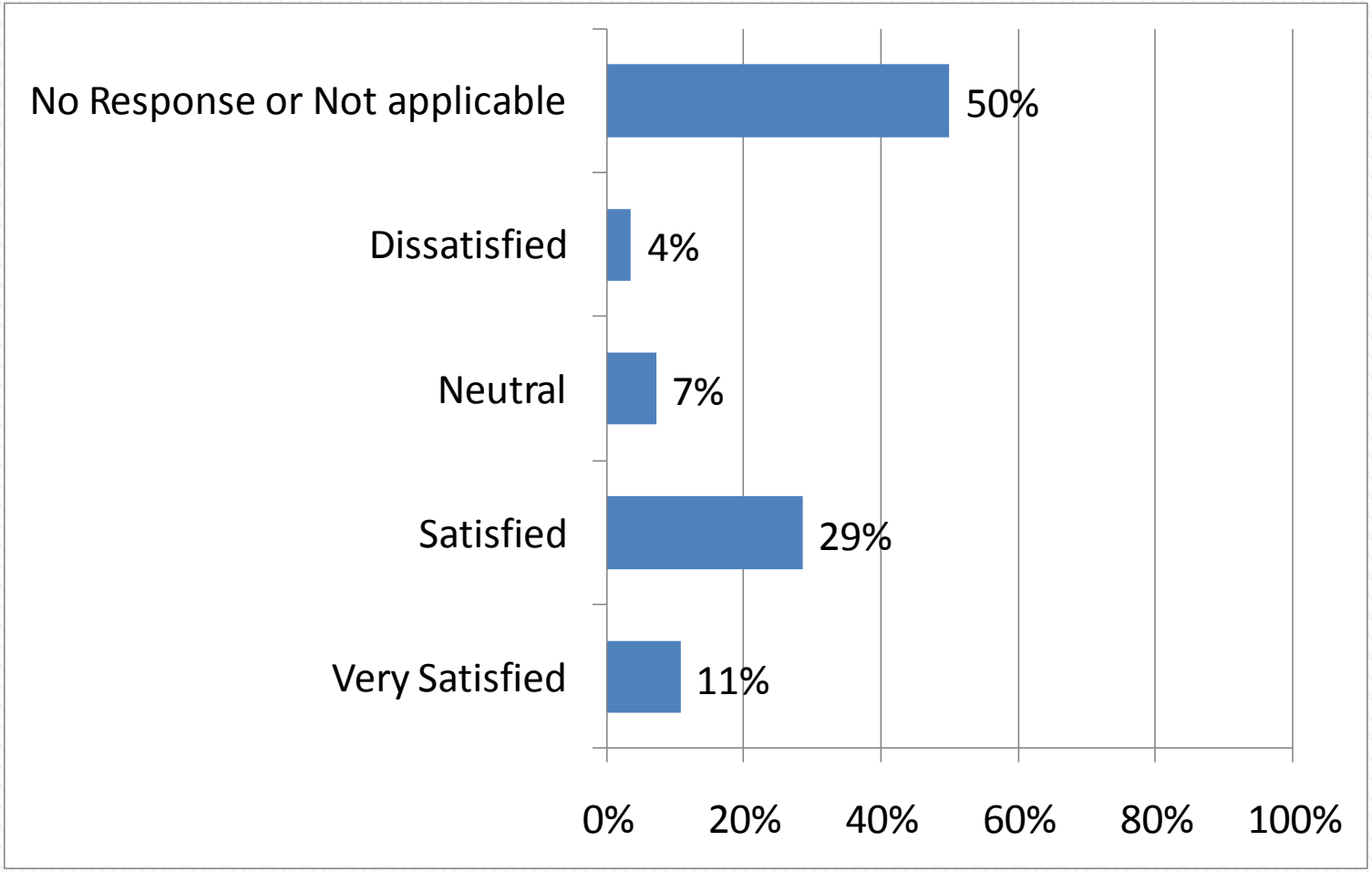
Question 2: Research Involvement (con't)

- What University research topics?

- <u>Respondents University Involvement:</u>
  - Warm mix asphalt
  - Fatigue resistance mixes, rubber in mixes
  - Chemical aging of asphalt
  - Implementation of AC mix performance tester for Superpave validation
  - Quiet/permeable pavement
  - Use of fly ash in Superpave hot mix
  - Low temperature performance
  - ERS versus method spec
  - Effectiveness of tack coat/performance of crack sealants
  - In place recycling/recycling/microsurfacing

Question 2: Research Involvement (con't)

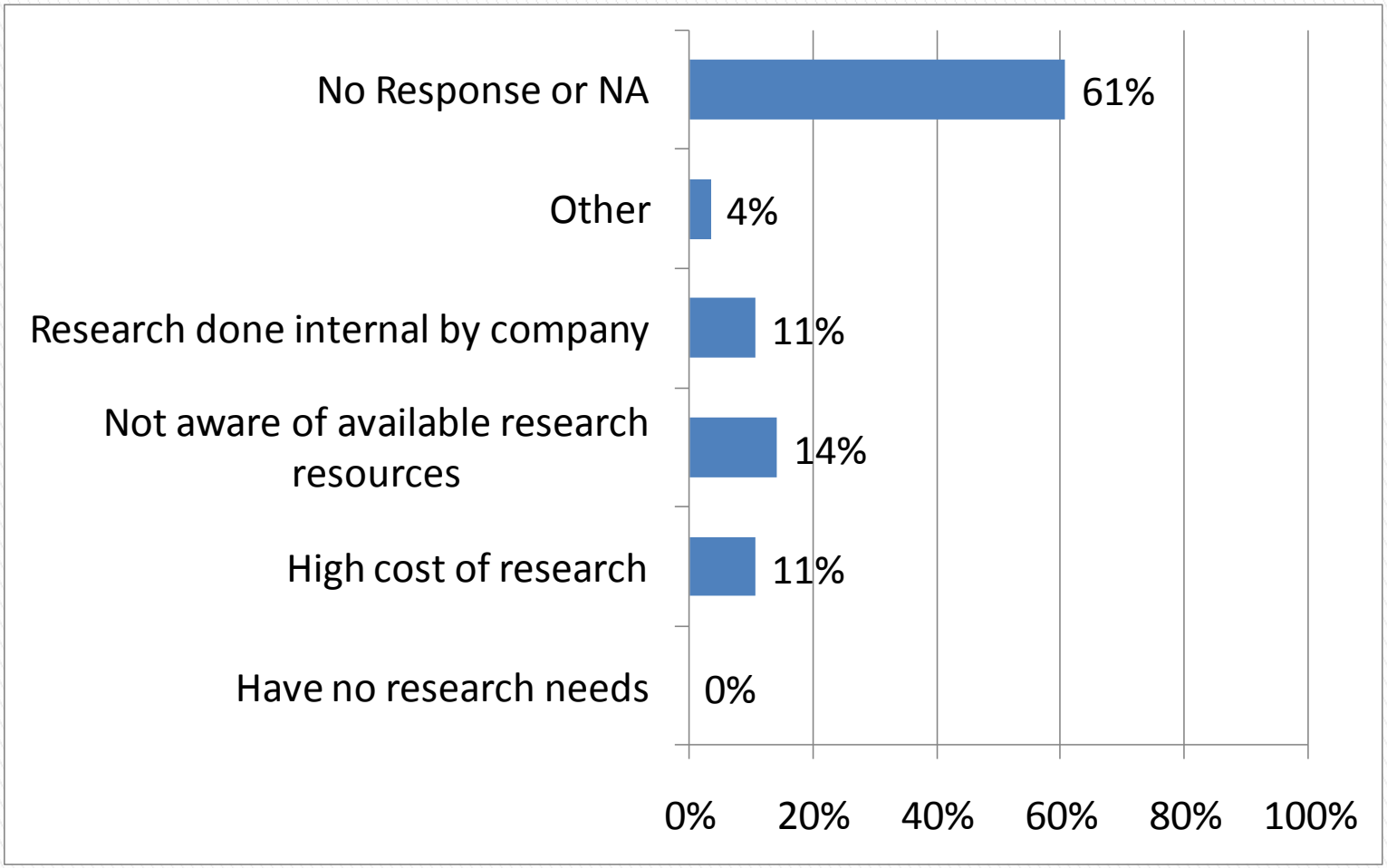
- Where was your experience with university research? Were you satisfied?



Member Experience with University Research – Survey Response

Question 2: Research Involvement (con't)

- If no involvement in university research, what keeps your company from becoming involved in research?



Members Reasons for no Involvement in University Research – Survey Response

Question 2: Research Involvement (con't)

- Additional Respondents Comments on University Research:
  - Not enough involvement from industry on fundamental research projects
  - Take advantage of other research such as TAC, FHWA, SHRP, AASHTO
  - University research topics tend to be restricted to non critical work as outcome is unpredictable. Specialized, time sensitive work given to consultants
  - Satisfaction with university research variable from project to project
  - My university is somewhat weak in asphalt pavement engineering
  - Green grad students or professors with little or no practical awareness

Question 2: Research Involvement (con't)

- What changes would be need before becoming involved in University Research?

- <u>Respondent Comments:</u>
  - Stronger proponents at University
  - Focused research with immediate benefits and defined results
  - More stringent deadlines and more frequent updates
  - More specialized/specific equipment for asphalt research
  - Better contact information at universities
  - University needs to be more proactive in developing partnerships with industry

Question 2a: Research Outcomes

- What research outcome constitutes success in your company?

Priority	Successful Research Outcome
1	Practical results that can be implemented immediately
2	Cost savings that can be realized immediately
3	Practical results that can be implemented years later
4	Cost savings that can be realized years later
5	Theoretical results that others can build on later

Members Priority of Research Outcome that Constitute Success – Survey Response

Question 2a: Research Outcomes (cont)

- What research outcome constitutes failure in your company?

- <u>Respondents Comments:</u>
  - Research with no practical or economic benefits
  - If products we are supplying fails, research is failure
  - Work that is not documented
  - Poor or inadequate experimental design or flaws in construction of field trials
  - Failure to complete projects in timely manner
  - Research that does not focus on agreed parameters
  - If well designed all research is valuable, even if doesn't provide answers looking for; learn something on why results turned out the way they did; shows products and techniques negatively or positively

Question 3: Industry Research Needs

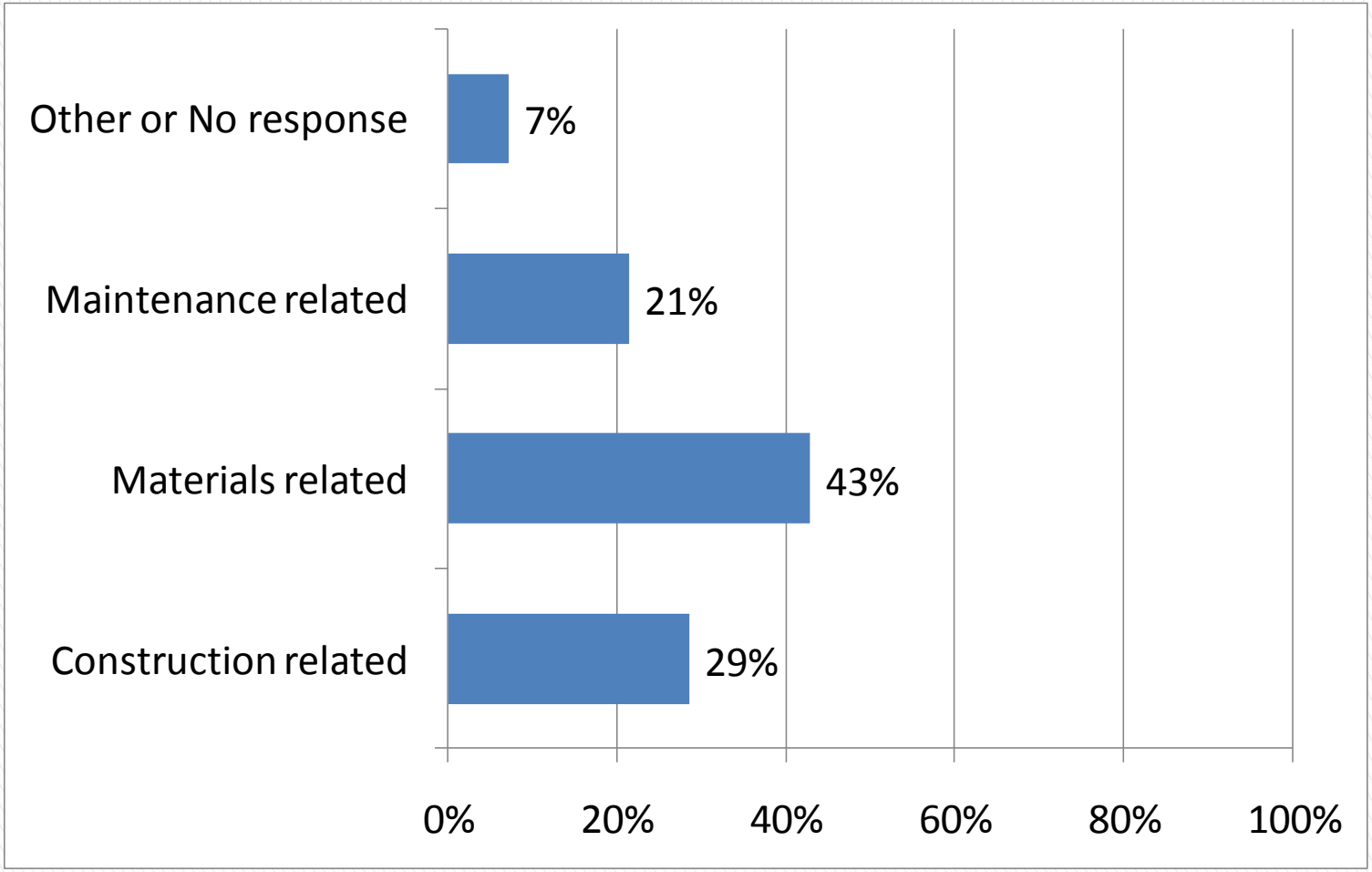
- What is the biggest issues (challenges) facing asphalt industry today?

Priority	Biggest Asphalt Industry Issues (Challenges)
1	Decreasing material availability (aggregate, asphalt)
2	Increasing cost (materials, construction)
3	Increasing environmental awareness
4	Shifting responsibility
5	Industry consolidation

Members Priority of Biggest Issue (Challenge) Facing Asphalt Industry Today – Survey Response

Question 3: Industry Research Needs (cont)

- Which area of the asphalt industry is in greater need of research?



Members Area of Asphalt Industry in Greater Need of Research – Survey Response

Question 3: Industry Research Needs (con't)

- What technical asphalt topic is in immediate need of research (Top 5)?

Priority	Technical Topic in Immediate Need of Research
1	Performance Related Specifications for Pavement Construction Performance Specification and Performance Tests for Materials
2	Increasing Technical Expertise including Graduates Familiar with Materials Increased Recycling
3	Cleaner Production
4	Overall Value of Pavement Warrant Project
5	Effect of Contractor Prequalification Requirements on Project Performance and Cost Value of Alternate Bidding on Asphalt Pavement Real Time QC Testing Equipment

Question 4: Additional Comments on Canadian Industry Needs and Shortfalls

Respondents Comments

- Canadian AC research needs funds to improve quality of pavements and encourage young engineers to participate in this role
- More information sharing for smaller contractors and municipalities
- Government driven research tends to be short term and budgets tend not to focus on research
- Need for more research but may be area specific
- Most research is there, contractors/agencies need to apply the knowledge to provide better results
- More collaboration between university research programs to maximize results
- Research needs to involve materials with construction techniques for longer life pavements
- Need advanced pavement technology through Canada to be leader not follower

Summary of Survey Findings:

- Successful Research
  - Practical results or cost reductions that can be implemented immediately
- Failed Research
  - Poorly designed, late, projects that stray from goals and/or have no practical results or concrete conclusions
- Biggest challenges facing asphalt industry today
  - Decreasing material availability and increasing costs
- Area of asphalt industry in greater need of research
  - Materials related
- Technical asphalt topic in immediate need of research
  - Performance related specification for pavement construction and for materials
  - Increasing recycling
  - Increasing technical expertise

Recommendations:

- Encourage implementable research in areas identified as greatest needs or shortfall
  - CTAA
  - CUPGA
  - Others
- Provide access to existing research or direct members to available research resources, or guidelines for implementing research findings
  - Based on needs identified in survey
- Communicate on-line links or shared sources of information to CUPGA members

- Asphalt research has come a long way in the past 10 years
  - but much more can be done by sharing and pooling our vast knowledge and resources to meet new challenges

The End