This report “TAUC 2015: Union Labor Supply - Construction & Maintenance Industry” is the first of what will become an annual study of issues facing the union construction and maintenance workforce supply. The workforce questionnaire and associated report are the products of a collaborative effort between The Association of Union Constructors (TAUC) and the Construction Labor Research Council (CLRC).

The Association of Union Constructors (TAUC)
The Association of Union Constructors (TAUC) is the premier national trade association for the union construction and maintenance industry. Membership is comprised of more than 2,000 contractors who utilize union labor for their projects, as well as local contractor associations and vendors in the industrial maintenance and construction industries. TAUC’s mission is to act as an advocate for union contractors and to enhance cooperation between the three entities involved in the successful completion of construction and maintenance projects: the union, the contractor and the owner/client, the company for which the work is being completed. **TAUC’s ultimate goal: to demonstrate that union construction and maintenance is the best option because it’s safer, more productive and provides a higher quality, cost-competitive product.**

Purpose
The purpose of this study is to assess the status of the union craft workforce supply in the construction and maintenance industry throughout the United States.

Study Features
This study features a number of unique and engaging characteristics, making it one of the most useful union craft labor supply reports available.

- Data are presented for each of 14 specific crafts individually, as well as aggregated, including both actual 2014 staffing levels and projections for 2015.
- The study will be annual, which will allow for the development of trend lines in future years and the ability to verify data from a previous year against responses from ensuing years.
- A rigorous, scientific methodology was followed.
- The sample is large, approaching 1,000 respondents, which provides for statistically reliable analyses.
- The wording of the questions in the questionnaire was carefully developed and pilot-tested to ensure that objective, unbiased responses were provided by the respondents.
- Useful data cuts for respondent role, geographic region and industry are utilized to offer insights into the results.

Methodology
This study sought to gather, analyze and communicate accurate facts, and to avoid creating unfounded “results” or urban legends, regarding the union craft labor supply. A 10-item questionnaire and cover letter were e-mailed to union construction and maintenance stakeholders on February 2, 2015. A follow-up reminder was sent on February 19, 2015. The deadline for returning the questionnaires was February 27, 2015.

Respondents were asked to provide data only on what they knew firsthand, i.e., based on their experiences within their own organization and not hearsay. In addition, questions were written in a precise manner so that participants would focus directly on what the researchers wanted, and to avoid any potential extraneous influences or biases in the minds of the respondents.

Exceptional care was given to the wording of the questions. Knowledgeable researchers understand the importance of clear, precisely written questions, and the spurious, unintended consequences of poorly developed questionnaires. To this end, the questions were developed carefully, using the researchers’ expertise and experience with questionnaire development and focus groups.
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- Useful data cuts for respondent role, geographic region and industry were utilized to offer insights into the results.

**Study Sample Demographics**
The table below outlines the characteristics of the sample for this study. A total of 939 responses were received, representing a cross section of roles, regions and industries.

<table>
<thead>
<tr>
<th>Respondent Role</th>
<th>Geographic Region</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor/Subcontractor</td>
<td>East North Central (48%)</td>
<td>Commercial (41%)</td>
</tr>
<tr>
<td>Union/Labor Representative</td>
<td>Middle Atlantic (19%)</td>
<td>Utility (18%)</td>
</tr>
<tr>
<td>Association Employee</td>
<td>West North Central (8%)</td>
<td>Manufacturing (17%)</td>
</tr>
<tr>
<td>Construction Manager</td>
<td>Southeast (6%)</td>
<td>Petroleum/Chemical (13%)</td>
</tr>
<tr>
<td>Owner/Client</td>
<td>Southwest (6%)</td>
<td>Civil (5%)</td>
</tr>
<tr>
<td>Other</td>
<td>South Central (5%)</td>
<td>Other (6%)</td>
</tr>
<tr>
<td></td>
<td>New England (3%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Northwest (3%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mountain Northern Plains (2%)</td>
<td></td>
</tr>
</tbody>
</table>

**Results for 2014 – Actual/Historical**
Just over half of the respondents (52%) reported a union labor shortage in 2014. Most said it was a small shortage (41%) while some experienced a large shortage (11%). Approximately a third said their union workforce was about the correct size (31%) and the remainder (17%) indicated a surplus.

Those more directly responsible for staffing levels contractors, construction managers and owners/clients generally reported more of a labor shortage than did union/labor representatives. Union/labor representatives and association employees were about three times more likely than others to report a labor surplus.
Although modest in terms of respondents, the Mountain Northern Plains and Southeast regions exhibited the greatest concern about labor shortages. The New England and Southwest regions actually reported a small surplus of union craft workers. There was a modest level of concern about craft shortages in the largest respondent geographic region, the East North Central. Regarding the industry data cut, a labor shortage was reported for all industries, with the utility industry having the largest shortage and commercial the smallest.

A strength of this study is the detail it provides regarding each of 14 union crafts in construction and maintenance work. The table below summarizes the average shortage or surplus in 2014 for each of the 14 union crafts. The percent values in parentheses are the average surplus/shortage ratings. For example, a -2.0% means that on average, the respondents had a 2.0% shortage for that craft.

<table>
<thead>
<tr>
<th>Shortage (More than -0.5%)</th>
<th>About Right (-0.5 up to 0.5%)</th>
<th>Surplus (0.5% or More)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boilermakers (-3.2%)</td>
<td>Plasterers/Cement Masons (-0.5%)</td>
<td>Sheet Metal Workers (1.7%)</td>
</tr>
<tr>
<td>Iron Workers (-1.1%)</td>
<td>Insulators (-0.3%)</td>
<td>Teamsters (1.7%)</td>
</tr>
<tr>
<td>Carpenters (-1.1%)</td>
<td>Roofers &amp; Waterproofers (-0.1%)</td>
<td></td>
</tr>
<tr>
<td>Operating Engineers (-0.9%)</td>
<td>Laborers (0.0%)</td>
<td></td>
</tr>
<tr>
<td>Bricklayers (-0.8%)</td>
<td>Plumbers/Pipefitters/Steamfitters (0.3%)</td>
<td>Painters &amp; Allied Trades (0.5%)</td>
</tr>
</tbody>
</table>

It is important to note that even though the averages may suggest a labor shortage, a labor surplus, or a workforce that is about the right size, individual experiences will vary from this average. Later in the report, greater detail about the staffing levels is provided for each craft listed above.

**Projections for 2015**

**Forecasted Growth/Contraction (union and non-union)**

Perhaps the most intriguing aspect of the study is what respondents expect for the future. The overwhelming perspective is positive, for growth. In fact, 72% believe that there will be growth in construction and maintenance activity in 2015. Many respondents foresee growth (defined as 3-10+%) lasting at least two to three years. Most of those who predict contraction see it lasting a short time (less than one year).

Union representatives had the most optimistic stance on growth, with a 5.3% average growth rating. Owners provided the least optimistic ratings at 0.04%, with construction managers not much higher at 0.4%. Contractors, association personnel and other uncategorized respondents clustered together in the 2.0% range.

The greatest growth was projected for the Southeast region (5.6%), followed closely by the Mountain Northern Plains (5.2%). (Definitions of the regions are on page 6.) Although growth was projected for all regions, on average, the Northwest (2.1 percent) region garnered the lowest expectations for growth. The largest region based on the number of respondents, East North Central, also had relatively modest growth ratings at 2.6%.

The highest rated industries for growth were civil (4.9%) and commercial (4.5%). The lowest were utility (1.8%), manufacturing (2.2%) and petro/chemical (2.4%).
**Forecasted Surplus/Shortage (Union Craft Supply)**

The table below summarizes the projected average surplus or shortage in 2015 for each of the 14 union crafts.

<table>
<thead>
<tr>
<th>Shortage (More than -0.5%)</th>
<th>About Right (-0.5 up to 0.5%)</th>
<th>Surplus (0.5% or More)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boilermakers (-2.2%)</td>
<td>Roofers &amp; Waterproofers (-0.4%)</td>
<td>Sheet Metal Workers (0.9%)</td>
</tr>
<tr>
<td>Carpenters (-2.0%)</td>
<td>Painters &amp; Allied Crafts (-0.1%)</td>
<td>Teamsters (1.1%)</td>
</tr>
<tr>
<td>Iron Workers (-1.6%)</td>
<td>Insulators (0.1%)</td>
<td></td>
</tr>
<tr>
<td>Operating Engineers (-1.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plasterers/Cement Masons (-1.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plumbers/Pipefitters/Steamfitters (-0.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bricklayers (-0.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laborers (-0.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricians (-0.6%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** The unit of analysis in this study was the individual, not the organization. For some organizations, there could be (and probably was) more than one respondent in the sample. This should be remembered when interpreting the data.
A total of 939 questionnaires were returned. Although the identity of participants was anonymous, the questionnaire still collected demographic information from respondents, which provided useful insights into the data during the analysis phase of the project.

Exhibit 1

Respondent’s Role in their Organization

As shown in Exhibit 1, the largest number of respondents were contractors/subcontractors (44%) and union/labor representatives (33%). Another 11% were from associations and the remainder of the respondents were construction managers (5%), owners/clients (3%) and others (4%).

Exhibit 2

Geographic Region Where the Respondent’s Organization Performs the Most Union Construction and Maintenance Work

Exhibit 2 illustrates the geographic makeup of the sample. By far, the largest number of respondents came from the more highly unionized East North Central region (48%). This was followed by the Middle Atlantic region with 19%. The remainder of the regions each had 3-6% of the sample.


Exhibit 3

Geographic Region Where the Respondent’s Organization Performs the Most Union Construction and Maintenance Work

A plurality of the union construction and maintenance work was performed in the commercial/institutional sector (41%), as portrayed in Exhibit 3. A significant amount of work was also performed in the utility (18%), manufacturing (17%) and petroleum/chemical (13%) sectors.
As is the case for many aspects of this report, it is useful to look at how the various demographic categories (i.e., respondent role, geographic region and industry) project construction and maintenance growth (union and nonunion) for 2015. The bullets below highlight some of these findings.

- Union representatives had the most optimistic stance on growth, with a 5.3% average growth rating. Owners provided the least optimistic ratings at 0.04%, with construction managers not much higher at 0.4%. Contractors and association personnel clustered together in the 2.0% range.

- It should be noted that the difference between union/labor and owner/client in growth ratings was driven in large part by a fewer number of strong ratings. That is, a large plurality of representatives from the two groups were quite similar in their views about growth. However, for the few respondents with stronger ratings (e.g., “Very Strong Contraction” or “Very Strong Growth”), there was a large difference. These outliers significantly impacted the overall average scores listed above.

- The Southeast region garnered the highest ratings for growth in 2015 at 5.6%. The Mountain Northern Plains and New England regions also received strong ratings at about 5.0%. Two regions had growth expectations less than 3.0%, the East North Central and Northwest regions.

- The highest rated industries were civil (4.9%) and commercial (4.5%). The lowest were utility (1.8%), manufacturing (2.2%) and petro/chemical (2.4%).
As a follow-up to the previous question regarding opportunities for 2015, the survey looked at the length of time individuals believe the growth or contraction would last (union and nonunion). Exhibit 5 shows details about this sustainability. In general, many respondents foresee growth (defined as 3-6%) lasting at least two to three years. Most of those that predict contraction see it lasting a short time.

Exhibit 5  
Sustainability of Growth/Contraction in Construction and Maintenance Work in 2015

- Oval A shows that a large percent of the respondents believe growth will last at least two to three years, and even more than five years according to some.
- Oval B indicates that a significant number of participants envision strong (7-10%) or very strong (greater than 10%) growth that will last four years or more.
- Oval C points out that most of those who predict contraction, say it will be for a short period of time (less than one year).
- While there were some pronounced differences among the five roles addressed in this study based on growth for 2015, there was general consistency in the timeframe. Whether reporting growth or contraction for 2015, the length of time it was thought to last—around three years—was about the same across all respondent roles.

- Similarly, there was little variance from region to region regarding the sustainability of growth or contraction in 2015. A two to three year schedule for growth/contraction was reported for each region.
- Regarding the industry data cut, the utility industry exhibited the longest projected timeframe at over three and a half years, yet it also had one of the lowest rated levels of growth. In other words, slight and sustained growth characterizes the utility industry for the foreseeable future. Like the utility industry, the petro/chemical industry received low ratings for growth, yet different from the utility data cut, the term for this limited growth was rated as short, at about a year and a half.
Did your organization experience a union labor shortage in 2014?

Beginning with Exhibit 6, the focus sharpens to the union sector, with an assessment of the recent past (2014). Exhibit 6 displays the overall status of the union construction and maintenance workforce in 2014. There was a small shortage for 41% of the sample and a large shortage for 11%. The union labor supply was the right size in 31% of the cases and there was a surplus for 17%. Thus, there was some type of shortage in just over half of the cases (52%).

Exhibit 6
Union Labor Supply in 2014

- The belief that there was a large shortage of union workers in 2014 was modest in the sample.
- However, the belief that there was a small shortage was the most prevalent rating for all five respondent roles.
- Those more directly responsible for staffing levels—contractors, construction managers and owners/clients—generally reported more of a labor shortage than did union/labor representatives.
- Union/labor representatives and association employees were about three times more likely than others to say there was a labor surplus.
- Although modest, the Mountain Northern Plains and Southeast regions exhibited the greatest concern about labor shortages. The New England and Southwest regions actually reported a small surplus of union craft workers. The region having the most respondents, East North Central, had a shortage that fell between the two extremes mentioned.
- Regarding the industry data cut, a labor shortage was reported for all industries, with the utility industry having the largest shortage and commercial the smallest.

It should be noted that these results do not necessarily mean that 11% of the organizations had a large shortage or that 41% had a small shortage of union craft workers in 2014, for example. Rather, the results mean that 11% of the respondents said their organization had a large shortage. For some organizations, there could be (and probably was) more than one respondent in the sample.
Each aspect of the questionnaire that the respondents returned and each section of this report provide a unique perspective on the important topic of union craft construction and maintenance work. There were two questions in particular that got to the heart of the study. One question asked respondents to indicate how much of a shortage or surplus their organization experienced in 2014, from “-10% or Greater” to “+10% or Greater.” Those results are presented in Section 7: Exhibits 7-21. The other question followed the same wording, but focused on projections for 2015. Those results follow in Section 8: Exhibits 22-36.

In order to collect the most accurate data possible, respondents were instructed to focus specifically on the industry and region in which their organization performed the most union construction and maintenance work. For both questions addressed in Sections 7 and 8, respondents were asked to answer the question for each of the 14 crafts.

Exhibit 7 shows a high level overview of labor shortages and surpluses for 2014 as reported by the participants in the study. The data reflect the average percent rating from the respondents. To illustrate, there was a projected 1.7% surplus of sheet metal workers in 2014 and a projected -1.1% shortage of iron workers. While most of these values are contained in a fairly narrow range, it is important to note that these are averages. Producing these averages are many ratings that are higher/lower, and some even much higher/lower, than the averages shown here.

- Sheet metal workers and teamsters had the most positive staffing levels in 2014 and this continued for forecasts about 2015 (Exhibit 22).
- At the other end of the scale, there was a significant shortage of boilermakers and like sheet metal workers, their pattern was repeated in 2015.
- Only five of the 14 crafts had positive staffing levels (although five of those could be considered fairly minor staffing gaps) and one was “just right.”
- Any rating that is +/-0.5% of 0.0% should be considered to be close to “good,” meaning that outside of exceptional situations, there is close to the correct number of workers for that craft, on average in the United States.
Of the 14 crafts covered in this study, union boilermakers had the greatest shortage of workers. In fact, as shown in Exhibit 8, 20% of the respondents said there was a 10% or greater shortage of boilermakers in 2014 in their organization. In other words, boilermakers were hard to come by in many organizations.

The only role that said there was a surplus of boilermakers, on average, was union/labor representatives; all other roles said there was a shortage.

The greatest shortage was in the South Central region. Only for the Southwest region did respondents say there were enough boilermakers in 2014. The region containing the most respondents, East North Central, had a fairly strong reported shortage of workers.

The commercial sector did not have a shortage of boilermakers, according to respondents to this question. All other industries had a shortage, with the utility industry showing the greatest shortage.

A typical number of respondents provided data about boilermakers, suggesting that there was a comfortable level of knowledge about and/or interest in this craft.
The overall pattern of staffing surplus/shortage for bricklayers mirrored the average of all crafts combined (blue bars compared to red line).

Slightly over half of the respondents (54%) said there were enough or a surplus of bricklayers.

Results show that union/labor representatives reported a surplus of bricklayers while most other respondents, contractors in particular, reported a shortage.

The greatest need for bricklayers was in the Mountain Northern Plains, East North Central and South-west regions. The New England and Mid-Atlantic regions had the strongest staffing levels.

The petro/chemical industry had the largest shortage of bricklayers, while there was a surplus in the utility industry.

A smaller number of respondents provided data about bricklayers, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
Respondents reported a greater shortage of carpenters than the average for all crafts combined.

Less than half of the respondents (45%) said there were enough or too many carpenters.

Results show that union/labor representatives reported a surplus of carpenters while most other respondents, especially contractors and owners, reported a shortage.

The greatest need for carpenters was in the Mountain Northern Plains and Southeast regions. The New England and Southwest regions had the strongest staffing levels. The region containing the most respondents, East North Central, had a limited shortage of carpenters as indicated by the survey participants.

The manufacturing and utility industries had the largest shortage of carpenters while there was a small surplus in the civil industry.

More respondents provided data about carpenters than most other crafts, suggesting the possibility of fairly strong confidence in their results.
Electricians were the only craft where the average surplus/shortage rating was 0.0 (Exhibit 7), meaning that those who said there was a shortage were exactly counterbalanced by those who said there was a surplus. Although the average was 0.0, it should be noted that there certainly were situations where there were not enough electricians (the left side of Exhibit 11) and there were work situations where there were too many (the right side of Exhibit 11).

As was the case for nearly every craft, union/labor representatives reported a surplus of electricians. Association employees also reported an excess of electricians. Contractors and owners reported a shortage.

The Mountain Northern Plains, Southeast and South Central regions had the greatest need for electricians. The strongest staffing levels were found in New England and the Northwest. There was a small surplus of electricians in the region with the most respondents, East North Central.

Manufacturing and utility work had the largest shortage of electricians, while there was a surplus in the civil sector, and to a slight degree the commercial sector.

More respondents provided data about electricians than most other crafts, suggesting the possibility of fairly strong confidence in the results.
On average, there was a modest staffing shortage for insulators. Of course, in some specific situations there was likely a surplus while in others a more challenging shortage.

Over half of the respondents (56%) said there were enough or a surplus of insulators.

Union/labor representatives respondents reported a surplus of insulators while contractors and association employees indicated that there was a shortage.

The greatest need for insulators was in the Mountain Northern Plains and Southwest regions. The New England region had the strongest staffing levels. There was just about the needed number of insulators in the region with the most respondents, East North Central.

No industry had significant surplus.

A smaller number of respondents provided data about insulators, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
Respondents reported a greater shortage of iron workers than the average for all crafts combined.

As shown in Exhibit 13, about 9% said they had a 10% or greater shortage of iron workers.

Results show that the union/labor representatives role reported a surplus of iron workers while all other respondents reported a shortage.

The greatest need for iron workers was in the Mountain Northern Plains and Southeast regions. The New England and Southwest regions had the strongest staffing levels. The region containing the most respondents, East North Central, had a shortage of iron workers as indicated by the survey participants.

There was a reported shortage of iron workers in all industries except civil, for which there was reported a modest surplus. The greatest shortages were in the manufacturing and utility industries.

A larger than average number of respondents provided data for iron worker staffing levels, suggesting a fairly strong degree of knowledge about and/or interest in this craft.
Laborers had an average staffing level close to the all-craft average. Since the all-craft average (red line) represented a modest shortage, laborers therefore had a modest shortage in labor supply.

44% of the sample said laborers had about the right number or some degree of shortage of workers.

Only contractors suggested that they experienced a shortage of laborers in 2014. All other respondent roles reported a surplus, on average.

As was typical for all other crafts, there was a shortage of laborers in the Mountain Northern Plains region. The New England and Southwest regions had the strongest staffing levels. There was a very small surplus of laborers in the region having the most respondents, East North Central.

There was a noted shortage of laborers in the commercial industry and an excess in the petro/chemical and utility industries.

An above average number of respondents provided data about laborers, suggesting that there was a fairly high level of knowledge about and/or interest in this craft.
Respondents reported a greater shortage of operating engineers than the average for all crafts combined.

Less than half of the respondents (45%) said there were enough operating engineers.

Operating engineers are the only craft out of 14 for which union respondents did not report there was a surplus; union workers reported a modest shortage. Contractors and association employees also said there was a shortage of operating engineers.

The geographic regions with the greatest need for operating engineers were the Mountain Northern Plains and Southeast regions. As was typically the case for the 14 crafts, the New England region had the highest staffing level. The region containing the most respondents, East North Central, had a limited shortage of operating engineers.

The civil, petro/chemical and commercial industries had the largest shortage of operating engineers.

An above average number of respondents provided data about operating engineers, suggesting that there was a fairly high level of knowledge about and/or interest in this craft.
Painters & Allied Trades workers enjoyed one of the most positive staffing patterns. A smaller than average percent of respondents reported large shortages of painters & allied trades workers and close to half (44%) said their staffing level was about right at 0% to 2%.

- Over half of the respondents (64%) said there were enough or a surplus of painters.
- Contractors represent the only role that indicated there was a shortage of painters.
- The greatest need for painters was in the Mountain, Northern Plains, and Southeast regions. The New England, West North Central, and Southwest regions had the strongest staffing levels. There was just about the needed number of painters & allied trades workers in the East North Central region.

When looking at the data from an industry perspective, there was not a significant staffing shortage for painters in any industry.

A smaller number of respondents provided data about painters & allied trades workers, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
Respondents reported a slightly greater shortage of plasterers/cement masons than the average for all crafts combined.

Results show that union/labor representatives and construction managers reported a surplus of plasterers/cement masons while contractors reported a shortage.

The greatest need for plasterers/cement masons was in the East North Central region. The New England and West North Central regions had the strongest staffing levels.

The utility industry had the highest staffing levels for plasterers/cement masons, while there was a shortage in the civil and commercial industries.

A smaller number of respondents provided data about plasterers/cement masons, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
On average, there was a small staffing shortage for roofers & waterproofers. Of course, in some specific situations there was likely either a surplus or a more challenging shortage.

Union/labor representatives and construction manager respondents reported a surplus of roofers & waterproofers while contractors, owners and association employees indicated that there was a shortage.

The greatest need for roofers & waterproofers was in the West North Central region. The New England region had the strongest staffing levels. The region containing the most respondents, East North Central, had a limited shortage of roofers & waterproofers.

The commercial industry category exhibited a shortage of roofers & waterproofers and the civil, manufacturing and utility industries had a surplus.

A smaller number of respondents provided data about roofers & waterproofers, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
Sheet metal workers enjoyed the most positive staffing pattern, on average. For example, their workforce levels were mostly below the all craft average on the shortage (left) side of Exhibit 19 (i.e., the blue bar is below the red line) and above the all craft average on the surplus (right) side.

Over half of the respondents (60%) said there were enough or a surplus of sheet metal workers.

Construction managers represent the only respondent role that indicated there was a shortage of sheet metal workers. Contractors, union/labor representatives and association employees all reported a surplus, on average.

The greatest need for sheet metal workers was in the Mountain Northern Plains and Southeast regions. The New England, Mid Atlantic, West North Central and Southwest regions had the strongest staffing levels. There was a small surplus of sheet metal workers in the region having the most respondents, East North Central.

When looking at the data from an industry perspective, there was not a significant staffing shortage for sheet metal workers in any industry.

A typical number of respondents provided data about sheet metal workers, suggesting that there was a comfortable level of knowledge about and/or interest in this craft.
Teamsters had a positive staffing pattern compared to all 14 crafts combined. Their average staffing level was higher than the all craft average. Well over half of the respondents (72%) said there were enough or a surplus of teamsters. Only association employees reported that there was a shortage of teamsters. All others contractors, construction managers, union/labor representatives and association employees reported a surplus, on average. The greatest need for teamsters was in the Mountain Northern Plains region. All other regions, including the East North Central region, did not suggest a need for more teamsters. Data from all industries indicated an adequate level of teamsters. A smaller number of respondents provided data about teamsters, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
The supply of plumbers/pipefitters/steamfitters, on average, was fairly close to the all-craft average, meaning that there was a modest shortage. However, in specific situations it is probable that there was a shortage and at other times there was a surplus of plumbers/pipefitters/steamfitters.

The findings show that union/labor representatives and association employees reported a surplus of plumbers/pipefitters/steamfitters while contractors, construction managers and owners reported a shortage.

The greatest need for plumbers/pipefitters/steamfitters was in the Mountain Northern Plains and West North Central regions. The New England, Northwest and Southwest regions had the strongest staffing levels. The region containing the most respondents, East North Central, had a modest shortage of plumbers/pipefitters/steamfitters as indicated by the survey participants.

The petro/chemical and utility industries had a shortage of plumbers/pipefitters/steamfitters and the civil and commercial industries had a surplus.

By far, the greatest number of respondents provided data about plumbers/pipefitters/steamfitters staffing in 2014. This suggests that there was a high level of knowledge about and/or interest in this craft.
This section provides useful, very detailed information about the projected future—2015. In the previous section, results showed how respondents evaluated actual recent (2014) staffing levels for each union craft. This section builds upon that and shows expectations for each craft about the near future (2015). Users of this study should find this section especially useful in their business planning processes.

As was the case for 2014, sheet metal workers and teamsters clearly have the most positive staffing levels for 2015 according to the study participants.

At the other end of the scale, there was a significant shortage of boilermakers projected for 2015, just like the reported shortage in 2014. The forecasted shortage for carpenters was also high, and higher than their actual shortage in 2014.

Only three of the 14 crafts have positive staffing expectation for 2015. The 11 remaining crafts have varying degrees of concern about staffing in 2015.

Any rating that is +/-0.5% of 0.0% should be considered to be close to “good,” meaning that outside of exceptional situations, there is close to the correct number of workers for that craft, on average in the United States.
Not only did the boilermakers have the greatest shortage of workers in 2014 compared to the other 13 crafts, they also have the largest projected shortage for 2015. In fact, as shown in Exhibit 23, 14% of the respondents said there would be a 10% or greater shortage of boilermakers in 2015 in their organization. Boilermakers were hard to come by in 2014, and this is likely to continue for 2015.

As was the case for 2014, the only respondent role that said there would be a surplus of boilermakers in 2015, on average, was union/labor representative; all other roles said there would be a shortage.

The greatest projected shortages were for the South Central, Mountain Northern Plains and Northwest regions. Only for the Southwest region did respondents say there would be enough boilermakers in 2015. The region containing the most respondents, East North Central, had a fairly strong projected shortage of Boilermakers.

The civil sector will not have a shortage of boilermakers, according to respondents to this question. All other industries were thought to have a shortage, with the utility industry showing the greatest shortage, just as in 2014.

A typical number of respondents provided data about boilermakers, suggesting that there was a comfortable level of knowledge about and/or interest in this craft.
Exhibit 24

Projected Union Labor Status in 2015: Bricklayers

- On average, respondents predicted a modest staffing shortage for bricklayers in 2015, similar to their actual labor supply situation in 2014. Of course, in some specific situations there will likely be either a surplus or a more challenging shortage.

- Union/labor representatives and construction manager respondents anticipate a surplus of bricklayers while contractors indicated that there will be a shortage.

- The greatest need for bricklayers will be in the populous East North Central region, as well as in the West North Central and Southwest regions. The New England and Middle Atlantic regions should have the strongest staffing levels in the coming year.

- According to the results, the commercial industry will exhibit the greatest shortage of bricklayers and the utility industry will experience the largest surplus.

- A smaller number of respondents provided data about bricklayers, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
Respondents reported a fairly strong predicted shortage of carpenters for 2015. In fact, the anticipated shortage in 2015 is expected to be larger than the actual shortage reported in 2014.

Results show that union/labor representatives predict a surplus of carpenters while the other respondents envision a shortage.

The greatest need for carpenters will be in the Mountain North Plains and Southeast regions. Only in New England did respondents project a surplus. The East North Central region, the one having the most respondents, also is expected to endure a shortage of carpenters as indicated by the survey participants.

While all industries are projected to have a shortage of carpenters, this will be the most pronounced in the commercial and manufacturing industries.

An above average number of respondents provided data about carpenters, suggesting that there was a fairly high level of knowledge about and/or interest in this craft.
For 2014, respondents thought that staffing levels for electricians were just right, on average. Looking ahead to 2015, those same respondents see a soft shortage overall for electricians; 7% project at least a 10% shortage.

Interestingly, it was construction managers and association employees, not union/labor representatives as often was the case for most crafts and was the case in 2014 for electricians, who were the ones forecasting a surplus, while contractors and owners predicted a shortage for 2015.

The greatest projected shortages are for the South Central and Mountain Northern Plains regions. The greatest projected surpluses were for the New England and Northwest regions. The region containing the most respondents, East North Central, had a projected limited shortage of workers.

The civil and petro/chemical industries will not have a shortage of electricians, according to respondents to this question. All other industries were thought to have an upcoming shortage in 2015, with the commercial industry showing the greatest shortage.

An above average number of respondents provided data about electricians, suggesting that there was a fairly high level of knowledge about and/or interest in this craft.
On average, respondents stated that both 2014 actual and projected 2015 staffing levels for insulators were close to what was needed. Of course, in some specific situations there will likely be either a surplus or a shortage.

Union/labor representatives and construction manager respondents anticipate a surplus of insulators while owners/clients and association workers indicated that there will be a shortage.

The Mountain Northern Plains and Southeast regions were rated as most likely to experience a shortage in 2015. The strongest labor levels for insulators will be in New England and the East North Central region, the most populous region regarding the number of respondents for this study.

According to the results, the commercial industry will exhibit the greatest shortage of insulators and the civil and petro/chemical industries will experience a surplus.

A smaller number of respondents provided data about insulators, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
Respondents reported a fairly strong projected shortage of iron workers for 2015. The anticipated shortage in 2015 is expected to be larger than the actual shortage reported in 2014, which was somewhat large itself.

Results show that no respondent role predicted a significant surplus of iron workers. Moreover, this is one of only two crafts for which union/labor representatives did not anticipate a surplus in 2015 (the other was operating engineers).

The greatest need for iron workers will be in the Mountain North Plains, South Central and South-east regions. Only in New England did respondents project a surplus. The East North Central region, the one having the most respondents, also is expected to endure a shortage of iron workers as indicated by the survey participants.

While all industries are projected to have a shortage of iron workers, this will be the most pronounced in the manufacturing industry.

A larger than average number of respondents provided data for iron worker staffing levels, suggesting a fairly strong degree of knowledge about and/or interest in this craft.
Respondents thought that staffing levels for laborers were just right, on average in 2014. Looking ahead to 2015, those same respondents see a soft shortage overall for laborers; 6% project at least a 10% shortage. Interestingly, this was one of the limited occasions where union/labor and owner/client respondent roles both projected the same staffing level for a given craft. For laborers, they both projected growth. Contractors, on the other hand, forecasted a shortage. The greatest projected shortages were for the Southeast, Mountain Northern Plains, Northwest and East North Central regions. The greatest projected surpluses were for the New England and Mid Atlantic regions.

According to the results, the commercial industry will exhibit the greatest shortage of laborers and the utility industry will experience the largest surplus. An above average number of respondents provided data about laborers, suggesting that there was a fairly high level of knowledge about and/or interest in this craft.
Respondents reported a projected shortage of operating engineers for 2015. The anticipated shortage in 2015 is expected to be a little larger than the actual shortage reported in 2014.

Results show that no respondent role predicted a significant surplus of operating engineers. In addition, this is one of only two crafts for which union/labor representatives did not anticipate a surplus in 2015 (the other was iron workers).

The greatest need for operating engineers will be in the Mountain North Plains, Southeast, Southwest and East North Central regions. Only in New England did respondents project a surplus.

While all industries are projected to have a shortage of operating engineers, this will be the most pronounced in the civil and commercial industries.

An above average number of respondents provided data about operating engineers, suggesting that there was a fairly high level of knowledge about and/or interest in this craft.
For 2014, respondents thought that staffing levels for painters & allied trades workers were slightly high, on average. Looking ahead to 2015, those same respondents see a labor force that should be about the right size overall for painters & allied trades workers.

Union/labor representatives and construction manager respondents anticipate a surplus of painters & allied trades workers while contractors and association workers indicated that there will be a shortage.

The only projected shortage was for the Southwest region. Small surpluses were projected for the New England, Mid Atlantic and Southeast regions. The region containing the most respondents, East North Central, had a projected appropriate number of workers for 2015.

The petro/chemical industry will not have a shortage of painters & allied trades workers, according to respondents to this question. The commercial industry was projected to have a shortage, with the remaining industries maintaining adequate staffing levels in 2015.

A smaller number of respondents provided data about painters & allied trades workers, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
For 2014, respondents thought that staffing levels for plasterers/cement masons were a little low, on average. Looking ahead to 2015, those same respondents see a labor force of plasterers/cement masons that will continue to be too small.

Only construction manager respondents anticipate a meaningful surplus of plasterers/cement masons while contractors, owners and association workers indicated that there will be a shortage. Ratings from union/labor workers were just slightly above 0, meaning they thought the staffing levels were about right, on average.

Respondents projected shortages for the Southwest, West North Central and East North Central regions. Small surpluses were projected for the New England and Mid Atlantic regions.

While all industries except the utility industry are projected to have a shortage of plasterers/cement masons, this will be the most pronounced in the civil and commercial industries according to the survey respondents.

A smaller number of respondents provided data about plasterers/cement masons, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
On average, respondents stated that both 2014 actual and projected 2015 staffing levels for roofers & waterproofers were close to what is needed. Of course, in some specific situations there will likely be either a surplus or a shortage.

Union/labor representatives and construction manager respondents anticipate a small surplus of roofers & waterproofers while contractors, owners/clients and association workers indicated that there will be a modest shortage in 2015.

The greatest need for roofers & waterproofers will be in the West North Central and East North Central regions. In the New England and Southwest regions respondents project a surplus.

According to the results, the commercial industry will exhibit the greatest shortage of roofers & waterproofers and the civil industry will experience the largest surplus.

A smaller number of respondents provided data about roofers & waterproofers, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
The sheet metal workers workforce has the distinction of being rated as having a significant surplus of workers for both 2014 and 2015. However, in some specific situations there could still be a shortage.

Both contractors and union/labor workers forecasted a surplus in 2015, with union/labor forecasting a fairly large surplus, on average.

The only region with a projected shortage is the Southeast. A surplus was anticipated for the New England, Mid Atlantic, West North Central and Southwest regions. The region containing the most respondents, East North Central, was expected to have the needed number of sheet metal workers in 2015, on average.

All industries except manufacturing are projected to have a surplus of sheet metal workers.

A typical number of respondents provided data about sheet metal workers, suggesting that there was a comfortable level of knowledge about and/or interest in this craft.
The profile for teamsters is much like that for sheet metal workers. The teamsters workforce was seen as having a significant surplus of workers for both 2014 and 2015. Of course, in some specific situations there could still be a shortage.

All respondent roles except owners indicated that there will be a surplus of teamsters. Owners essentially believe that there is the correct number of teamsters in the market for 2015.

No region, including the populous East North Central region, had a projected shortage of teamsters, on average. The largest surpluses were in the Southeast and Southwest regions.

All industries except civil are projected to have a surplus of teamsters.

A smaller number of respondents provided data about teamsters, suggesting that there may have been a lower degree of knowledge about and/or interest in this craft.
On average, respondents predicted a fairly significant staffing shortage for plumbers/pipefitters/steamfitters in 2015, a change from a small reported staffing surplus in 2014. Of course, in various specific situations there will likely be either a surplus or a more challenging shortage during 2015.

All respondents except union/labor representatives anticipate a shortage of plumbers/pipefitters/steamfitters. Construction managers expressed the greatest concern about 2015 plumbers/pipefitters/steamfitters workforce levels.

The greatest need for plumbers/pipefitters/steamfitters will be in the Mountain Northern Plains and West North Central regions. A shortage was also predicted for the East North Central region, the region representing the plurality of respondents. The New England and Southwest regions should have the strongest staffing levels in the coming year.

According to the results, the manufacturing and petro/chemical industries will exhibit the greatest shortage of plumbers/pipefitters/steamfitters and the civil industry will experience the largest surplus.

By far, the greatest number of respondents provided data about plumbers/pipefitters/steamfitters staffing in 2014. This suggests that there was a high level of knowledge about and/or interest in this craft.
In general, do you believe that the current size of the union construction and maintenance workforce is sufficient?

In general, do you believe that the current size of union apprenticeship classes are sufficient?

The conclusion of the labor survey asked two simple questions: one about the sufficiency of the current union craft construction and maintenance workforce and a similar question regarding the sufficiency of its apprentice classes. After collecting much detail about each unique craft in the previous questions, this provided a final opportunity for each respondent to share a simple summary of their perspective. Of course, numerous respondents also tendered comments at the end of the questionnaire, some of which are included later on.

As illustrated by Exhibit 37, 65% of the respondents to the survey believe that the current (2015) union craft labor supply is too small and 68% believe the apprentice classes are too small. On the other hand, only 2% thought the workforce or apprenticeship classes were too large. About a third reported that the union craft workforce and apprentice classes were the right size.

As can be envisioned by the results above, all five respondent roles covered in this report said there was a workforce shortage. In descending order, from those that had the greatest concern to those with the least concern (yet still a concern), the ranking goes as follows: contractor, construction manager, association, union/labor representative and owner.

Regarding apprentice classes, the rank order from most concerned to least is: contractor and construction manager and owner all tied, followed by association and union/labor representative.

A shortage of workers and apprentices was evident in all regions, with the following receiving the highest ratings (i.e., greatest need for workers and apprentices): Southeast, West North Central, South Central and Mountain Northern Plains. The shortage reported for the region representing the most respondents, the East North Central, was significant, but not quite as great as that in the other regions listed.

Finally, respondents reported a shortage of union craft workers and apprentices in all industries, with little difference among the industries. In other words, it is believed that there are too few workers and apprentices for civil, commercial, manufacturing, petro/chemical and utility work.
The trades are becoming an undesirable career path for many. Effort needs to be made to endear union craft in order to revitalize the rolls of our locals. Attention has to be given to the differences in organized and non-organized labor and the cost advantages to owners must be offset by the expectation of a higher grade professional workforce.

**Contractor/Subcontractor – East North Central – Manufacturing**

As a whole it seems that the young people do not want to enter the construction workforce, we need to change their perception.

**Contractor/Subcontractor – West North Central – Utility**

Losing a lot of talented crafts due to retirements. Need to find new ways to attract newer generations of manpower. This is a challenge for all.

**Owner / Client – Southeast – Utility**

With baby boomers retiring, there is a need to train more apprentices, especially minorities.

**Labor/Union Representative – Middle Atlantic – Commercial/Institutional**

There is an aging union workforce in our area. Need to sell the idea of a career in crafts to our young people.

**Contractor/Subcontractor – East North Central – Civil**

The amount of union workers is sufficient for today. In contrast many will retire in the next 5-8 years. The apprentice classes are too small to offset the amount of future retirees.

**Association Representative – Southwest – Commercial/Institutional**

The big shortage in the pipefitting industry will be in the number of certified and qualified welders.

**Construction Manager – Middle Atlantic – Petroleum/Chemical**

Quality and productivity of the workforce has declined as well, which is a reason we are seeing an influx of open shop/nonunion contractors. We have people in the apprentice programs that don’t have the work ethic of the nonunion people simply because they realize that if they are laid off or terminated, they simply put their name on the list at the union hall and they will be put to work by a contractor desperate for manpower.

**Contractor/Subcontractor – East North Central – Commercial/Institutional**
As the union halls get low on manpower, the quality of the crafts person that is referred out is weak and poor work ethics. More journeymen training and accountability within the union ranks especially within this secondary group is greatly needed.

**Contractor/Subcontractor – East North Central – Manufacturing**

Many new craftspeople are being brought on with varying levels of training prior to being sent in the field. Numbers of apprentices is growing as organizations were caught off guard despite encouragements from Labor Leaders. Need to focus on JM upgrade training as well as encourage all Labor organizations to implement drug testing programs nationwide.

**Contractor/Subcontractor – East North Central – Manufacturing**

We are getting by right now but our inability to train apprentices during the downturn is going to catch up with us sometime in the future.

**Contractor/Subcontractor – East North Central – Commercial/Institutional**

Contractors must hire a greater ratio of apprentices to account for and offset the anticipated attrition and aging workforce. The Union is encouraging this approach...

**Labor/Union Representative – Southwest – Commercial/Institutional**

We need more minorities in the trades.

**Contractor/Subcontractor – West North Central – Commercial/Institutional**

The owners need to do a better job of forecasting their work in a timely manner and if they realize “pinch points” based on overall outage schedule, it needs to be reviewed. The contractors need to be more specific on skill sets required to perform work for the Business Agent to fulfill the need. The Business Agents need to supply the correct skill set the first time and if it is not available communicate to the intended parties. It would also be helpful to the owner to have “updated” lists by craft of union contractors available for the owners. The Tripartite meetings are necessary for solidarity and the best level of communication.

**Owner / Client – Middle Atlantic – Utility**

My plant will be completely retired on June 1 this year and our company will be shutting down 6000MW of generating plants due to environmental regulations. It will have a negative impact on the union man-hours needed by the utility industry!

**Owner/Client – East North Central – Utility**
The big shortage in the pipefitting industry will be in the number of certified and qualified welders.

Construction Manager – Middle Atlantic – Petroleum/Chemical

The quality and attitude of the apprentice is very important. Many of the apprentices are lazy and feel entitled. We need people who are willing to work and make a good living. Recruiting should take place in vocational-tech high schools and other such places. Pride needs to be instilled in these recruits.

Contractor/Subcontractor – East North Central – Commercial/Institutional

I have really been impressed with the degree of cooperation among the trade unions and their understanding of the need to work as partners with the clients. Maybe my plant has been very fortunate, but the quality and attitude of the individuals that have worked in our facility have been exceptional. They don’t just work hard; they get involved with the projects. They provide input on improvements and head off difficulties before they happen. Most of them really understand the concept of keeping sustainable job opportunities depends on making the clients successful. Keep up the great transformation. On a related note as a client, I would like to see all the trade unions eventually have their raises and benefits packages updated at the same time every year. Doing so makes for smoother business transactions between contract companies and clients. While I am at it. My plant is organized by the United Steel Workers, AFL-CIO-CLC. In my opinion, this union organization provides nothing in return for their contract. Unlike the trades unions, they do not provide a pool of trained individuals. They do not screen nor monitor their members. There is simply no value-add to this arrangement. Whereas the trades unions, I can depend on a pool of highly qualified individuals that are trained, monitored and screened by their organization. It will be a great day when the trade unions figure out a sustainable plan to provide permanent work forces for the clients. A big part of the plan has to include wages that are in line with a permanent job location versus that of moving around with some uncertainties. And it has to reflect the reality that some crossover of trades is required as it is unreasonable and unsustainable for a client to maintain strict adherence to specific trades boundaries. This is only my opinion and food for thought.

Owner / Client – East North Central – Petroleum/Chemical

It is becoming harder and harder to be a full-union company.

Contractor/Subcontractor – East North Central – Petroleum/Chemical

The skills and knowledge of our key craftsmen in Michigan have eroded in particular Welding qualified Boilermakers, Journeymen Ironworkers, Qualified Millwrights

Construction Manager – East North Central – Utility
For an overview of the study, see the Executive Summary on pp. 3-5. This section offers observations and insights from the researchers, which will help the users of this report be responsible and informed consumers of the findings.

1. There was a distinct pattern throughout much of the data based on the role of the respondent. For a number of questions, respondents representing union/labor and associations had results similar to each other and respondents representing contractors/subcontractors, construction managers and owners/clients had results similar to each other; and those two sets of results were quite different from each other.

To illustrate, there was a statistically significant difference among the five roles in how they rated staffing levels in 2014. Both union/labor and association workers said they saw a surplus of union craft workers in construction and maintenance in 2014 while contractors, construction managers and owners all said they experienced a shortage. These same results were repeated for projections from respondents about staffing levels in 2015.

2. This report is a summary of individual perspectives. These perspectives, particularly about the future, are not necessarily the same as reality. Moreover, it is likely that the data from respondents regarding 2014 (the past) are more accurate than those about 2015 (the future). Nevertheless, it is important to understand the thought process of the sample in this study i.e., those knowledgeable with the union craft labor industry.

3. The unit of analysis was the individual, not the organization. For some organizations, there could be (and probably were) more than one respondent in the sample. It is necessary to understand the results in terms of organizations (since it would be impossible to get each separate organization to provide a single response representing their entire operation). However, when interpreting the data users should realize that the experiences of each organization as a whole will be a little different than the results based on individual respondents presented here.