Economic Pulse

Workforce Impact of Construction Boom

by Jim Lee

The Coastal Bend region is in the midst of a construction boom. Alongside an unprecedented number of large-scale capital development projects near the Port of Corpus Christi, post-Harvey rebuilding efforts in the region contribute to yet another game changer for regional economic development for many years to come. The regional economic impacts would extend well beyond the construction industry and craft occupations.

As the first of a two-part series on the impact of the current construction boom, this article summarizes workforce demand projections for the next five years in response to the booming construction activity.

There are currently about $50 billion in industrial projects underway in and around the Corpus Christi Ship Channel, according to the Port of Corpus Christi Authority. Beginning in the early 2010s, Corpus Christi has attracted substantial capital investments in developing world-class energy-related industrial plants.

Build, Baby, Build!

These capital development projects, from the steel pipe mill by TPCO to the recently announced chemical plant by Exxon Mobil and SABIC, generate temporary impacts on the regional economy during their construction phase, and permanent economic impacts once the industrial plants become operational.

Earlier Economic Pulse issues examine the potential impact of these industrial projects on the

Construction Timelines and Jobs
Construction Employment Change, Job Years

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>Cumulative Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harbor Bridge</td>
<td>598</td>
<td>578</td>
<td>352</td>
<td>0</td>
<td>0</td>
<td>1,528</td>
</tr>
<tr>
<td>Industrial Projects</td>
<td>3,914</td>
<td>7,284</td>
<td>3,306</td>
<td>751</td>
<td>43</td>
<td>15,297</td>
</tr>
<tr>
<td>Harvey Reconstruction</td>
<td>7,426</td>
<td>6,365</td>
<td>3,183</td>
<td>2,122</td>
<td>2,122</td>
<td>21,217</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>11,938</strong></td>
<td><strong>14,427</strong></td>
<td><strong>6,840</strong></td>
<td><strong>2,873</strong></td>
<td><strong>2,165</strong></td>
<td><strong>38,043</strong></td>
</tr>
</tbody>
</table>

Sources: EMSI, IMPLAN, and author’s calculations.

The construction timelines and peak construction employment figures draw on company announcements. As explained earlier, the surge in construction employment particularly in 2015 offset much of the negative impact of the falling oil prices on the regional economy at the time. When construction is complete, those industrial sites will generate a permanent impact directly on employment in the manufacturing sector.

New Game Changer

This region is facing yet another game changer. Hurricane Harvey hit the Coastal Bend in August 2017, destroying an estimated total of more than 7,000 homes and causing over $3 billion in property damage across the coastal communities alone, including the city of Port Aransas and communities in Aransas and Refugio Counties.

Following more than five months in cleaning up million tons of debris, the post-Harvey recovery phase has begun with efforts to repair or rebuild damaged properties. In addition to the ongoing industrial construction boom, such rebuilding efforts will generate a direct impact on the construction sector in the entire Coastal Bend region for years to come.

Direct Employment Impacts

The table above displays estimates for construction employment between 2018 and 2022 in association with the new Harbor Bridge, announced industrial projects near the Port of Corpus Christi, and post-Harvey rebuilding efforts. In contrast to other types of employment, the numbers represent job years, which will disappear once the construction activities end.

For illustration purposes, the region’s post-Harvey recovery process is assumed to be fully completed in five years: 35% by 2018, 65% by 2019, 80% by 2020, 90% by 2021, and 100% by 2022. According to pre-Harvey data, only 26% of the workforce or spending in those affected communities (e.g., Port Aransas, Rockport, and Refugio) can be met by their local business vendors. This means that the majority (74%) of any increase in economic activity, such as home construction, must be carried out by firms or workforce from outside of their communities.

In addition to construction jobs that are temporary in nature, the industrial plants under construction in the Coastal Bend are expected to generate permanent employment impacts when they begin to operate. According to public announcements, those industrial sites being built between 2018 and 2022 will together directly add more than 1,600 jobs mostly in the manufacturing sector.

Spillover effects

How would the rest of the regional economy benefit from this construction boom? The impact of the surge in construction activities around the Coastal Bend will occur well beyond the local construction and industrial manufacturing sectors. The spillover or secondary effects on other industries within the region, from local restaurants and banks to accounting firms and retail shops, can be estimated using an input-output model.

Based on projections from the IMPLAN input-output model, the table on the bottom of this page displays estimated employment changes for individual industries in the Coastal Bend over the 2018-2022 period as a result of the major construction activities underway. Employment in the construction industry is expected to grow by more than 30% per year on average, and manufacturing employment is expected to grow by nearly 7% per year on average. The secondary impacts are most evident in real estate and retail trade, which are expected to gain about 7% and 5% in employment, respectively.

The ongoing construction boom is expected to potentially generate a total of more than 66,000 jobs in the next five years, or nearly 13,000 per year. These estimates are nevertheless best interpreted as potential changes in workforce demand in addition to an otherwise normal economy in the region. The projected figures will materialize only if the expected increases in workforce demand are met with an additional supply of the regional workforce with the required skills.

Rather than by industry, the table on the next page lists corresponding employment impacts by major occupational category. In addition to construction trade occupations, which will face an estimated increase of nearly 30% in openings each year, management positions are expected to increase by 14% annually.

To summarize, in addition to a surge of workforce demand in the construction and industrial manufacturing industries, those large-scale construction projects...
are reconstruction activities underway around the Coastal Bend are expected to potentially generate an average annual employment growth rate of 5% in the next five years beyond the region’s normal employment growth trend.

Again, the projected employment figures are best considered as a guide to the future economy. Only if all of the projected increases in new job openings are filled with local residents that the projected increases in employment would come to fruition.

How likely will those projections be realized? To address this question, let’s first look at the current labor market condition in terms of the extent to which job openings are filled.

Tight Labor Markets

According to the data available online, overall employment in the Coastal Bend grew by an average of 1% per year historically. In addition to new job positions, some 28,000 positions (or 12%) were for replacing employees who have retired or left the job permanently. The total of roughly 33,000 job openings each year were filled in part by local residents who satisfied the educational or skill requirements, as indicated by the numbers of Regional Completions.

In total, an average of roughly 9,000 individuals each year completed required academic or training programs offered by the post-secondary institutions within the Coastal Bend, including its universities, community colleges, and craft training facilities. An earlier Economic Pulse newsletter provides more details on the region’s educational programs.

The difference between the number of annual job openings and the number of annual program completions, which equals about 24,000 positions for all occupations combined, reflects the extent of shortage or surplus in local workforce supply each year. A job position not filled by a local resident is typically filled by someone outside of the region. The numbers of resident workers indicate where people live instead of where they work.

The estimates for Net Commuters are the differences between the numbers of job positions and resident workers. Those figures represent the minimum numbers of workers who commute in or out of the region to satisfy the numbers of jobs held in the region.

The occupations with the largest amounts of negative numbers are in retail trade and construction trades. Conversely, the estimates are positive for such occupations as engineers, and metal and plastic workers. Positive numbers mean that more commuters enter the region for those types of jobs.

Differences in the numbers of Net Commuters across the list of 95 occupations explain more than 40% of the shortfalls in local program completions across occupations. The estimate of -4,411 for the region as a whole means that more commuters leave the Coastal Bend for work than those entering the region for work. Those commuters can potentially fill some of the projected increases in workforce demand in response to the current construction boom.

Despite a negative number for Net Commuters, the construction trades occupations are expected to face the largest amount of workforce shortage by more than 3,000 per year. The second occupation category with the largest expected workforce shortage (663 jobs) is metal and plastic workers, due in part to the development of iron, steel and plastic plants near the Port of Corpus Christi. Firms would also likely to face hiring difficulties for engineering and management positions.

In a nutshell, the future labor market conditions in the Coastal Bend depend not only on expected changes in different industries, but also how this region develops its workforce to meet the ever-changing workforce needs. Commuters and immigrants from outside this region also help relieve the potential shortages in certain occupations.

Note: This is the second of a two-part series on the regional economic impacts of the current construction boom.
Past Issues:

2018, No. 3: Harvey’s Impact on Corpus Christi  
2018, No. 2: Education System in Corpus Christi  
2018, No. 1: Best Recession Recovered Cities  
2017, No. 10: Immigrants in Corpus Christi  
2017, No. 9: What Levels the Playing Field?  
2017, No. 8: Demystifying the $10 Billion Impact  
2017, No. 7: Recent Employment Dynamics  
2017, No. 6: Economic Diversity Across South Texas  
2007, No. 5: Local Business Dynamics  
2017, No. 4: Housing Market Downswing?  
2017, No. 3: Impacts of Rising Seas  
2017, No. 2: Closing Income Gaps with Education  
2017, No. 1: Seasonal Employment  
2016, No. 12: A Tale of Two Oil Towns  
2016, No. 11: Where You Live Matters  
2016, No. 10: How Distressed is Our Community?  
2016, No. 9: Disparities in Local Business  
2016, No. 8: Understanding Local Unemployment  
2016, No. 7: Corpus Christi by the Rankings  
2016, No. 6: Local Divergence after the Fall  

Economic Pulse

is a joint publication of the South Texas Economic Development Center, the College of Business, and the EDA University Center at Texas A&M University-Corpus Christi. Material may be reprinted if the source is properly credited.

Any opinions expressed or implied are solely those of the original authors and do not reflect the views of the College of Business or Texas A&M University-Corpus Christi. Send correspondence to Jim Lee, (361) 825-5831 or email jlee@tamucc.edu.

For past issues of this newsletter and other publications, visit us online at: SouthTexasEconomy.com