High-Road Workforce Guide for City Climate Action

APRIL 2021

INCLUSIVE ECONOMICS

I. DEVELOPING A HIGH-ROAD WORKFORCE PLAN

Sustainability staff can, and should, work in tandem with their city's workforce and economic development departments to incorporate high-road workforce planning into their overall climate planning. The internal and external partnerships developed through workforce planning can also translate into support for the broader sustainability agenda.

A climate and clean energy jobs and workforce strategy must be much broader than just training programs. To successfully plan this type of comprehensive strategy, we suggest the following steps:

Step 1: Clarify the Goals and Priorities

Step 2: Identify the Challenges

Step 3: Identify and Engage Partners

Step 4: Conduct a Workforce Assessment or "Gap Analysis"

Step 5: Identify Potential Solutions

Step 6: Develop an Evaluation Plan

STEP 1

CLARIFY THE GOALS AND PRIORITIES

The right approach for a city will be driven by the city's climate and workforce goals, the commitment of local policymakers and elected officials to these goals, and the capacity and resources within the community.

What is motivating you to create a workforce development strategy for your climate work?

Cities often begin thinking about clean energy workforce development because they are concerned that a shortage of workers skilled in new technologies or emerging sectors could slow progress on climate goals. Local stakeholders and workforce development staff may also have specific goals for increasing economic opportunity for BIPOC workers, youth, or other specific populations that have been shut out of quality employment. Identifying these goals and how they intersect is an important first step.

The following are some examples of city workforce goals:

- Link climate actions to economic recovery and create jobs for unemployed workers.

- Ensure that local businesses instrumental to climate work have a ready pool of qualified workers.

- Drive down the costs of clean energy solutions (without resorting to low wages).

- Reduce unemployment.

- Increase the participation of BIPOC workers in climate-related jobs.

- Increase the share of local climate jobs held by city residents.

- Create opportunities for youth.

- Promote gainful employment for returning citizens and reduce recidivism

- Engage labor unions to support climate policy development and implementation.

- Increase local investments in climate action in order to create more jobs and promote economic recovery.

- Protect public and jobsite safety and reduce the risk of climate progress being stalled because of faulty or dangerous installation.

- Ensure that climate jobs are good, family-sustaining jobs.

- Protect the jobs of current workers and minimize job loss or worker displacement.

- Expand the skills and qualifications of the local workforce to attract new companies and to tackle increasingly complex challenges.

- Improve the quality of work performed to maximize energy benefits.

Note: We do not include on this list the goal of increasing the engagement of small, local, minority-, and women-owned business enterprises (MWBEs). As employers, these businesses can contribute to workforce goals in their hiring and training practices, but business owners themselves are not part of the workforce. Building the capacity of WMBEs and diversification of the local contractor base are essential to the long-term success of high-road workforce development. WMBEs often require extra support and training through bootcamps and other ongoing services. Supporting WMBEs requires a complementary business and economic development strategy.

Not all of the goals bulleted above complement each other. The workforce priorities in climate planning may be different than the workforce goals of the mayor, city council, economic development department, employers, labor unions, community members, and other public agencies. With strong commitment and adequate resources, workforce development in climate work can lead to win–win outcomes for multiple stakeholders, but the less alignment there is between various goals, the more coordination will be required. To determine potential alignment or areas of potential conflict, it is critical for stakeholders, including city climate staff, to have a clear definition of their workforce priorities and take the time to sort out challenges that arise from seemingly contradictory goals.

Creating a high-road workforce environment will require new partnerships. Dedicating enough time to build trust with and between partners is essential.

EXERCISE 1A. IDENTIFY GOALS

To the list below, add, rephrase, or cross out goals to suit the needs of your city.

City of _____ Climate Workforce Goals

- Link climate actions to economic recovery and create jobs for unemployed workers.

- Ensure that local businesses instrumental to climate work have a ready pool of qualified workers.

- Drive down the costs of clean energy solutions (without resorting to low wages).

- Reduce unemployment.

- Increase the participation of BIPOC workers in climate-related jobs.

- Increase the share of local climate jobs held by city residents.

- Create opportunities for youth.

- Engage labor unions to support climate policy development and implementation.

- Promote gainful employment of returning citizens and reduce recidivism.

- Increase local investments in climate action in order to create more jobs and promote economic recovery.

- Protect public and jobsite safety and reduce the risk of climate progress being stalled because of faulty or dangerous installation.

- Ensure that climate jobs are good, family-sustaining jobs.

- Protect the jobs of current workers and minimize job loss or worker displacement.

- Expand the skills and qualifications of the local workforce to attract new companies and to tackle increasingly complex challenges.

- Improve the quality of work performed to maximize energy benefits.

- _____

- _____

- _____

EXERCISE 1B. PRIORITIZE GOALS

Prioritization is easiest when choosing between only two options. The prioritization grid below provides an easy way to rank a list.[12]

First, enter the list of goals in the spaces below. The order does not matter.

Next, comparing one pair at a time, circle the number of the higher priority goal.

Continue with each pair, indicating the higher priority goal. You will compare goals 1 and 2; 1 and 3; 2 and 3; and so on.

You must make a choice between all pairs. Finally, add up the number of times you circled each number and write that in the second chart below. The goal whose number you circled the most is your highest-priority goal.

Example:

Ensure clean energy companies have a ready pool of qualified workers	1		
1	Reduce unemployment	2	
(2)			
1 (2)	Create opportunities for youth	3	
(3) 3			

Goal #	Times Circled
1	0
2	2
3	1

Priority of Goals in Example:

1.   Reduce unemployment

2.   Create opportunities for youth

3.   Ensure that local companies have a ready pool of qualified workers

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12   Framework adapted from Richard N. Bolles. 2019. *What Color Is your Parachute?* New York, NY: Ten Speed Press.

							1
1/2							2
1/3	2/3						3
1/4	2/4	3/4					4
1/5	2/5	3/5	4/5				5
1/6	2/6	3/6	4/6	5/6			6
1/7	2/7	3/7	4/7	5/7	6/7		7
1/8	2/8	3/8	4/8	5/8	6/8	7/8	8

Count the number of times each item was checked and enter that number in the space below.

# of Times Checked			
1	2	3	4
5	6	7	8

Ranked Priority Goals:

1. _____

2. _____

3. _____

We recommend that you next try to combine these goals into a single statement that can be shared with partners and other stakeholders.

Goal Statement

_____

_____

_____

_____

_____

_____

Once you have arrived at a clear goal statement, it may be tempting to jump to the solution phase. The second section of this guide, Implementing a High-Road Workforce Plan, addresses how to translate goals into action and provides many examples of workforce programs and activities. However, we advise that before exploring solutions, you do a little more work to understand the specific challenges, identify the most appropriate approaches, and determine the most effective role for the city to play in pursuing the priority goals. Doing this legwork will help identify local partners, as well as avoid unintended consequences and wasted time, money, and other resources.

IDENTIFY THE CHALLENGES

A goal is a target, a future desired result. It is important to identify the barriers to reaching the goal or the local challenges that led you to prioritize this goal in particular.

For example, if your highest priority goal is to "increase the participation of unemployed and underemployed workers in clean energy jobs and address racial equity," you might identify the following challenges:

- Employers are hiring workers from their own networks, which do not include high numbers of BIPOC workers, to fill clean energy jobs in the city.

- Employers seem to have enough employees to meet current demand and are not hiring.

- Unemployed and underemployed workers in the city are not adequately trained to perform the tasks associated with clean energy work.

- There is not widespread knowledge of or interest in climate-related work.

Perhaps your highest-priority goal is to ensure there is an adequate supply of qualified workers to meet the growing demand for building-decarbonization services. The need to rapidly incorporate new heat pump technology can create a skills gap. A skills gap emerges when new skills are required and the curricula and credentials offered by available programs lag behind market demand. Figure 5 shows one of the causes of a skills gap.
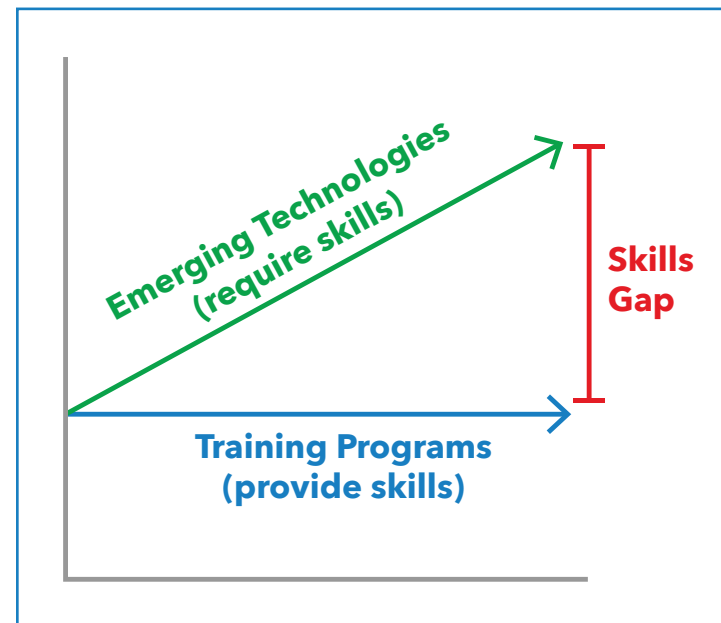

Figure 5. Skills Gap

EXERCISE 2A. IDENTIFY CHALLENGES OR BARRIERS

Below are some examples of specific goals and potential challenges. If your city's priority goals are identified below, circle them. If a goal is not listed, write it in. Next, write in or circle the challenges that best reflect your city's conditions. You might not know precisely what the challenges are, but working through this exercise will help you consider the challenges more thoroughly. People with different perspectives will identify different challenges, which is the point of this exercise. There is no wrong answer! Examples of challenges you might identify are listed below, but the lists are not exhaustive.

In the process of working through this exercise, you will think of people who can help identify additional challenges or vet your lists. Comparing your challenge analysis with that of a counterpart in your economic or workforce development department or those of outside stakeholders is the first step toward finding common solutions. Conflicts arise when people jump to solutions without developing a shared understanding of the challenges.

GOAL: Ensure that local businesses instrumental in climate actions have a ready pool of qualified workers.

CHALLENGES:

- Customers seeking clean energy work cannot find qualified contractors with a strong track record and the availability to meet their needs in a timely manner.

- Employers/contractors do not have the skilled workforce required by new technology.

- Education and training institutions are not providing students with the necessary knowledge and skills.

GOAL: Increase the participation of unemployed and underemployed workers, particularly BIPOC, in climate jobs.

CHALLENGES:

- Employers seem to have enough employees to meet current demand, and they are not hiring.

- Workers in our city are not adequately trained to perform the tasks associated with clean energy work.

- The workers we want to target are not aware of or interested in clean energy work.

GOAL: Drive down the costs of clean energy solutions.

CHALLENGES:

- Clean energy solutions are too expensive relative to business as usual.

- Labor costs are too large a portion of total project costs.

- Not enough customers see the value of investing in clean energy.

GOAL: Increase the share of local climate jobs held by city residents.

CHALLENGES:

- Employers are hiring workers from elsewhere to do the clean energy work in the city.

- City education and training institutions are not focused enough on clean energy.

GOAL: Engage labor unions to support climate policy development and implementation.

CHALLENGES:

- Some local labor unions are opposing our climate plans or critical pieces of our climate plans.

- Some local labor unions—especially those associated with fossil fuels—fear they will lose work as we implement our climate goals.

- Local labor unions do not understand our climate goals and do not know where they fit into the solutions.

- We do not know the potential employment impacts of our chosen climate solutions, so we do not know which unions to engage.

- Climate staff do not hold working relationships with local labor unions that would allow them to discuss our climate goals.

- Union labor cannot compete on cost against non-union contractors, so they are not getting the jobs.

GOAL: Increase local investments to create more climate jobs in the city.

CHALLENGES:

- The current level of investment in clean energy is insufficient to meet our climate goals.

- We do not have money to encourage clean energy investments through incentives or subsidies.

- We do not know which kinds of climate actions are big job creators.

- There are tradeoffs between low-cost climate solutions and big job-creating climate solutions.

- In the absence of tools to weigh the costs and benefits, the tendency is to equate low cost with cost effectiveness (as opposed to identifying solutions with the highest benefit-to-cost ratio), thus hindering the job potential of our climate plans.

photo: Service Employees International Union

GOAL: Ensure that climate jobs are good, family-sustaining jobs with comprehensive benefits.

CHALLENGES:

- Clean energy employers in our city are anti-union.

- There are enough qualified people willing to work for low wages that there is no market rationale for increasing employee compensation.

- There is a perception that measures like prevailing wage would increase costs without providing commensurate benefits.

- The city does not have much control over the compensation of jobs in the private sector.

GOAL: Protect the jobs of current workers and minimize job loss or worker displacement.

CHALLENGES:

- Our climate plan will accelerate an energy transition away from fossil fuels, which could trigger job loss.

- Some fossil fuel workers have specialized skill sets that do not transfer to other areas of work.

- We do not have funds to support worker transition (e.g., bridges to retirement, wage guarantees, or retraining, etc.).

- We cannot control the workforce decisions made by local employers.

GOAL: Expand the skills and qualifications of the local workforce to attract new businesses and employers to the region.

CHALLENGES:

- We do not have education or training institutions that focus on green or clean energy skills.

- We do not know what the employers we would like to attract are looking for.

GOAL STATEMENT: [Insert from Exercise 1B]

- _____

_____

_____

CHALLENGES: [Copy from examples above or draft your own]

- _____

- _____

- _____

SUB GOAL STATEMENT:

- _____

- _____

- _____

CHALLENGES:

- _____

- _____

- _____

SUB GOAL STATEMENT:

- _____

- _____

- _____

CHALLENGES:

- _____

- _____

- _____

EXERCISE 2B. REFRAME CHALLENGES

To choose the best solution for the challenges you have identified, it is helpful to consider the challenge from different perspectives. Therefore, one final activity can be useful: reframe the challenges. Trying to reword challenges can prompt out-of-the-box thinking and point the way to new solutions. This exercise may be challenging because it can reveal implicit assumptions, bias toward a particular way of seeing things, or preference for particular solutions. Try not to judge which framing is correct. The purpose of this exercise is to consider the challenge from different points of view. How might a current worker perceive this challenge? How might a currently excluded worker perceive this challenge? What about a clean energy business? An apprenticeship program coordinator? A workforce development officer?

In the table below, take the challenges you identified in Exercise 2A and try to find a way to frame each challenge differently. The point of this exercise is not to be comprehensive in exploring all possible perspectives, but rather to recognize that there are different ways of understanding a challenge. Thinking about the challenges differently can yield different types of solutions.

1. See the example below and then populate your own table in the space provided.

Table 1. Challenge Reframing Exercise: An Example

City-Identified Challenge	Alternative Perspective	From the Point of View of…
"Solar companies aren't hiring the workers that our community colleges are training."	"There isn't enough solar work to sustain all the firms working in this space." Or "We don't want to shoulder the risk of hiring random people."	A solar contractor
"There aren't enough qualified workers in our area to perform the residential heat pump installation jobs we need to meet our climate goals."	"Competition in the residential market is driven by low cost. My skills and experience aren't rewarded."	A skilled HVAC worker with heat pump expertise

Table 2. Challenge Reframing Exercise

City-Identified Challenge	Alternative Perspective	From the Point of View of…

IDENTIFY AND ENGAGE PARTNERS

If you worked through the exercises in Step 2, you have already begun to think about stakeholders. Potential partners are a subset of stakeholders. Stakeholders are the workers, employers, unions, and other organizations that will be affected—positively or negatively, directly or indirectly—by the implementation of your climate program. They are the people and organizations you are trying to serve and also those who can help or hinder you in reaching your goal. A key principle in community engagement is to listen to those most affected, so when you are considering potential partners, do not only think of people most eager to engage or those who have the greatest capacity to do so.[13] Stretching beyond the community of traditional climate or sustainability advocates will be key to success.

One of the reasons it is so important to consider the workforce implications of climate action is that city climate action has an inherent workforce dimension. The design and implementation of climate policy affects workers in the community, whether or not the effects are intentional. Without ensuring that this influence is positive, climate plan implementation may reinforce patterns that perpetuate low-road jobs and inequity.

It may be helpful to conduct the exercises below for different climate actions. The workforce partners may differ by climate action, but it's also possible that the specific workforce required for different climate initiatives will overlap. For example, transportation decarbonization strategy might include an expansion of transit operations, bicycle and pedestrian infrastructure, fleet electrification, and EV charging infrastructure. Workers, employers, and training programs for bicycle and pedestrian infrastructure will have more in common with those involved in landscape restoration and resilience than with programs designed for transit operators. Workers, firms, and training programs for EV infrastructure may be the same as those engaged in implementing building performance standards. Mapping the industries involved in different climate actions will be helpful in identifying the right partners.

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13   See the Jemez Principles, six best practices for equity in organizing: be inclusive; emphasize bottom-up organizing; let people speak for themselves; work together in solidarity and mutuality; build just relationships; and commit to self-transformation from Southwest Network for Environmental and Economic Justice. 1996. *Jemez Principles for Democratic Organizing.* Jemez, NM: Meeting hosted by Southwest Network for Environmental and Economic Justice (SNEEJ), Dec. 1996 . Retrieved January 6, 2021 from https://www.ejnet.org/ej/jemez.pdf.

EXERCISE 3A. MAP CLIMATE ACTIONS TO INDUSTRIES

This exercise will best be done in partnership with city workforce and economic development staff, but starting to think about climate actions in terms of the industries they affect will help initiate the dialogue with economic and workforce development staff.

Table 3. Industry Categories[14]

1.	Agriculture, Forestry, and Fishing*
2.	Mining and Extraction
3.	Utilities (Electric, Gas, and Sanitary Services)*
4.	Construction* (includes new construction, building retrofits, land restoration, transportation infrastructure, EV charging infrastructure, clean energy or energy storage resources, etc.)
5.	Manufacturing
6.	Wholesale Trade
7.	Retail Trade
8.	Transportation* (includes the movement of people and goods)
9.	Information, Finance, Insurance, and Real Estate
10.	Services
11.	Education
12.	Health Care and Social Assistance
13.	Hospitality
14.	Public Administration

*These are the industries most likely affected by your climate plans.

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14   These categories are from the North American Industry Classification System (NAICS), the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy (https://www.naics.com/).

In the table below, list the city's priority climate actions. Choosing from the list of industries above, note the industries in your city involved in each action. Electric vehicle and heat pump purchases will require manufacturing, but unless the manufacturing takes place in your city, it will not be an impacted industry.

Based on your policy goals, identify the scale of future investment, projecting out about five years. Identify whether the majority of the investment will come from the public or private sector. Finally, note if you project a substantially new set of skills for which workers would need to be trained.

Table 4. Climate priorities by industry and projected investment

City Climate Action	Industry involved	Scale of investment over next 5 years ($)	Investment (public, private, or both)	Potential skills gap
Example 1. Expand cities bike lanes	4. Construction	$	Public	N
Example 2. Existing building retrofits to improve energy performance	4. Construction	$$$	Private	Y
Example 3. Urban greening and tree planting	1. Agriculture, Forestry	$$	Both	N
Example 4. Expand public transit operations	8. Transportation	$$	Public	N

EXERCISE 3B. BRAINSTORM POTENTIAL PARTNERS

For each significant industry identified above, use the following questions as guides to consider different potential partners. This is a brainstorming exercise. Be sure to name specific organizations or individuals. Note those with whom you already have a relationship.

Table 5. Potential partners

Industry/Industries:		
Related Climate Actions:		
1. What agencies, utilities, or jurisdictions in your region will influence consumer behavior or drive implementation of your climate action?		**Existing Relationship?**
Organizations	Individuals	
2. What decision makers, including elected officials, are particularly interested in climate, equity, or workforce issues?		
Organizations	Individuals	
3. What labor unions or organizations represent workers in the relevant industry?		
Organizations	Individuals	
4. What organizations in the community provide job- or apprenticeship-readiness training?		
Organizations	Individuals	

5. What community-based organizations, churches, or other institutions provide wraparound for opportunity youth or support services for other disadvantaged workers?		
Organizations	Individuals	

6. What other city departments, regional agencies, or associations engage with workforce development or economic development? These may be public (e.g., workforce boards) or private (e.g., chambers of commerce).		
Organizations	Individuals	

7. Which education and training providers provide occupational training or upskilling for relevant industries? These could be community college programs, apprenticeship programs, or private certification programs, etc.		
Organizations	Individuals	

8. Who are the contractors or other employers that are providing or are likely to provide goods and services related to the execution of your climate action?		
Organizations	Individuals	

9. Who are minority and women-owned businesses or contractors that you want to engage in the execution of your climate action?		

10. Which non-governmental organization (NGO) partners in the community are supportive of your city's climate, equity, or workforce goals?		
Organizations	Individuals	

EXERCISE 3C. REACH OUT TO YOUR CONTACTS AND CONDUCT MINI-INTERVIEWS

It is important to talk with your contacts about tackling workforce issues and gather information about what they are interested in and thinking about. These conversations should provide information about who might have an interest in and the capacity to work with the city on a high-road climate workforce initiative and what they might be able to offer. Start by inquiring internally about existing city relationships with labor; mayors or high-level city staff may have established relationships or have a history of engaging with labor. Remember to take notes.

It may be helpful to start an online document (e.g., Google Docs) to summarize each call in one paragraph immediately after finishing the conversation. Include the following information: name of person spoken with, organization, email, and phone number. Add green, yellow, and red color-coding to gauge the person's level of interest. It is important for city staff to demonstrate a commitment to a goal by leading these initial conversations, even if they are introductory, brief, and informal. There will be opportunities to outsource some of the ongoing communications later on.

Start the conversations by describing the city's workforce-related goals from Step 1. Explain that you are in the exploratory phase and want to leverage and build upon existing efforts. Here are some questions to consider asking in these conversations:

1. What do you think about the workforce goals we laid out?

2. What do you think we need to know or be aware of?

3. Could you tell us a bit about your organization? What programs or services do you offer? Who are your program participants?

4. What do you think might be a good role for you and your organization as we figure out how to meet these goals?

5. What goals are you working toward that pertain to workforce, economic equity, or climate issues? What are you interested in doing more of?

6. What do you think needs to be done differently in terms of achieving workforce, economic equity, and climate goals?

7. What are some of the challenges you or your organization are facing?

8. What are some gaps that you see in the community in terms of jobs, job quality, job access, skills, diversity and inclusion, or related issues?

9. (If appropriate) Would you be interested in joining a small working group to help us further our work?

EXERCISE 3D. IDENTIFY CORE WORKING GROUP

The purpose of this exercise is to assemble a core group of committed individual leaders in the community who represent distinct roles and different perspectives and who maintain different networks and relationships in the community.

It is important to select individuals who show interest and a willingness to engage in an initially ambiguous process. At this point, your goals are clear, and the challenges have been considered, but solutions have not yet been identified. It is important to engage the core working group before you have identified specific workforce solutions or actions so there is shared ownership of actions and solutions. This is also important so that each entity identifies for itself the role it can play within the workforce ecosystem.

If it is not possible to work with a building trades council, it will be important to convene other industry partners (i.e., local employers, utilities, agencies, or local unions) to assess employment trends, identify projected job openings, and determine the skills employers need. These partners may also have robust projections for the skills employers will need in the future. Engage the Phase I core group before bringing in additional partners in Phase II.

photo: Rising Sun Center for Opportunity

Table 6. Core Working Group

	Category	Individual, Organization
Phase I	City climate staff lead	
	Economic or workforce development, public works, facilities, equity office, or other city departments	
	Building trades apprenticeship coordinators council*	
	Pre-apprenticeship/job readiness training organization	
	Firms working in this space, WMBEs, and/or business organizations representing potential employers	
Phase II	Community-based organizations providing wraparound or support services	
	Environmental + environmental justice partners	
	Other cities, utilities, agencies engaged in climate/energy work	
	Additional contractors, businesses, employers	

*   *Many city climate plans involve construction activity. The construction industry can provide pathways to good-paying jobs through earn-as-you-learn apprenticeship programs. In many cities, the building and construction trades unions will be critical partners. A building trades council, or sometimes central labor council, usually coordinates activities among the various local unions.*

EXERCISE 3E. CONVENE THE WORKING GROUP

Wait until a meeting is necessary, but do not do too much planning before members come together at this session. Before convening the entire working group, be sure to speak with each member individually. Five-minute individual conversations can make a 50-minute group conversation far more effective. People may have very different ideas about the challenges and solutions, and it is important that members of the working group feel comfortable expressing their opinions and ideas. It is also important that members feel that their time is respected and being well spent.

Below are some tips for running effective diverse partner working group meetings on high-road climate workforce goals. These tips are oriented toward conference calls or online meetings (e.g., using Zoom) but are also good practices for in-person meetings:

1. **Develop and send out an agenda in advance.** Make sure people understand why the group is meeting and have a clear sense of purpose. The agenda will provide a compass for the meeting; you can use it to steer back toward the purpose if the conversation veers off course. In setting an agenda, keep in mind that the aim of a meeting is to create a shared pool of information, understanding, and agreement. More challenging issues may arise naturally, but if key topics are being avoided, invite the group to address them: "One of the issues we are here to discuss is…" or "An important item on the agenda today is…."

2. **Start on time. End on time.** It may be useful to schedule a 50-minute meeting instead of an hour. Starting at 10 minutes past the hour can give people a valuable break between back-to-back meetings, and there is nothing that requires 60 minutes that cannot be done in 50.

3. **Introduce the meeting with a reminder of the high-level science on climate change and the reason for meeting.** For example, you might say, "The climate is changing due to human activity. This science is undeniable. We also know that the burden will fall disproportionately on poor people, people of color, and other vulnerable members of our community. We need to do our part to address climate change and protect city residents, and as we do this, we want to ensure that we are creating good, career-track jobs and access to those jobs for city residents."

4. **Use interactive activities to engage all participants.** These may include group breakouts, brainstorming, or a rotation in which small groups discuss each key point for five minutes and then move on to the next. These techniques not only break the ice and draw out quieter participants but also speed up the process of gathering as much as much information as possible.

5. **Encourage everyone to speak.** Silence is difficult to interpret. It can mean general agreement or active listening; or it could mean that there is dissent, hostility, or disengagement. If members of the group have been silent throughout the meeting, you can use the "round robin" strategy, inviting each person to weigh in, reiterating that every perspective is valuable.

6. **End by reviewing next steps.** Take notes during the meeting and flag items that require follow up. Five minutes before the end of the meeting, review next steps—including identifying by name anyone who volunteered to do the follow-up and setting out reasonable expectations as clear progress indicators—and schedule the next meeting.

   If there is a critical next step and no one identified to take it, ask for two volunteers to work together on it offline. It is essential for real work to get done between meetings, and expectations must be clearly understood by the entire group.

photo: Rising Sun Center for Opportunity

7. **Send out minutes by email.** Keep notes as concise as possible; people are less likely to review dense text. But do provide all essential information. Include the date and time of meetings, the names of people present, agenda items discussed, decisions reached, and questions and answers.

In the body of the email, be sure to clearly indicate the next steps: action items with the name of the person responsible, and the date and time of the next meeting. We recommend using a single Google document to take notes, keeping the most recent meeting's notes at the top of the document and sharing the link each time this document is updated.

For more guidance on running effective meetings, see the enduring advice published by the Harvard Business Review in 1976.[15]

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15   Antony Jay. 1976. How to Run a Meeting. *Harvard Business Review*, the Magazine (March 1976). Retrieved January 6, 2021 from https://hbr.org/1976/03/how-to-run-a-meeting?cm_sp=Article-_-Links-_-Comment.

STEP 4

CONDUCT A WORKFORCE ASSESSMENT OR "GAP ANALYSIS"

Too often, a workforce development landscape includes programs that train participants for jobs that do not exist or that potential trainees are unable to access. Balancing workforce supply and demand is about making sure that interventions on one side of the labor market translate into benefits on the other side. One useful tool to better understand the issues surrounding your city's clean energy labor market is a workforce assessment or "gap analysis." A gap analysis draws on information about a labor market to identify employer needs, the characteristics and skills of local workers, and the gaps between the two.

Achieving clean energy and climate goals will require a continuous supply of qualified workers. Creating an oversupply of workers, however, can suppress wages and drive highly skilled workers to seek higher-paying opportunities, leaving the clean energy industry without the skills and qualifications needed to meet emissions reduction and energy savings goals.

Background research is essential to a successful outcome. The reason we suggest waiting until Step 4 to do background research is two-fold. The first three steps will help clarify and narrow your research questions. Then, your working group may be able to provide valuable information and resources that will make the research tasks easier.

You might have general workforce goals you want to align with your climate action plan, or you may have more specific workforce goals that relate to a particular action or sector (e.g., building decarbonization or transportation electrification). In either case, it is important to estimate the number of workers required to execute the actions. It is also important to recognize that jobs are created when money is spent, so when projecting the number of anticipated workers, your estimate should be based on realistic assumptions about how and to what extent city policy levers will trigger the desired investments. While it is tempting to think

that an ample supply of qualified workers will accelerate climate progress, training workers does not generally drive climate action. Finding the balance between oversupply (which can suppress wages) and undersupply (which can slow climate action) is the goal of this calibration.

The number of workers considered adequate is somewhat subjective. Employers generally want a large pool of qualified workers from which to hire. When there are more workers than there are jobs, wages go down. This oversupply can be good for employers—particularly employers for whom competition is driven by cost—but it can be bad for workers.

Employers also appreciate being able to hire workers who come to them fully trained and with relevant experience. For these reasons, frequently, firms that offer services important for the implementation of your climate action plan will push for publicly funded training, arguing that it is difficult to find qualified workers. Often though, rather than a general skills gap in the labor market, workers who have the skills and experience are not willing to work for the wages employers are offering. In this way, a wage gap can be disguised as a skills gap.

Some employers partner with labor unions in the construction industry to fund and operate apprenticeship training programs. These multi-year, earn-as-you-learn programs are finely tuned to labor market demand, so that the employers partnering with the labor unions and supporting apprenticeships are assured of a ready supply of trained workers. Workers who invest in training, in turn, are assured they will have jobs after they finish the training. In this balanced model, both employers and workers are invested in ensuring a sufficient supply of skilled labor with wages that remain high enough to attract and retain skilled workers.

Different perspectives will lead to different estimates of worker shortages. When resources are available, an economics firm can be enlisted to model projected jobs from your climate plan. For cities participating in the Climate Challenge, Inclusive Economics—a consulting firm specializing in strategy for an inclusive green economy—can provide help with job projections. For building decarbonization, Inclusive Economics has developed a simulator to rapidly estimate the employment impact of different policy scenarios. Otherwise, Exercise 4A can get you started.

EXERCISE 4A: ESTIMATE THE EMPLOYMENT IMPACTS OF YOUR PLANS

Refer to the priority industry or industries identified in **Exercise 3A** that will be affected by your climate policy. In most cases, this will be construction. Projects developing building electrification, energy efficiency, solar or other renewables, EV charging infrastructure, and public or active transit infrastructure all fall into the category of construction. A general rule of thumb is that construction investments create five to six full-time equivalent (FTE) jobs for one year (called a job-year) per $1 million in investment. Projects that are more capital intensive (e.g., replacing windows or water heating systems in buildings) will create slightly fewer jobs than projects that are more labor intensive (e.g., energy retrofits or transit infrastructure). Projects that pay lower wages will create more jobs (albeit lower-quality jobs) than projects where wages are higher. Wind and solar construction create two to three jobs per $1 million in investment. Residential weatherization creates eight to nine jobs per $1 million in investment.

Outside of the construction industry, job impacts are likely to be smaller, unless a region has a strong local supply chain. If the City of Los Angeles, for example, is purchasing new electric buses that are built in and around L.A., they will create more local jobs than a city that buys buses manufactured elsewhere. In general, local procurement has a much higher employment impact than non-local procurement. In fact, the regional economy always benefits from local procurement, even when the cost of local purchases is higher than non-local purchases. Local procurement of energy, vehicles, or other goods and services generates tax revenue, recirculates money in the local economy, and creates jobs. Even without a well-developed local supply chain, purchasing goods from local dealers or stores supports retail jobs in the local economy.

In a professional jobs analysis, you will most likely be provided with data for direct, indirect, and induced jobs. For the purposes of workforce development, direct jobs are the most pertinent. Indirect jobs are those created in the local supply chain, and induced jobs are those resulting from workers spending their earnings in the local economy. For workforce planning, you need to know roughly how many workers will be employed *directly* to implement climate actions, as well as what skills are required of those workers. Indirect and induced jobs are less relevant in workforce planning.

Here are the key steps in estimating the employment impact of your plan:

1. **Estimate your workforce needs in terms of FTE workers**, a unit that makes workload comparable across different contexts (e.g., part-time versus full-time workers). To estimate the number of FTE workers needed, you can use the multipliers (jobs/$million in investment) provided above. This calculation will give you "job years." If you hope to achieve this goal over a 25-year period of time, divide the total number of job years by 25. For example, if you have determined that a home can be electrified for an average of $25,000/each and you have 10,000 homes to electrify, the total cost (homeowner and incentive cost) of reaching this goal would be $250 million. Assuming five jobs are created per $million invested, this action would require 1,250 job years. If this goal would be achieved over 25 years, you would need 50 FTE workers per year to focus solely on electrifying homes.

2. **Next, try to determine how the work is distributed.** If one-third of the work is in HVAC, one-fifth is in plumbing, and the remainder is electrical work, you would need 16 HVAC workers, 10 plumbers, and 24 electrical workers. Does your city have enough workers? Do they have the requisite skills? Are workers retiring at a faster rate than they are being recruited? The answers to these questions will inform your workforce efforts.

3. **If other cities, utilities, or agencies in your region are pursuing the same goal, and if resources allow, you may want to conduct a regional workforce assessment or landscape analysis.** While requiring more resources and coordination, these assessments can be a valuable planning tool. A regional analysis would require that economic development agencies, state energy policy experts, utility providers, and community-based nonprofits coordinate to determine what the climate or clean energy job market will look like in the future. This analysis will provide insight into whether your workforce development program will train workers for jobs that are likely to exist in five, ten, or even twenty years.

Some cities, states, and utilities have enlisted third-party organizations to assess the renewable energy and energy efficiency workforce in their communities in order to identify prime areas of investment.

- The **City of Minneapolis** Sustainability Office commissioned a city-wide Renewable Electricity and Energy Efficiency Workforce Assessment by a third party consultant to assess the current renewable energy and efficiency job market in the city and recommend next steps for green workforce development.[16]

- The North Carolina Department of Commerce drafted Clean Energy & Clean Transportation in NC: A Workforce Assessment as directed by Section 6 of Executive Order 80.[17,18] The goal of this report was to "evaluate the current and projected workforce demand in North Carolina's clean energy and transportation sectors, assess the skills and education required for employment in these sectors, and recommend action to help North Carolinians develop such skills and education."

- The Connecticut Department of Energy and Environmental Protection commissioned a Survey of Connecticut Energy & Energy Efficiency Workforce Needs using a U.S. Department of Energy grant. The survey was designed to help businesses better target, develop, and retain qualified workers, particularly in entry-level positions.[19]

16   Sandy Fazeli and David Foster. 2019. *Minneapolis Renewable Electricity and Energy Efficiency Workforce Assessment.* National Association of State Energy Officials / Energy Futures Initiative. Retrieved January 6, 2021 from https://www.naseo.org/data/sites/1/documents/publications/Minneapolis%20Workforce%20Development%20Assessment.pdf.

17   North Carolina Department of Commerce. 2019. *Clean Energy & Clean Transportation in NC: A Workforce Assessment.* Labor & Economic Analysis Division, Office of Science, Technology, & Innovation. Retrieved January 6, 2021 from https://files.nc.gov/ncdeq/climate-change/interagency-council/Clean-Energy---Clean-Transportation-in-NC-A-Workforce-Assessment-2019.pdf.

18   Roy Cooper. 2018. *Executive Order No. 80: North Carolina's Commitment to Address Climate Change and Transition to a Clean Energy Economy.* North Carolina Office of the Governor. Retrieved January 6, 2021 from https://governor.nc.gov/documents/executive-order-no-80-north-carolinas-commitment-address-climate-change-and-transition.

19   Connecticut Business and Industry Association. 2017. *2017 Survey of Connecticut Energy & Energy Efficiency Workforce Needs.* Retrieved January 6, 2021 from https://www.cbia.com/resources/workforce-development/workforce-reports-surveys/2017-survey-energy-energy-efficiency-workforce/.

NOTE:

Climate action generally requires spending money that would otherwise have been spent on other things (i.e., purchasing an electrical vehicle rather than an internal combustion engine vehicle, an air-source heat pump rather than a forced-air natural gas furnace, or a solar installation instead of a kitchen remodel). The alternative spending would also have created jobs. Unless new money is coming into the region to support climate action, such as from a federal stimulus package, job estimates represent a shift in jobs rather than new jobs.

While it is tempting to seize the opportunity to recruit new workers to fill these openings, it is important to determine whether there are, in fact, openings. Members of your working group may be able to help make this determination.

In 2008, the California Public Utilities Commission (CPUC) commissioned the University of California, Berkeley to create the California Workforce Education and Training Needs Assessment (2011), an inventory of current efforts and an assessment of the training and education resources necessary for successful delivery of the long-range goals set forth in the California Long-Term Energy Efficiency Strategic Plan.[20]

In 2013, the CPUC directed California's Investor-Owned Utilities (IOUs), which administer the majority of the state's energy efficiency and rebate programs, to develop a comprehensive plan to address workforce issues in their energy efficiency programs. The result was the report Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities produced by University of California, Berkeley.[21]

20 Carol Zabin, Karen Chapple, Ellen Avis, Jessica Halpern-Finnerty, T. William Lester, Sergio Montero, Michael Reich, Lynn Scholl, Peter Berck, Salafai J. (Susie) Suafai, Zach Church, Tory Griffith, Kate Stearns, Jane Peters, Nathaniel Albers, Elaine Gaertner, Evgeniya Lindstrom, John Carrese, and Joshua Freely. 2011. *California Workforce Education and Training Needs Assessment.* University of California, Berkeley. Retrieved January 6, 2021 from https://laborcenter.berkeley.edu/pdf/2011/WET_Part1.pdf.

21 Carol Zabin, Jessica Halpern-Finnerty, Megan Emiko Scott, Betony Jones, Robin Walther, Cecilia Estolano, Alex Paxton, Cynthia Guzman, Linda Collins, Anjana Richards, and Peter Simon. 2014. *Workforce Issues and Energy Efficiency Programs: A Plan for California's Utilities.* University of California, Berkeley. Retrieved January 6, 2021 from https://laborcenter.berkeley.edu/workforce-issues-and-energy-efficiency-programs-a-plan-for-californias-utilities/.

EXERCISE 4B: ASSESS WORKFORCE ECOSYSTEM CAPACITY

Labor market and workforce ecosystems are made up of a wide variety of individuals and institutions. Imperfect information or a lack of resources in training institutions can lead to unmet needs for both employers and workers. Addressing these problems requires identifying current and projected needs, the entities best prepared to help meet those needs, and factors affecting the entities' ability to achieve the desired results. For example, a local training partner may be highly effective in delivering training but lack the funding to develop specialized programs for new skills; technological innovations may be outpacing the local educational system's ability to adopt new curriculum.

Beginning to understand which institutions can be leveraged to resolve unmet needs requires a broad understanding of your city's workforce development ecosystem. To gain this understanding with the help of your working group, it would be useful to:

1. Identify the education and training providers that train new workers in the broad occupational skills required. Are there community college HVAC programs? What registered apprenticeship programs exist?

2. Determine whether the core occupational curricula in these programs sufficiently cover the technology required. For example, are new HVAC workers trained in the selection, sizing, and installation of air-source heat pumps? Are electrician apprentices trained in the installation of EV charging stations?

3. Determine how current workers learn new skills. Are there short-term training opportunities for already licensed workers that provide "stackable credentials"—training that builds upon what they already know and prepares them to incorporate emerging technology into the portfolio of services they are qualified to provide.

4. Determine what organizations are providing job training and placement support for workers with barriers to employment. Assess how successful they are. What are their placement rates? What communities or types of individuals are these organizations reaching? What support do they provide?

5. Determine whether there are other communities or types of individuals whose needs are going unmet. What are the barriers? What support services are needed?

6. Determine who is driving demand for workers in this arena. What other cities or agencies have complementary climate goals or policies?

EXERCISE 4C: MAP THE WORKFORCE ECOSYSTEM

While limited resources or capacity can stymie the efforts of individual organizations, even a well-resourced organization will be limited in its efficacy without strong partnerships. The strength of a workforce ecosystem is a function of the strength of the relationships between different individuals and institutions. It may be useful to create a diagram of the labor market ecosystem in your city. Figure 6 shows an example of the organizations involved in workforce development related to green infrastructure (broadly defined) in the San Francisco Bay Area. While this map is not exhaustive, it shows clearly is that the local building trades councils are the hubs, connecting agencies with local training providers. This ecosystem reflects the widespread city and agency focus on creating career-track employment for disadvantaged workers, and the building trades' efforts to partner with local training organizations to diversify their workforce. The map also shows that most of the organizations receiving state funds for green infrastructure implementation are siloed, disconnected from the broader workforce ecosystem.

This exercise does not need to be laborious or comprehensive. The map below was created in an afternoon, using PowerPoint, from information that was already known.

1. In a single slide, start by creating a box for every organization identified in Exercise 4B, using a color code for what role each organization plays.

2. If you know that there is an existing partnership between two boxes, or nodes, formalized by a memorandum of understanding (MOU) or other contractual agreement, draw a line connecting them. Reserve the connecting lines for formal institutional relationships; do not use them for informal working relationships or social networks.

3. Add to this map as you learn more through interviews and community engagement. It can be a living, working document. Do not be afraid that you are not capturing everything that is going on in your community. The purpose of this map is to capture what you and your immediate network know and also reveal what you do not yet know.

4. Determine what additional information you need before you can make an informed decision about a strategic workforce intervention.
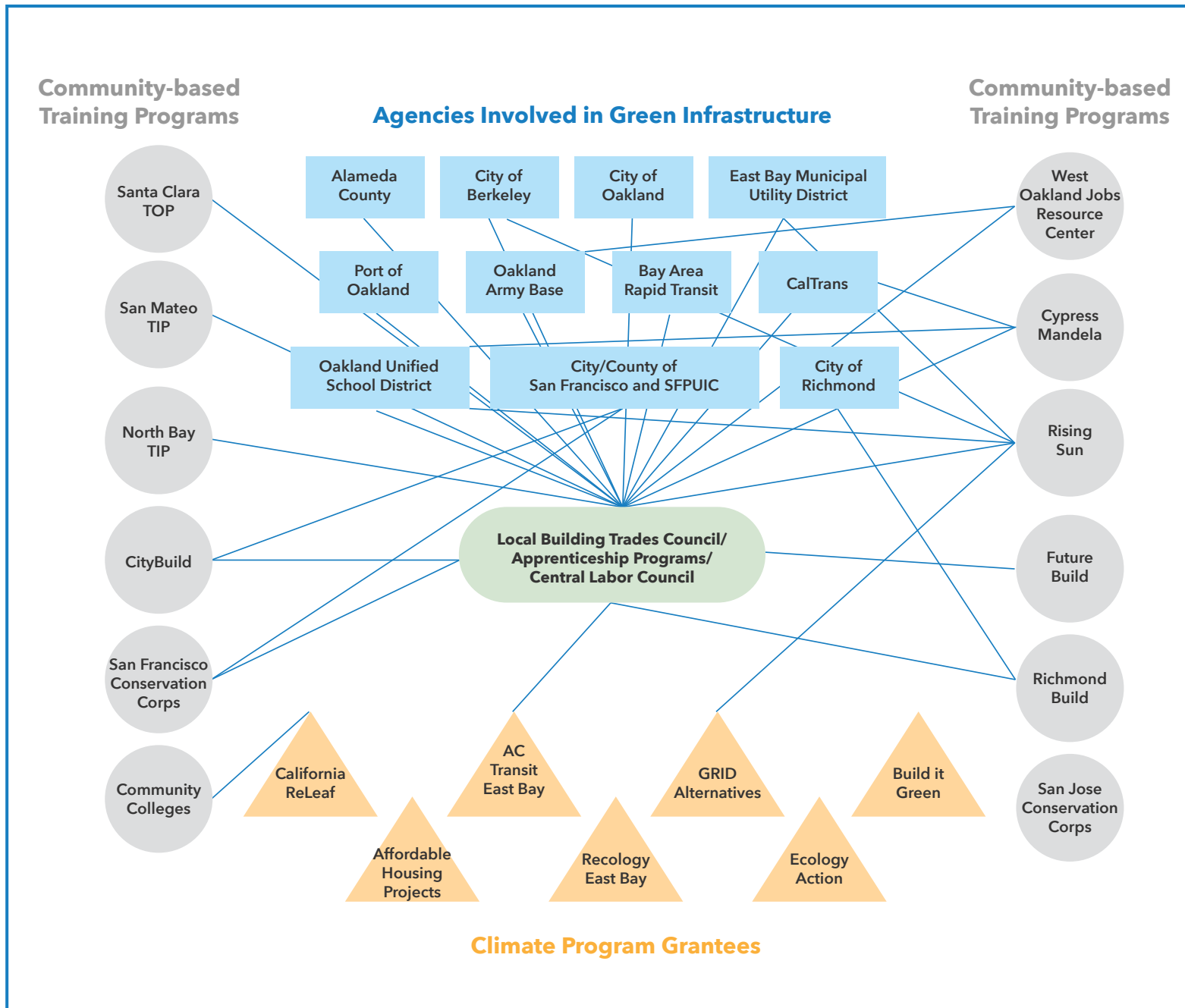
Figure 6. Workforce Ecosystem Map: Example

STEP 5

IDENTIFY POTENTIAL SOLUTIONS

There are multiple solutions to each problem. The purpose of Steps 1 to 4 is to help you decide on the right solution given your goals, challenges, partners, and research. Steps 1 to 4 are "no regrets" actions. No matter the solution you choose, ultimately the right solution will be the one that can be successfully implemented to address a key challenge and contribute to meeting your priority goals. The key to success will vary by city. It will depend on political will, relationships with partners in the community, relationships between local government agencies, financial resources, availability of staff, and other factors.

For example, if there are a lot of training providers and programs, but the workers trained have trouble getting good jobs, city efforts to drive up demand for trained workers will be more useful than creating another training program. Conversely, if there is a lot of clean energy and other construction work but too few skilled workers or not enough disadvantaged workers participating, a training-side intervention such as a pre-apprenticeship program could be most useful. Maybe there are enough training programs and demand for workers is strong, but the programs and potential employers are not effectively connected. In this case, the best role for a city might be as a connector between training providers and employers, soliciting input from employers on the skills they need or helping create pipelines to employment for training graduates.

Figure 7 shows the different partners (in boxes) in a workforce ecosystem. The blue and green arrows depict the value the partners provide each other. The extent to which this value is codified in partnership agreements will influence how effectively the ecosystem is supporting workers in their career trajectories. All relationships in the local workforce ecosystem have a demand-and-supply dynamic. For example, an apprenticeship program can generate demand for graduates from a community-based apprenticeship-readiness training program and provide a supply of skilled and trained workers for local employers. Solidifying these demand-and-supply relationships can improve outcomes for workers, employers, and the community as a whole.
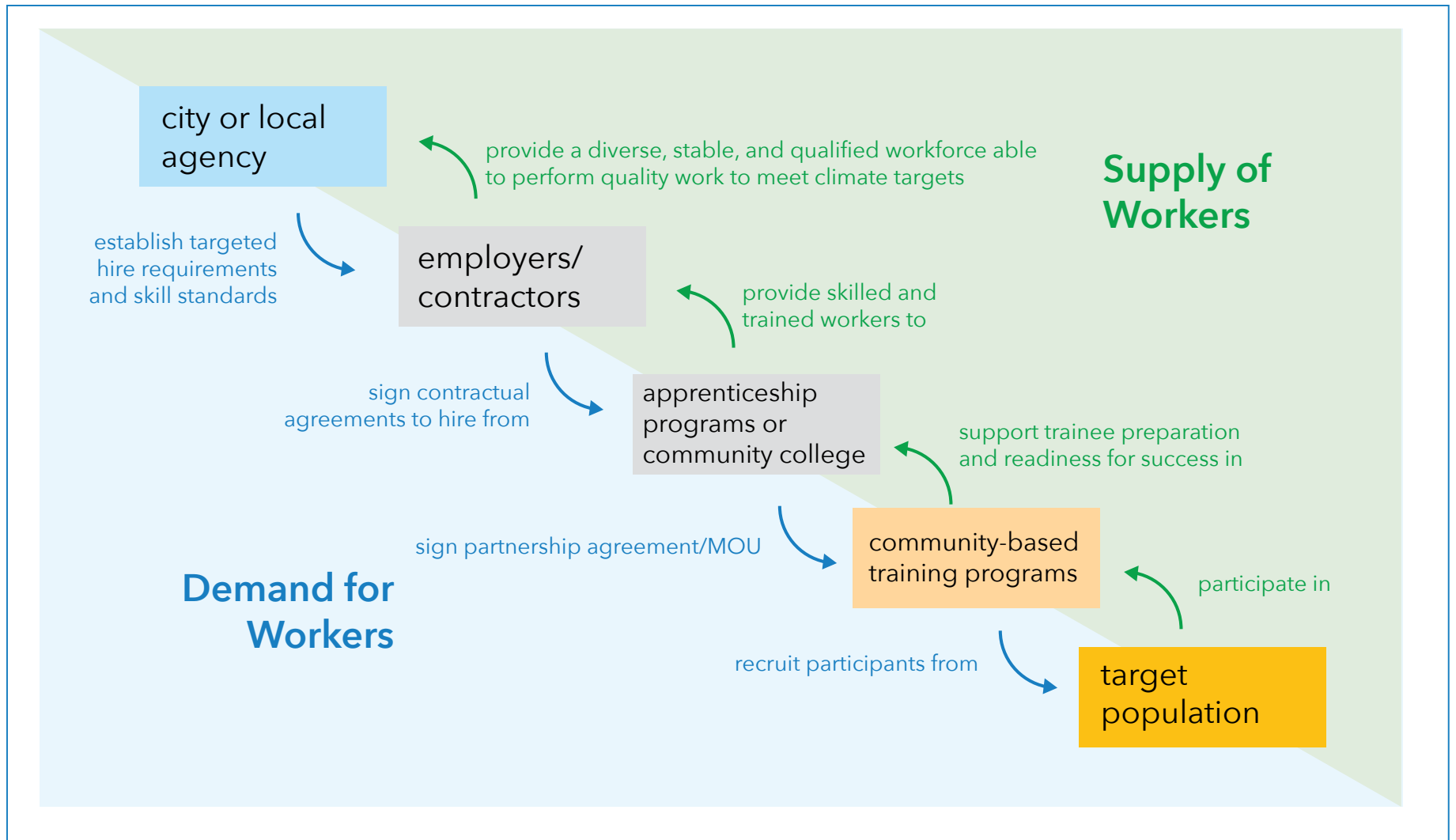
Figure 7. Relationships Among Partners in a Workforce Ecosystem

The diagram shows the following relationships:

Supply of Workers (green) and **Demand for Workers** (blue)

- city or local agency
- employers/contractors
- apprenticeship programs or community college
- community-based training programs
- target population

Demand (blue arrows):
- city or local agency → establish targeted hire requirements and skill standards → employers/contractors
- employers/contractors → sign contractual agreements to hire from → apprenticeship programs or community college
- apprenticeship programs or community college → sign partnership agreement/MOU → community-based training programs
- community-based training programs → recruit participants from → target population

Supply (green arrows):
- target population → participate in → community-based training programs
- community-based training programs → support trainee preparation and readiness for success in → apprenticeship programs or community college
- apprenticeship programs or community college → provide skilled and trained workers to → employers/contractors
- employers/contractors → provide a diverse, stable, and qualified workforce able to perform quality work to meet climate targets → city or local agency

EXERCISE 5A. IDENTIFY TARGETED SOLUTIONS

The list below provides potential solutions that a city can pursue. Circle or star those that seem most appropriate given the results you obtained with Exercises 1 to 4. For more information on potential solutions, see the **Developing a High-Road Workforce Plan** section of this guide. Many solutions will require modifications to existing statutes, requests for proposals (RFPs), or standard contracts. The guidance here is not legal advice.

1. **Procurement.** This is where a city has the greatest leverage in influencing workforce outcomes.

   a. Evaluate your city's RFPs and contracts with service providers related to the city's energy or climate goals. Do the requirements reflect the city's workforce goals?

   i. If you want to engage local workers, are there local hire requirements?

   ii. If you want to provide jobs for disadvantaged workers, are there targeted hire requirements?

   iii. If you want to engage WMBEs, are there supplier diversity criteria in procurement processes?

   iv. If you want to support skills building, are there skill standards?

   v. If you want to provide good, living-wage employment, are there living-wage or prevailing wage requirements?

   vi. Do the RFPs and contracts name specific partners to foster linkages in the local workforce ecosystem?

   vii. If the city is procuring electricity for its own operations, is there a set-aside for local renewable projects to stimulate local investment and job creation?

   b. Articulate goals and standards for job quality and job access in community benefits agreements (CBAs) or project labor agreements (PLAs) for large construction projects or investments. Specify apprenticeship targets for each trade as well as the apprentice-to-journeyperson ratio. Identify specific target populations.

   c. Engage local worker and contractor representatives in developing city-wide workforce and targeted hire standards for all construction projects.

   d. Employ best value contracting or performance-based contracting, rather than selecting for lowest cost.

   e. Support WMBEs through training and capacity building to enable them to competively bid on projects.

2. **Convening.** The city can convene local and regional partners to pursue a coordinated strategy.

   a. Serve as a connector between employers and training providers in your area, helping gather employer feedback to guide curriculum development and create pipelines to employment.

   b. Partner with the local workforce development board and economic development agency to get them thinking about the city's climate and clean energy future and ways they can support the goals.

   c. Coordinate work with other cities, utilities, and agencies in the region to assess labor market demand and coordinate strategies.

3. **Sticks and Carrots.** In climate-related ordinances, a city can specify workforce criteria as part of the regulatory process or as a requirement to qualify for incentives.

   a. Pass local ordinances, like reach codes, to regulate new construction or retrofits that specify skill and licensing criteria. More stringent skill and licensing standards work to drive up job quality and ensure worker and public safety.

   b. Develop a responsible contractor policy or contractor pre-qualification process requiring firms to demonstrate: 1) a history of excellent work performance as evidenced by client interviews; 2) adherence to labor and wage law; 3) no code violations; 4) Occupational Safety and Health Administration (OSHA) certification; 5) evidence of employing a skilled workforce; and 6) diversity, equity, and inclusion plan. Provide incentives (e.g., promotion, permit streamlining, etc.) for firms that meet the criteria.

   c. Aggregate small projects. For example, a city-wide push to upgrade electrical service and panels to make homes electric-ready could create the economies of scale necessary to attract firms able to meet more stringent workforce standards. Aggregated projects must include skill standards and local or targeted hire criteria to promote job quality and diversity and inclusion.

   d. Adopt strict quality assurance and quality control processes such that inspections evaluate the quality of work to ensure modeled energy savings are achieved, such as installation in accordance with manufacturer specifications. Rigorous inspections during and after installation require contractors to invest in a skilled workforce to perform to the level required.

   e. Adopt stronger and more widely applied building performance standards to stimulate more investment in deep building retrofits.

4. **High-Road Training Partnerships.** Sometimes there is a gap in the education and training ecosystem, which means that either certain skills will not be adequately incorporated into curricula or certain individuals will be unable to access career-track training opportunities. A city can partner with training providers and employers to fill these gaps. The document ACCC Workforce Best Practices: Green Job Readiness and Job Training Programs and accompanying Case Comparison provide more detail.

   a. Provide funding or supply resources to an existing training organization to develop a new program or cohort to serve a target population of disadvantaged workers. Training for workers with barriers to employment requires intensive case management, mentoring, and support services such as child care, transportation vouchers, and counseling, etc.

b.   Provide technical assistance to incorporate green skills into existing training programs (e.g., incorporating specific air-source heat pump or variable refrigerant flow [VRF] training to curriculum for certified apprenticeship or community college programs).

c.   Work with local utilities and agencies to create career pipeline training opportunities, so when participants complete the training, they automatically qualify for employment with the utility or agency (example: LA Utility Pre-Craft Training Program).

d.   Partner with local firms or nonprofits, such as solar installers, to provide on-the-job training opportunities for students enrolled in pre-apprenticeship or community college programs. It is important that participants receive job-readiness training and other support in addition to hands-on training (example: Rising Sun Opportunity Build).

e.   Solicit commitments from local employers and apprenticeship programs to agree to "first source" hiring from city-supported training or pre-apprenticeship programs. Such commitments help ensure job or training placement for students.

f.   Work with the local building trades council to develop new MC3 apprenticeship readiness programs that incorporate direct hire from these programs. MC3 stands for Multi-Craft Core Curriculum, which was developed by the Building Trades National Apprenticeship and Training Committee. It is a 120-hour curriculum designed to expose students to construction opportunities and prepare them with the basic skills needed to gain acceptance into and succeed in certified apprenticeship programs. Participants need support to pass apprenticeship exams, which are most difficult in the electrical, pipefitters, mechanical, and other energy-related trades.

Some apprenticeship programs have waived math or other requirements for MC3 program participants. There are hundreds of MC3 programs across the country, run by high schools, community colleges, community-based organizations, or the building trades themselves. Some serve exclusively women, opportunity youth, refugees, returning citizens, or other target populations. Many programs add onto the 120-hour curriculum to make it a longer, more robust program. Some even customize the program around climate or energy opportunities (example: Los Angeles Orange County Apprenticeship Readiness Programs).

g.   Establish upskilling training that offers stackable credentials for current workers to gain education and training in emerging technology (examples: EVITP, CALCTP, discussed below).

EXERCISE 5B. GATHER RELEVANT EXAMPLES

Use the **Developing a High-Road Workforce Plan** section of this guide to find examples and best practices from other cities. Identify those most relevant to your situation. Reach out to staff of other city projects or conduct more research to find out what worked or did not work and what those cities would have done differently.

STEP 6

DEVELOP AN EVALUATION PLAN

After identifying and clarifying 1) your city's motivation for engaging in clean energy workforce development, 2) the partners needed to envision and ultimately help you carry out your intervention, 3) the workforce gaps that your intervention seeks to fill, and 4) potential solutions, a critical next step is to envision what constitutes success. This vision for success should be based on your city's goals translated into concrete, attainable, and measurable metrics. Establishing too many metrics of success can bog down a program. Attempting to "be everything for everyone" can make it difficult for a program to focus on the metrics that matter most.
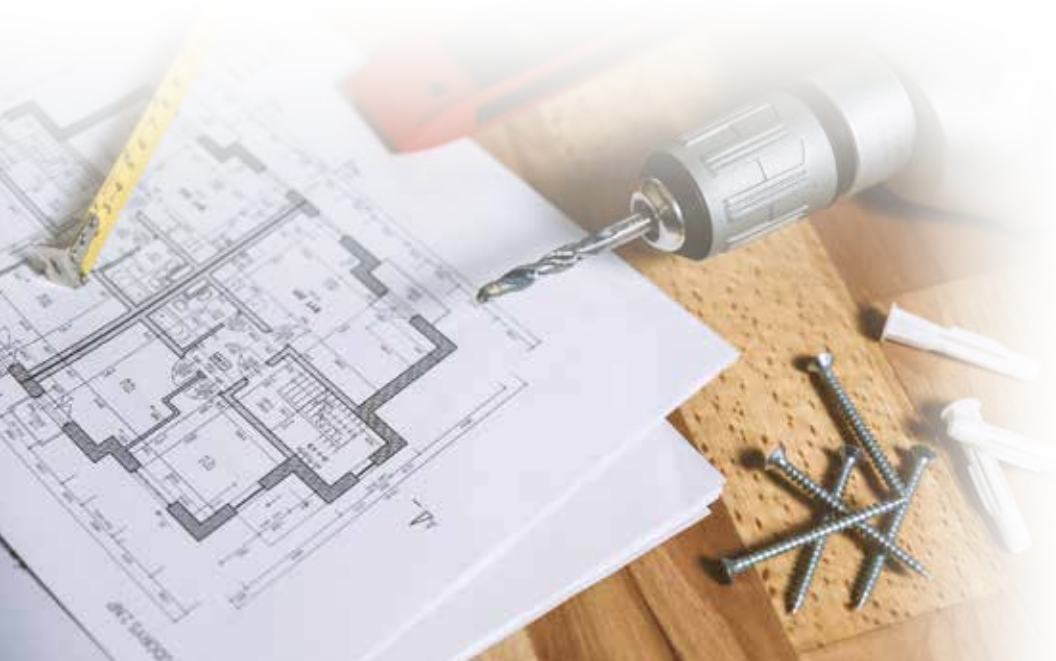
EXERCISE 6A. IDENTIFY METRICS OF SUCCESS

Metrics to evaluate success for high-road workforce programs should be tailored to local goals and designed to measure lasting returns for both workers and employers. These measures should derive from the first four steps of planning: setting goals, identifying challenges, identifying stakeholders, and identifying workforce gaps. Federal workforce performance metrics provide a standard set of measures for participant outcomes. Many cities have online labor monitoring and compliance systems for large public works projects that could be used to generate customized reports. LCPtracker is one such platform with a tool called Workforce Manager that tracks participants throughout a workforce system and promotes collaboration among community partners to facilitate worker advancement.[22] Sustainability staff may be able to coordinate with the city workforce department to track relevant metrics, such as those in the lists below.

Participant Metrics for Evaluating Training Programs

- Rate of training program completion

- Attainment of industry-recognized credentials (e.g., OSHA training, North American Board of Certified Energy [NABCEP], Multi-Craft Core Curriculum [MC3], and Electric Vehicle Infrastructure Training Program [EVITP] certification)

- Placement and retention in career-track jobs, certified apprenticeship programs, or continuing education

- Starting wages and benefits

- Short- and long-term economic outcomes

  - Increases in earnings, both initially and over time

  - Employment retention post-graduation at specific intervals: 60 days, six months, and one year

  - The quality of jobs students enter after graduating and how long they remain in those positions

- Demographic analysis of all participant outcomes by race, gender, ethnicity, geography, education, and other factors

Employer Metrics for Evaluating Workforce Programs

- Ability to attract and hire qualified workers

- Diversity of workforce

- Worker retention

- Capacity to take on new work

- Access to new business opportunities

- Degree of certainty with bidding

- Customer satisfaction

- Improved work processes

- Wages and benefits offered

Once you decide what metrics you want to use, you will be able to determine what information the city will need to gather through reporting or other means. Then, you will need to determine the best way to gather and monitor this information.

Evaluating workforce development interventions should use these metrics to determine whether specific efforts are helping further the city's goals for a clean energy workforce. Identifying the metrics in advance of designing and implementing an initiative will aid in its success.

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22   LCPtracker. *Workforce Manager*. LCPTracker website. Retrieved January 6, 2021 from https://lcptracker.com/lp/workforcemanager/demo.

EXERCISE 6B. ASSESS PROGRESS AND REALIGN SOLUTIONS

Cities should periodically revisit the planning steps to confirm that existing strategies still align with goals. In conducting this progress assessment, they should address the following questions:

1. Are the goals identified in Step 1 still the right goals? Are we trying to solve the right problem? Does our understanding of the problem need to be revised?

2. Have we identified new or previously unnoticed challenges that need to be incorporated into our analysis from Step 2?

3. Do we have the right partners at the table? Do they understand their role and are they engaged? Are there other partners or stakeholders that we should bring in?

4. Have the gaps identified in Step 4 changed?

5. How have the workforce development institutions performed compared with our assessments in Step 4?

6. Do resources need to be redistributed to support the most effective programs and strategies for implementing the solutions identified in Step 5?