



# Addressing Transportation Construction Workforce Shortages

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## Abstract

- Hiring and recruitment behind pace for DOT construction
- Successful workforce development practices begin with detailed assessment (internal and external)
- There is a need to be more strategic in personnel process (e.g., targeted recruitment)
- Consider factors that attract next generation of workers
- Importance of leveraging available resources to meet workforce needs
- In poor economic times, need increases for more sophisticated techniques to filter through larger numbers of applicants
- ICF provides a framework to guide the selection of appropriate workforce solutions

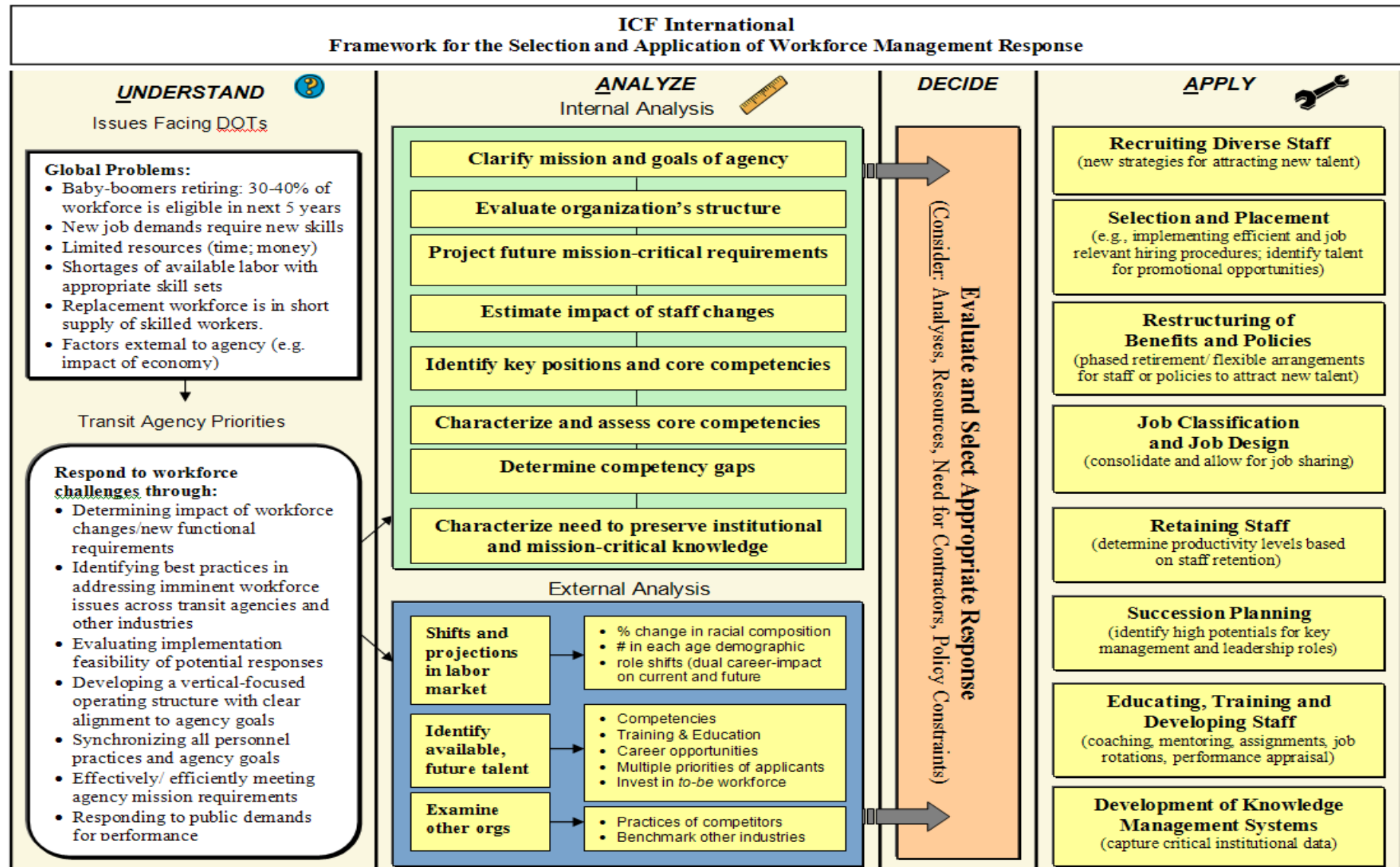
# Background

- Construction will be one of top 10 employment sources in 2012 (Dept of Labor, 2004)
- Executive Branch (2008) identifies construction as highest job growth
- BLS predicts total construction employment will increase to over 1 million jobs (Berman, 2004)
- Despite good pay there is a labor shortage (Jahren, 2006)
- Baby boomer retirement is imminent yet less replacement labor available
- As of Dec 2008, unemployment rate was 7.2 percent, a 16-year high, and over 2.6 million jobs lost (Associated Press, January 23, 2009).
- The President's stimulus: up spending on public works projects.
- Senate's \$827 billion stimulus package: \$46 billion for transportation projects, including \$27 billion for highway and bridge construction and repair and \$11.5 billion for mass transit and rail projects (Washington Post, February 8, 2009)

# Challenge

- Technologically-savvy jobs attract more attention than manual labor jobs
- Negative Public Image
  - Not perceived as career, etc.
- Perceived lack of skill transfer
- Lack of youth
- Structure of work may not appeal to non-traditional labor pools
- Lack of information
  - Positives are not reaching the candidate pool

# Workforce development framework



# UNDERSTAND

- First and most important step
  - The problem must be clearly identified before it can be resolved
  
- Two elements of the “Understand” component of the model:
  - 1: Articulating the issues facing the agency
  - 2: Outlining high-level initiatives to address issues
  
- Agency must consider the context within which it operates.
  - 1: Issues faced
    - Aging workforce- difficult to find those skills in new labor workforce
    - Labor overabundance with unique mix of skill sets
  - 2: High-level initiatives
    - Identify new requirements and what will be needed to meet them
    - Synchronize all personnel practices and goals

# ANALYZE



- Skipping this step can often can be credited for failure of solutions
- The two elements of this component:
  - **Internal analysis:**
    - Assessment of agency’s direction- How will needs change in the future?
    - Human capabilities- What competencies are needed?
    - Existing resources- What talent exists?; How are dollars allocated?
    - Future workforce needs- What is the timing of these changes?
    - Remaining gaps- How should needs be prioritized?
  - **External analysis:**
    - Labor availability- What does the labor market “look like”?; Where in the pipeline are there breakdowns?
    - Economic conditions- How do the workforce development strategies need to adjust?
    - Competitor agencies- Why are workers going there?
  - Example projects: *FHWA DOT Mapping; TWC “The Missing Link”*

## DECIDE

- Reconciliation of Internal and External Analysis
  - What do they tell us?
- Select and prioritize the appropriate workforce management response (e.g., recruitment, development or some combination)
- Prior to selecting response, assess resources
  - Are more resources needed to implement response? (e.g., contractors)
- Consider how external governmental regulations or policies might impact implementation

# APPLY

- The workforce management solution or combination of solutions implemented based on internal & external analysis.
- Without proper analysis, the Apply response selected may lead to wasting resources or worse yet, lead the agency in direction not aligned with its values, mission and strategy.
- A thorough analysis will help the organization select the best combination of responses from this component.
- Selection of response depends on prioritization of needs and availability of resources (e.g., \$).

# APPLY

- **Recruiting diverse staff**
  - Example project: *Florida DOT: Addressing Entry-Level Transportation Construction Workforce Shortages\**
- **Selection and placement**
  - Example project: *ALDOT and State Personnel Dept*
- **Adopting or Restructuring of benefits and policies**
  - Example project: *U.S. Department of Transportation Work-Life Advisor*
- **Job classification and job design**
- **Educating, training and developing staff**
- **Retaining staff**
  - Example project: *TCRP F-14 Addressing Critical Shortfalls: Recruitment, Development, and Retention of High-Quality Managers for Public Transportation Systems*
- **Succession planning**
- **Developing knowledge management systems**

## Highlights from FDOT Project

- DOT wanted a study of:
  - Industry needs and issues
  - Factors that affect job choice for entry-level jobs
  - Potential solutions for FDOT contractors
- ICF:
  - 1. reviewed current literature
  - 2. conducted baseline assessment-interviews & survey (FDOT contractors)
  - 3. identified best practices of other DOTs and other construction (e.g., commercial and residential builders)
  - 4. surveyed potential applicant pool
  - 5. provided recommendations.

# Summary of Literature Review Findings: FDOT

- Review produced eight factors in three broad categories:
  1. Job Characteristics
  2. Personal Characteristics
  3. Contextual Influences

# Job Characteristics Findings

Ranked by importance to job choice:

- **Type of Work and Work Setting**  
(e.g., working outdoors v. indoors; working alone)
- **Flexibility and Autonomy**  
(e.g., desire for autonomy, flexibility, personal growth)
- **Financial Compensation and Benefits**  
(e.g., salary, vacation, maternal/paternal leave policies)
- **Advancement Potential**  
(e.g., rate and frequency of promotions)
- **Perceptions of the Recruitment Process**  
(e.g., did they like the recruiter)

# Personal Characteristics Findings

Ranked by importance to job choice:

- Level of Similarity/Fit
  - (e.g., match between values, abilities, and interests, and the job/organization)-relates to Attraction-Selection-Attrition
  - strongest predictors: interests, work values, self-efficacy, and GPA
- Interest in Additional Training/ Education
  - jobs that require more training and education seen as more prestigious
  - additional Preparation beyond high school is perceived to be strongly tied to financial compensation, social prestige, and advancement potential

# Contextual Influences Findings

- 18 articles identified
- Significant people in life (e.g., parents)
- Race/culture
  - For example, Asian American students were more likely to have considered Investigative occupations with high social prestige and less likely to have considered Enterprising and Conventional occupations than Caucasian students (Leung et al., 1994).

## Baseline Assessment Results

- Largest Workforce Challenge: 21.5% attracting unskilled, 21.2% retaining current workforce, 21.1% competing for labor
- Causes of Workforce Challenge: Image, environment, hurricanes, age of workforce, employment lag-time, wage wars & popularity of other construction; legal status
- Demographics: 30 is the average age, 60% ethnic minority
- Nature of Job:
  - Opportunity to develop skills and increase wages quickly
  - Over 30% working outdoors
- Method of Attracting Candidates: Wages (64.7%), Benefits (66.7%), Job Security (62.7%)
- Other current practices: Career Fairs, Advertise stability and advancement; Emphasize hands-on-work, pride, reputation; Create career paths; Provide mentoring; Vocational schools; Involve associations
- Future solutions most likely to work (ranked): 1. Change the image, 2. Raise pay, 3. Improve supervisory skills, 4. More development opportunities, 5. Offer better training

## Job Factors Survey Results

- Importance of Factor in Job Choice (means): Pay/Benefits has the most influence (4.1), Advance Potential (4.0), Job autonomy (3.3), Family Support (3.1), Job Fit (3.1)
- Evaluating Career (means): Can make money right away (1.4), I could advance (1.3), I would get good pay (1.0), My family would support my decision (1.0)
- Consider pursuing a career in this field: No 86%
- Why not? 30% no interest, 19.6% interested in another career, 13% physical labor, 8.7% outdoor work, 8.7% poor financial comp, 8.7% college, 6.5% poor image (due to lack of info); females-family support concerns

# Synthesis & Recommendations

- Job Choice Factors
  - **Type of Work & Work Setting-** parts of job unchangeable
  - **Flexibility/Autonomy-** consider job redesign
  - **Comp & Benefits-** remain competitive; address needs
    - (\$13 high in FL vs. \$16 non-union avg low in other states)
  - **Perception of recruiting process-** hire effective recruiters/firms
  - **Advancement Potential-** quick track; profession v. job
  - **Similarity/Fit-** emphasize intrinsic value of work; use \$ wisely
  - **Training & Education-** career paths that map to T & E
  - **Contextual** –market to influencers; improve image thru information; encourage diversity–bilingual, family-friendly

# Synthesis & Recommendations

- Recommendations
  - Improve Branding
  - Develop a Recruiters Toolkit
  - Improve Outreach
  - Additional Recommendation: Improve Management of Existing Workforce

# Synthesis & Recommendations

- Improve Branding
  - Logos and Taglines: Target influencers (e.g., “Army of One”)
  - Recruiting Website: Industry specific, real stories (e.g., [www.constructmyfuture.com](http://www.constructmyfuture.com); Ctr for Energy Workforce)
  - Ad Clips: for MP3s, movies (e.g., U.S. National Guard; YouTube)
  - Recruiting Billboards/Posters – place at job site (e.g., Florida Construction Co.)
  - Female/Bilingual Recruiters – use female & minority images (Ex. Tech)
  - Sponsorship – NASCAR, Sports Events (e.g., UPS)
  - Online ads- Google AdWords, Facebook.com, ESPN.com
  - Booths/kiosks at concerts

# Synthesis & Recommendations

- Develop Recruiters Toolkit – Everyone Recruits
  - One-Page Flyers – unique and tailored to target populations
  - Strategic Placement – jobs on Youtube, Facebook, Myspace, 7 Eleven, Coffee Shops (Ex. Political Candidates)
  - Brochures/fact sheets – illustrated to show that target audiences will “fit in”, RJP (Ex. [www.discovernursing.com](http://www.discovernursing.com))
  - Career Track Demos – show average promotion time and potential salary of every level in organization (LOGIC Project)
  - Recruiting Training – train managers in a standardized & objective method of evaluating “walk-ons”, support them with a website
  - Phone Recruiting – advertise a 1-800 number that links candidates to job opportunities (Oregon DOT)

# Synthesis & Recommendations

- Improve Outreach
  - Teachers Guide: career exploration tasks, Construction Industry Alberta Canada
  - Construction Career Days: 22 states, need to increase participation and representation
  - Internship Programs: Arkansas, CDOT & INROADS (nat. utilities internships), USDOT’s “Diverse Groups” Internship Program
  - Partnerships: Schools (CA), Military Recruiters (FDOT), Job-Reentry (TX), Ag Groups like 4-H, Juvenile Mentoring Programs, On-Campus (ConnDoT), Alum writes article in HS Newspaper, Elementary School (CA & DE).

## Synthesis & Recommendations

- Additional Recommendation: Improve Management of Existing Workforce
  - Flexibility & Autonomy: Job Sharing, Work Planning, Improve Work Environment
  - Strategic & Ongoing: Target the ideal candidate, Annual Recruiting Process (LA Oil Rigs)
  - Progressive Training: Tuition Reimbursement (CA DOT), Corporate Colleges (IBM, Level 3)
  - Career Paths: VA – Trans Construction Managers, MO – Corrections Officers, FDOT – Construction Qual. Training Program, Nat. Center for Construction Ed. and FMI developing career maps for construction industry

## Synthesis & Recommendations

- Additional Recommendation: Improve Management of Existing Workforce
  - Job Rotation: U.S. CBP allows high potential employees to rotate
  - Traveling Recruiters: FDOC recruiters travel to job site
  - Outplacement Services: career counseling, transition training, resume writing assistance, access to office equipment, job leads, exit interviews (NASA)
  - Recruiters: Employ a mix of HR & Former Construction (FDOC)

## Food for Thought:

**Q: Which of the recommendations from the FDOT project does your agency need to consider?**

**Q: Before diving into recommendations, in what ways does your agency need to address the Understand, Analyze, Decide, and Apply components of the model? What are some past lessons learned?  
 (“one size does not fit all”)**

**Q: What is the greatest workforce challenge faced by your agency right now?**