



# Alignment of Postsecondary Education and Employment:

## Findings and Recommendations

### Legislative Program Review & Investigations Committee



December 17, 2009

# Presentation Overview

- Green Collar Jobs
- Nursing Field
- Recommendations to Address Barriers to Alignment of Postsecondary Education and Employment

# The Four D's of the Green Collar Field

- **Driving** the green movement
- **Defining** green collar jobs
- **Developing** the green collar field & future job opportunities
- **Delivering** education & training for green collar jobs

# What is *driving* the green movement?

- ARRA/U.S. Government
- Governor/Executive Order No. 23
- CT Legislature
- Private Sector

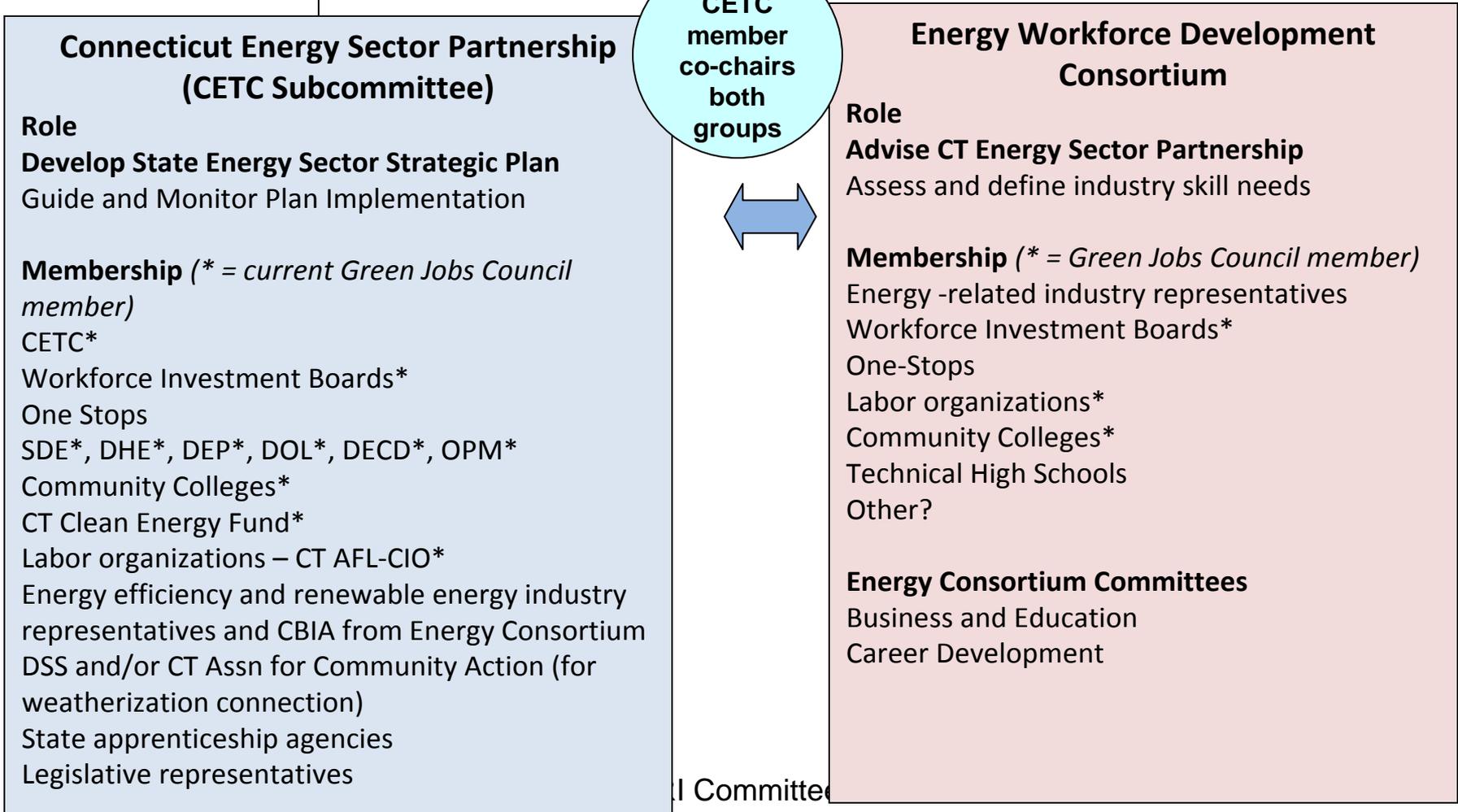


# ARRA/U.S. Government is driving the green movement

- Connecticut has already received \$120 million in ARRA grants
- Supporting training in:
  - New green building code
  - Solar energy technologies
  - Precision manufacturing
  - Weatherization



**Governor's Executive Order No. 23: Connecticut Energy Sector  
Partnership Structure  
(formerly Connecticut Green Collar Jobs Council)**



l Committee

# Recent CT statutory changes are driving the green movement

Connecticut is the first state with a required green building code for public and private buildings



# How are green collar jobs being *defined*?

- U.S. DOL
- CT DOL/DECD
- DCP Licensing
- National Certifying Organizations

## Green collar jobs can fall into one of three categories:

- **Green increased demand** occupations  
(e.g., chemical engineers)
- **Green enhanced skills** occupations  
(e.g., plumbers)
- **Green new and emerging** occupations  
(e.g., carbon trading analysts)

## **Table I-5. Energy Efficiency and Renewable Energy Technologies**

### **Energy Efficiency Technologies**

- High efficiency heating, ventilation, and air conditioning
- Efficient lighting
- Efficient home appliances
- Water heating
- Pumps, motors, and drives
- Building envelope

### **Renewable Energy Technologies**

- Fuel cells
- Solar (PV and solar hot water)
- Wind
- Geothermal
- Hydrogen
- Power grid infrastructure

# Who is *developing* the green collar field and where will the job opportunities be?

- CT DOL, WIBS
- DSS, CAP Agencies
- CETC/OWC
- CBIA
- Private green companies



*Regardless of the methodology used to define green collar jobs, all show a future increase in green jobs.*

<b>Table I-12. Growth in Connecticut's Green Occupations</b>			
<b>Occupation</b>	<b>Estimated # Employed in 2006</b>	<b>Projected # Employed in 2016</b>	<b>Demand</b>
Hydrologist	97	121	↑25%
Geoscientist	174	209	↑20%
Environmental Engineer	747	891	↑19%
Environ. Science & Protection Tech.	392	458	↑17%
Environmental Engineering Technician	216	248	↑15%
Natural Sciences Manager	933	1,062	↑14%
Water & Liquid Waste Treatment Plant & System Operator	856	955	↑12%
Environ. Scientist & Specialist	685	761	↑11%
Nuclear Power Reactor Operator	108	113	↑5%
<b>Total</b>	<b>5,493</b>	<b>6,148</b>	<b>↑12%</b>

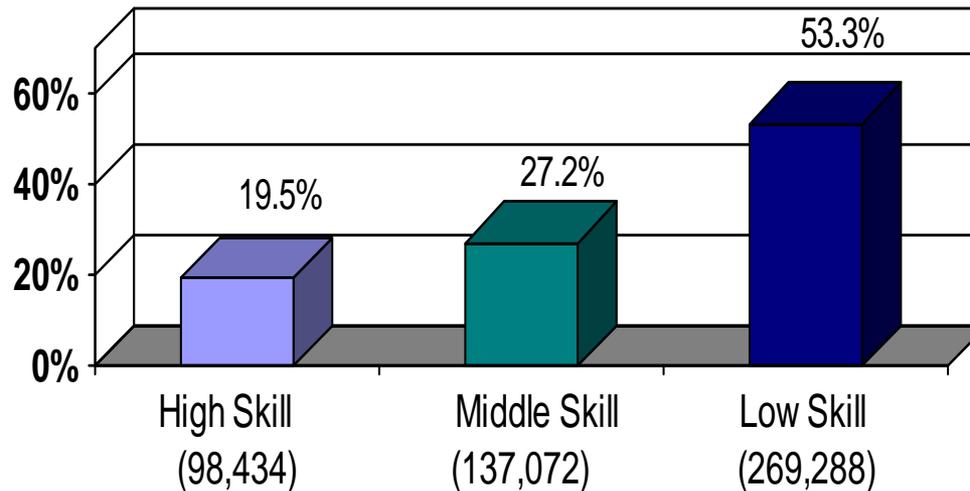
# Where is green collar job education and training being *delivered*?

- Higher Education
- Technical High Schools
- Connecticut Proprietary Schools

# Level of education required by green collar jobs

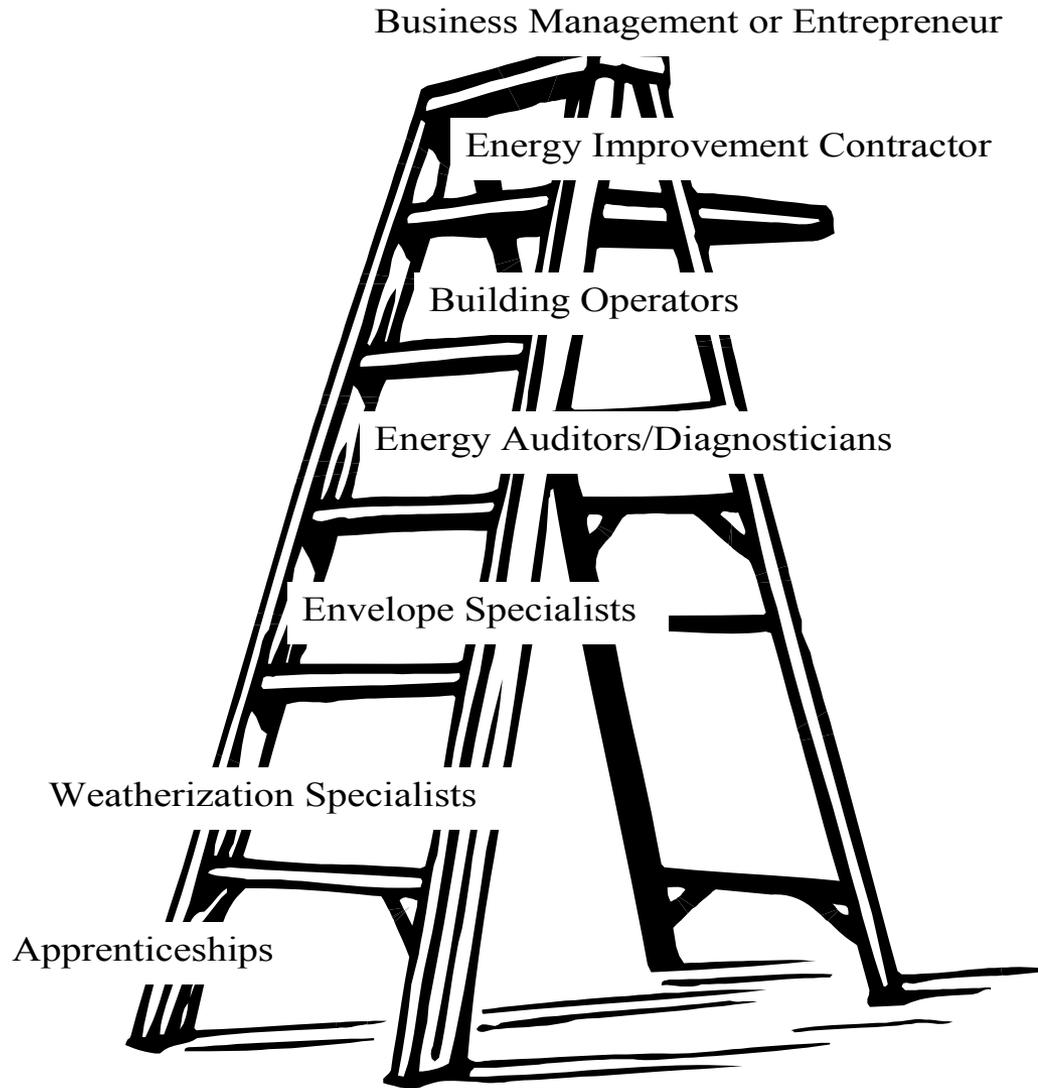
Over half of green collar jobs may not require any postsecondary education

Figure I-3. Educational and Skill Level of Green Collar Jobs



Source: CT DOL Occupations in a Green Industry Report, April 2009.

Figure III- .Potential Green Collar Career Ladder



Source: Building a Green Collar Workforce, The Institute for Sustainable Energy at Eastern Connecticut State University.

# Higher ed is helping prepare the green workforce in several ways:

1. Offering majors or minors in directly related fields
2. Offering majors or minors associated with the green movement
3. Establishing centers or institutes
4. Offering certificates
5. Offering individual courses

# Possible barrier related to elementary and secondary school

*Lack of awareness or understanding of what green collar jobs are*

**Wherever possible, explain green collar jobs using the U.S. Department of Labor taxonomy and EE/RE categorization (Rec. #1)**

## Possible barriers related to postsecondary education institutions

*Lack of uniformity in naming of green certificate programs*

**The Connecticut Community College System should implement uniform naming of green certificate programs across all member colleges (Rec. #2)**

# Possible barriers related to postsecondary education institutions

*No central repository for the many green initiatives emerging across higher education*

**The Connecticut Employment and Training Commission and the Connecticut Energy Sector Partnership should develop repository of green efforts (Rec. #3)**

# Possible barriers related to current economic challenges

*Few resources apart from ARRA stimulus funds to purchase the expensive equipment required to train students*

**Educational systems should develop agreements to share equipment (Rec #4)**

## Possible barriers related to current economic challenges

*Lack of career ladders/lattices to move individuals out of entry-level green collar jobs that are dependent on temporary ARRA funding*

**Connecticut postsecondary education institutions and state workforce development agencies should create career ladders (Rec. #5)**

## Possible barriers related to state agency organization, programs, and policies

*Lack of awareness by colleges of green efforts occurring within other colleges in different higher education systems*

**The Departments of Higher Education and Education should prepare an annual cross-system list of green offerings and of inventory of green-related equipment. (Rec. #6)**

## Possible barriers related to state agency organization, programs, and policies

*Sometimes institutions are unaware of green efforts occurring within colleges in different higher education systems*

**Staff from Center for Clean Energy and the Institute for Sustainable Energy should meet to discuss possible collaborations on green initiatives.  
(Rec. #7)**

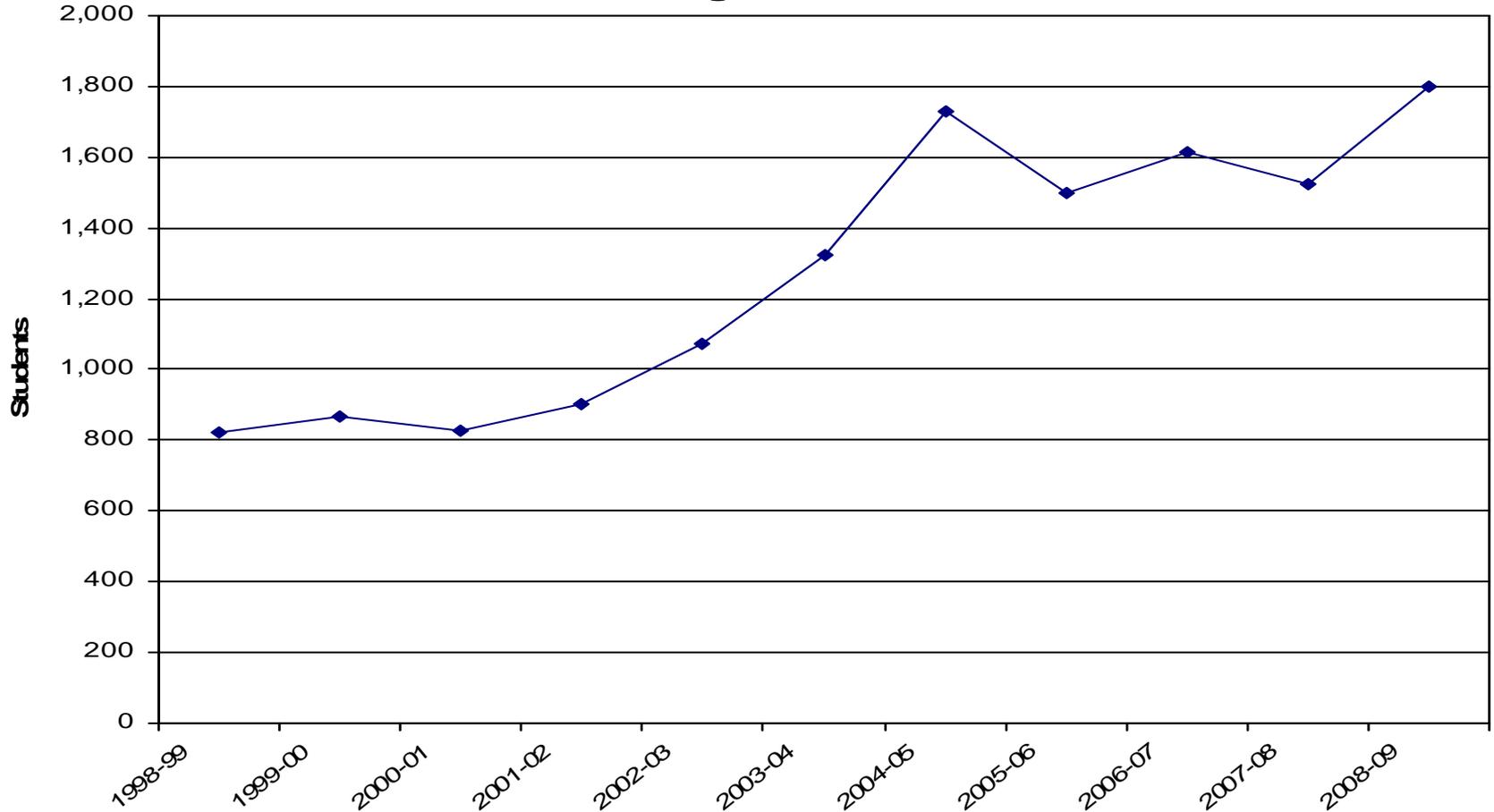
# Alignment of Nursing Programs and Employment

- Serious nursing shortage predicted in late 1990s
- As a result, multiple strategies were adopted to increase the number of postsecondary graduates of nursing programs
- Very successful in increasing supply and ideas could be applied in other workforce shortage areas

# Registered Nurse (RN) Programs

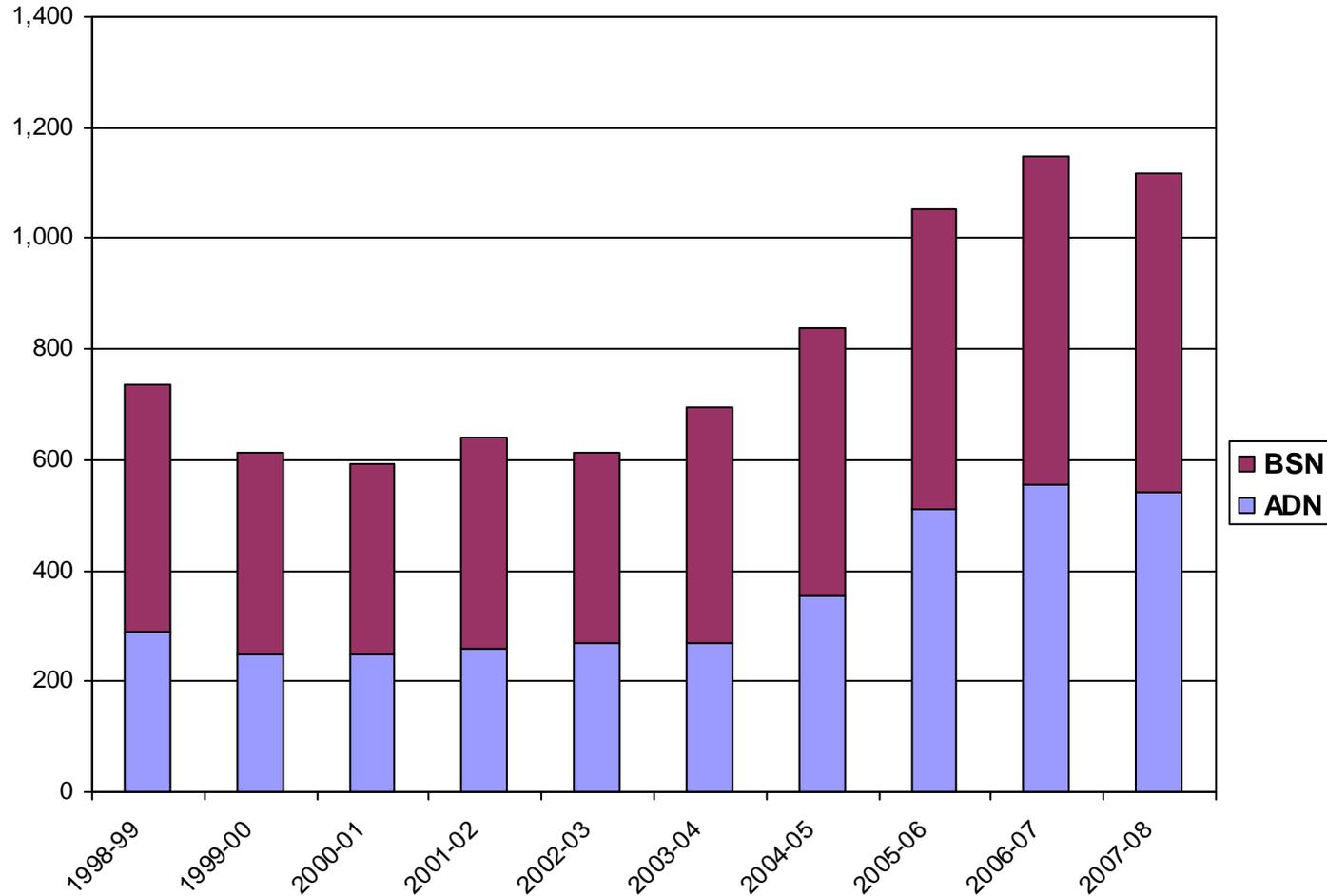
- Five education paths to become RN:
  - Two year diploma program (1 hospital)
  - Two year associate degree programs
  - Four year bachelor's degree programs
  - Accelerated bachelor's degree programs for individuals who have a bachelor's degree in another field
  - Master of Science in Nursing

## Admissions to Entry-Level RN Postsecondary Programs



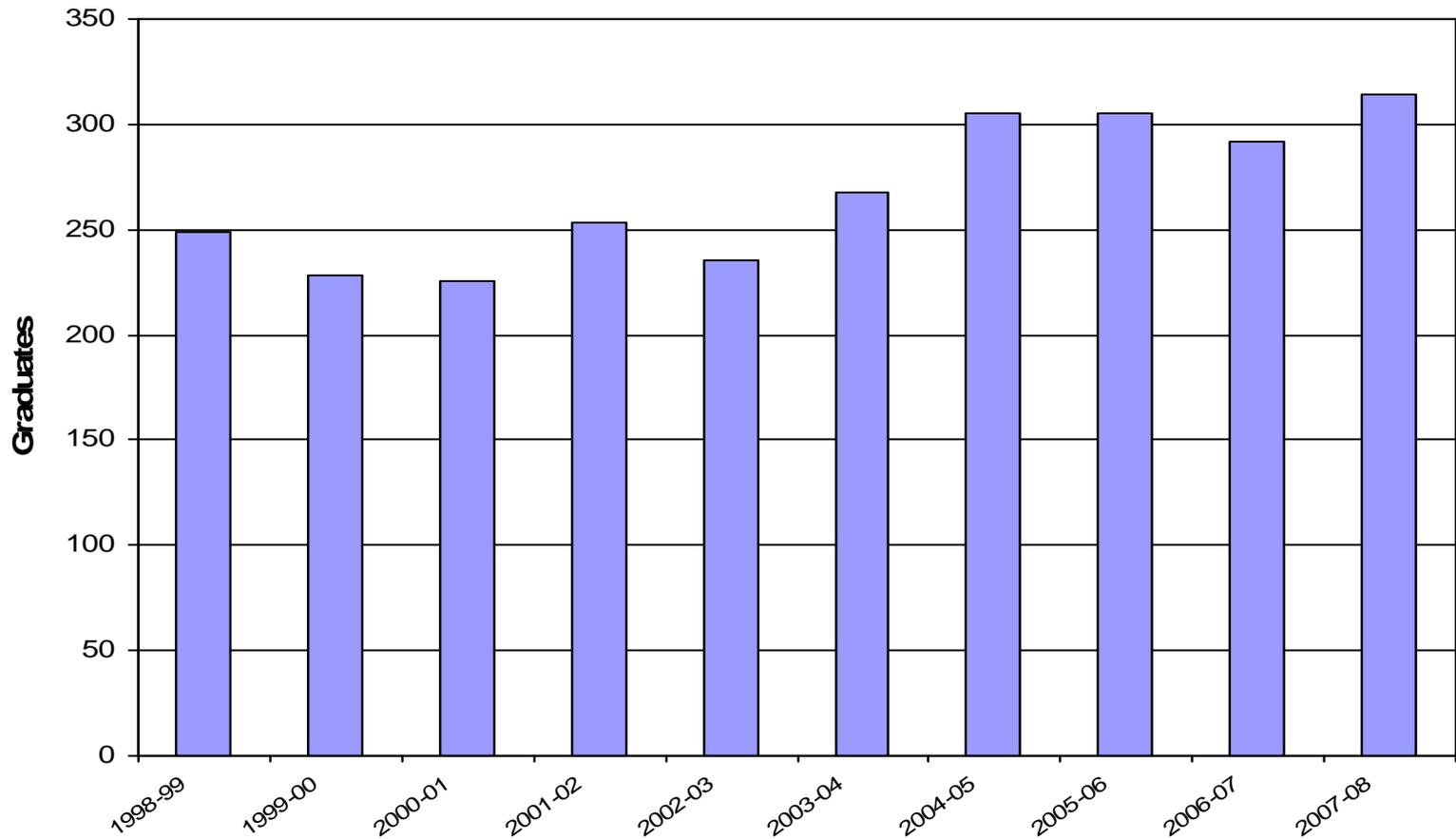
Source: Connecticut Board of Examiners for Nursing

### ADN and BSN Degrees Conferred\*



\* includes Uconn, which awards a B.S. degree

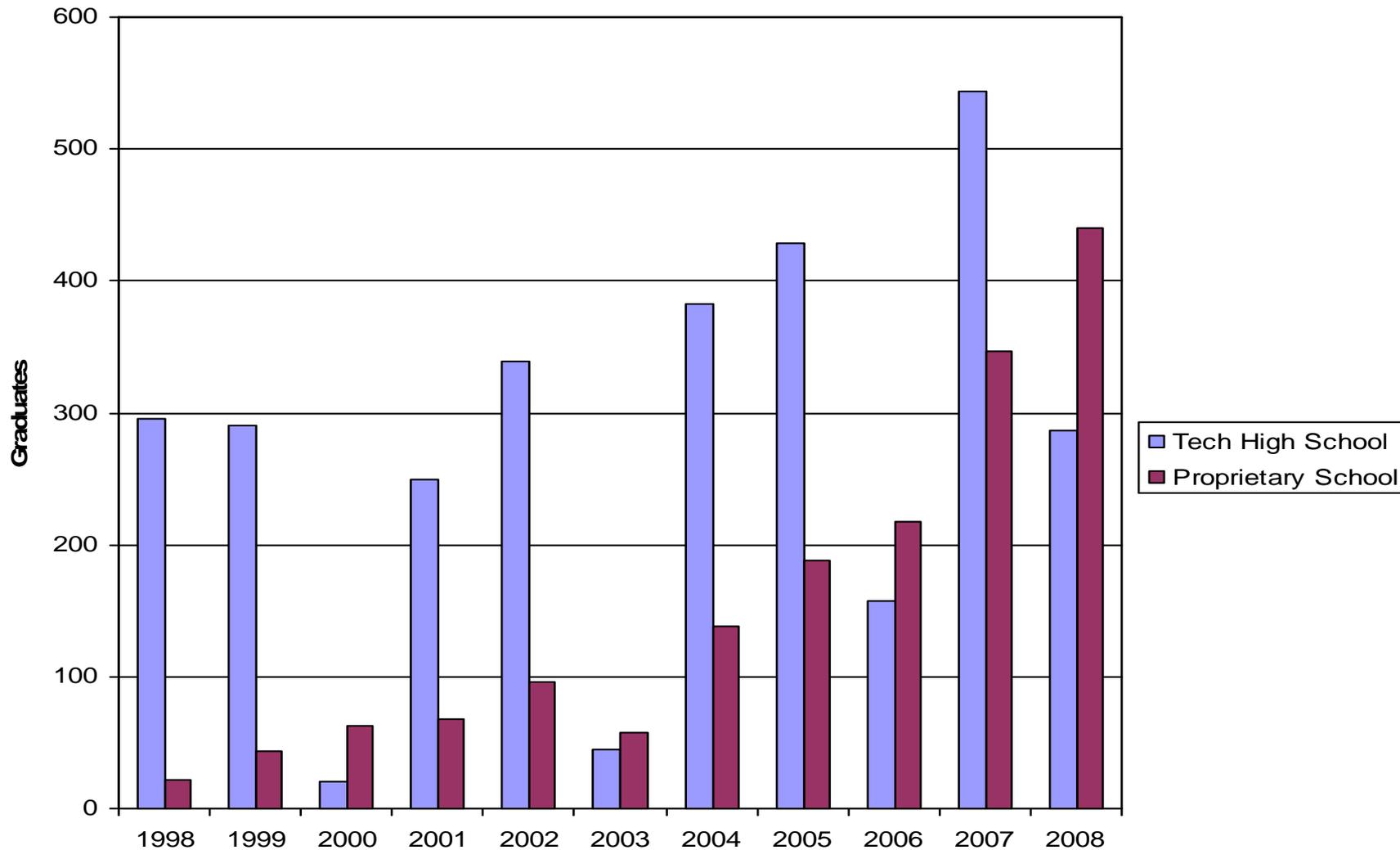
## Master and Doctorate Nursing Degrees Conferred



# LPN Programs

- LPNs have a narrower scope of practice than RNs
- Until recently, offered by 10 Technical High Schools through Adult Education Division
- Three proprietary schools offer programs at multiple locations

# Graduates Passing LPN Examination



Source Connecticut Board of Examiners for Nursing

# Successful Strategies

- Public advertising campaigns by colleges and universities to increase awareness of certain occupations
- Initiatives at the high school level to interest students in nursing and other health careers
- Funding for colleges and universities to initiate new or expand existing programs
- Establishment of career ladders and accelerated programs for individuals with other types of degrees

# Strategies (cont'd)

- Funding for tuition assistance, student advising, and targeted tutoring to increase student retention rates
- Scholarships and loan forgiveness programs
- Collaborative partnerships between colleges and universities and hospitals to provide faculty, scholarship funding, and internship opportunities for students
- Creation of the Allied Health Workforce Policy Board within OWC for members to communicate ideas, share strategies and propose solutions as a unified body.

# Is there a Shortage?

- DPH licenses RNs and LPNs
- In 2006
  - 52,326 licensed RNs
  - 11,844 licensed LPNs
- Data does not capture:
  - Employment status
  - Age
- Online license renewal system just begun

# Is there a Shortage?

- DOL estimates # employed in 2006
  - 32,840 RNs
  - 8,020 LPNs
- DOL projects annual need through 2016:
  - 1,114 RNs
  - 324 LPNs
- Based on data, appears to be adequate supply of RNs, oversupply of LPNs
- Many unknown factors impact supply/demand including
  - cyclical nature of shortages
  - average age of nurses believed to be high
  - increasing disability trends
  - health care reform

# Possible Barriers to Alignment

- Elementary and Secondary School Related
- Postsecondary Education Related
- Projecting Job Demand
- State Agency Organization, Programs, and Policies

# Elementary and Secondary School Related:

*Strengthen high school graduation standards*

**Connecticut should pass legislation reforming Connecticut high school graduation requirements (Rec. #8)**

# Elementary and Secondary School Related:

*Increase efforts in high school to reduce the need for remediation in college*

**All Connecticut high school juniors should be encouraged to take the Accuplacer or comparable test  
(Rec. #9)**

## Postsecondary Education Related:

*Use computer assisted tools to build skills or brush up on rusty skills*

**Promote computer-assisted preparation programs at all the community colleges (Rec. #10)**

## Postsecondary Education Related:

*Contextual or embedded remedial material within an applicable setting of interest to the student may be more successful than a stand-alone remedial or developmental course*

**The Connecticut Community College System should consider replacing stand-alone remedial courses with introductory credit courses that integrate remedial skills instruction. (Rec. #11)**

## Postsecondary Education Related:

*Use peer tutors and implement an early warning system when students appear to be struggling*

**Connecticut colleges should implement no- or low-cost initiatives to improve graduation rates (Rec. #12)**

# Projecting Job Demand:

*Consider using job-vacancy rate data when making short-term workforce demand projections*

**The State Department of Labor should continue to pursue development and use of an electronic job vacancy methodology (Rec. #13)**

# Projecting Job Demand:

*While teacher shortage information is known to school districts, there is no similar letter sent to Connecticut public and independent colleges with teacher preparatory programs.*

**The State Department of Education should distribute to teacher shortage area information to all Connecticut teacher preparatory programs (Rec. #14)**

# Projecting Job Demand:

*Expose many more high school and college teachers, counselors, and administrators to CT DOL job demand information by changing to an electronic report distribution*

**The State Department of Labor should electronically mail the “Soaring to New Heights” report to all state high schools and colleges (Rec. #15)**

# Projecting Job Demand:

*Ask high school guidance counselors, admission officers, and college career counselors what information and in what format would be most helpful to students in making career decisions*

**The State Department of Labor should survey school personnel to determine most useful information and format (Rec. #16)**

# Recommendations related to State Agency Organization, Programs, and Policies

- Strengthening the coordinating role of BGHE through strategic planning
- Requiring strategies for sub-par performance be included in an already-produced annual Accountability Report
- Establishing a pilot program that gives discretionary power to the DHE commissioner to reward achievement of goals
- Establishing stronger career pathways to competitive sector-based employers
- Examine whether adult education programs at technical high schools should be moved to the Community College System

# Strategic Planning for Higher Education

- No statewide strategic plan exists for higher education system
- Strategic plan should provide blueprint for linking goals and responsibilities of the individual constituent units
- Two statutory requirements exist:
  - Master plan to be developed by BGHE
  - Blue Ribbon Task Force to develop strategic plan and monitor implementation
  - Neither has been implemented
  - Core goals for plan to address identified under each statute
- A third set of statutory goals to be addressed are identified in the already required accountable report
  - This report already contains many elements of a strategic plan

# Strategic Planning

- **Repeal Blue Ribbon Task Force and assign responsibilities to BGHE**
- **Blend statutory goals into single set**
- **Require collaborative approach**
- **Report biennially on implementation status of plan (Rec. #17)**

# Accountability Report

- Legislature required constituent units and BGHE to annually report on meeting statutory goals
  - Higher Education Coordinating Council developed performance indicators and benchmarks for BGHE approval
- Data provided annually to DHE commissioner
- No requirement to propose strategies to address sub-par performance

# Accountability Report

- **Amend statute to require each constituent unit and BGHE to submit strategies to improve performance on unmet goals or performance measures as part of its annual report requirement**
- **DHE include the strategies in annual consolidated report to the committee of cognizance (Rec. #18)**

# Accountability Report

- There is no process for periodic review of accountability measures to determine if they need revision
  - some benchmarks were set too low

# Accountability Report

- **Require periodic review (every five years) by Higher Education Coordinating Council**
- **Revisions approved by BGHE**
- **Notify committees of cognizance why revisions or deletions were needed (Rec. #19)**

# Higher Education Coordinating Council

- Statutory Requirement
- Composed of:
  - Chairman of each board of trustee
  - Chancellor of each constituent unit
  - DHE and SDE commissioners
  - Secretary of OPM
- Has not met for some time
- Recognition that there should be coordination and discussion among different constituent units

# Higher Education Coordinating Council

- **Higher Education Coordinating Council be reconstituted (Rec. #20)**

# Rewarding Outcomes

- BGHE has no budget authority over constituent units
- Meeting performance goals contained in accountability report is not part of system funding formula
- Rewarding colleges and universities that achieve results is one way to establish incentives

# Rewarding Outcomes

- **Within available appropriations, create pilot program that gives DHE commissioner pool of money to reward colleges, universities, or systems meeting pre-established goals (Rec. #21)**

# Linking Higher Education to Sector-Based Jobs

- Office of Workforce Competitiveness, along with CETC, proposes an approach to better link higher education and Connecticut's competitive sector-based jobs
  - Requires establishment of career ladders in specific fields of study
  - Postsecondary programs designed to meet employer need at various skill levels

# Linking Higher Education to Sector-Based Jobs

- **OWC, in consultation with CETC, DHE, SDE, DOL, and DECD, identify the sectors or sub-sectors in which career pathways need to be established, the workforce skills needed, and types of postsecondary programs that need to be developed**
- **Provide this information to BGHE biennially (Rec. #22)**

# Linking Higher Education to Sector-Based Jobs

- **Based on information provided by OWC, the Higher Education Coordination Council make recommendations to BGHE regarding certificate and/or degree programs needed to address shortages, or if existing programs lack capacity to address shortage (Rec. #23)**

# Adult Education at the Technical High Schools

- Adult programs offered by the technical high schools include:
  - Dental assisting
  - Certified nurse assistant
  - Medical assistant
  - Surgical technology
  - Aviation maintenance technician
  - Until recently, practical nurse (LPN)
- Technical high schools may not be most appropriate place for adult education programs, if trying to create career pathways

# Adult Education at the Technical High Schools

- **The Connecticut Community College System examine the feasibility of transferring the technical high school adult education programs to the community college system**
- **Board of Trustees for the community college system shall report to legislative committees of cognizance by October 1, 2010 (Rec. #24)**