Minnesota Department of

Education

CAREER AND TECHNICAL EDUCATION INVENTORY

Fiscal Year 2015

Report of the

Career and Technical Education Programs, Participation, and Equipment Inventory

Submitted to the Minnesota Legislature

February 1, 2015

As required by

2014 Session Law, Chapter 312–H.F. No. 3172, Article 16, Section 12

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Cost of Report Preparation

The total cost for the Minnesota Department of Education (MDE) to prepare this report was approximately $100,000. Most of these costs involved staff time designing data collection systems, collection the data, analyzing the survey data, and preparing the written report. Incidental costs include paper, copying, software and other office supplies. The cost of providers submitting survey inventory data for the report are not estimated in this total cost of report preparation.

Estimated costs are provided in accordance with Minnesota Statutes 2011, section 3.197, which requires that at the beginning of a report to the Legislature, the cost of preparing the report must be provided.

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Introduction

The 2014 legislature directed the Minnesota Department of Education to conduct a career and technical education program inventory (2014 Session Law, Chapter 312, Article 16, Section 12.)

> *CAREER AND TECHNICAL EDUCATION PROGRAM INVENTORY.*
>
> *(a) The commissioner of education must consult with experts knowledgeable about secondary and postsecondary career and technical education programs to determine the content and status of particular career and technical education programs in Minnesota school districts, including cooperating districts under Minnesota Statutes, 123A.33, subdivision 2, integration districts, and postsecondary institutions partnering with school districts or offering courses through PSEO or career and technical programs and the rates of student participation and completion for these various programs, including: agriculture, food, and natural resources; architecture and construction; arts, audiovisual technology, and communications; business management and administration; computer science; family and consumer science; finance; health science; hospitality and tourism; human services; information technology; manufacturing; marketing; science, technology, engineering, and mathematics; and transportation, distribution, and logistics.*
>
> *(b) To accomplish paragraph (a) and to understand the current role of local school districts and postsecondary institutions in providing career and technical education programs, the commissioner of education, in consultation with experts, also must examine the extent to which secondary and postsecondary education programs offer students a progression of coordinated, nonduplicative courses that adequately prepare students to successfully complete a career and technical education program.*
>
> *(c) The commissioner of education must submit a report by February 1, 2015, to the education policy and finance committees of the legislature, consistent with this section, and include information about each district's dedicated equipment, resources, and relationships with postsecondary institutions and the local business community..."*

The commissioner of education designated the Office of Career and College Success (OCCS) in MDE as the responsible division for completing this work and designated a lead team to inform and implement data gathering and analysis methodology. The lead team membership consists of MDE executives and directors, CTE supervisors and specialists, OCCS and cross-department administrative support, government relations, data analytics, and information technology staff.

Executive Summary

The Minnesota Department of Education (MDE), in completing its charge to conduct an inventory of Minnesota's career and technical education courses and equipment, determined that a survey approach was the most feasible and timely way to gather the information. The timeline required that a report be presented to the legislature by February 1, 2015. MDE chose a survey approach since there is currently no database or collection system for this type of statewide information.

As the lead team explored tools appropriate for gathering the information, it was determined that a two-pronged mechanism was necessary to obtain both course and equipment information. We anticipated that districts would be challenged by the timeline, the type and quantity of information requested, and the personnel capacity to source and report the information. Therefore, we leveraged MDE staff specialists to pre-populate data wherever possible. For example, for the equipment portion of the inventory, districts were provided with pre-populated lists of typical equipment associated with each Career and Technical Education (CTE) cluster and courses. Additionally, the already state-approved program lists of courses clustered by field categories were provided to districts as a starting point for adding updated approved and/or non-approved CTE courses.

Through multiple and varied communications, districts were encouraged to participate in the CTE Program Inventory in the hopes that their contributions to providing the legislature with information about their CTE programs, and equipment and facilities, would help to inform future decision making and subsequent CTE resources. Given the limitations of time and personnel capacity, and that participation was voluntary, not required, it is noteworthy that there was 60 percent overall statewide participation in Part 1, which collected course and student participation information, and 65 percent overall statewide participation in Part 2, which asked for equipment and building/facilities information. The information provided is self-reported by district superintendents who designated a primary contact for the purposes of data collection. Therefore, all data submitted through the CTE Program Inventory are verified by the local districts.

The background that follows this summary provides information on career and technical education in Minnesota and methodology implemented for the CTE inventory. As the data is outlined in the report, associated common terminology and definitions are established, findings highlighted, and references for more detailed information are provided in the appendices.

Key Findings

Participation

Although not all districts participated in the CTE Program Inventory, the response rate for establishing statistical reliability was met and exceeded for both parts 1 and 2. For the response rate to indicate reliability and to be able to generalize the enclosed findings statewide, a rate of 47.1 percent was needed. The actual response rate of 60 percent (Part 1: Course Inventory) and 65 percent (Part 2: Equipment Inventory) demonstrates a substantial level of district level engagement in the data collection process.

CTE Courses

While not all of Minnesota districts offer all of the available career cluster or program areas, of the 258 districts that responded to the survey, 50 percent or more of the districts offer courses with these program areas or clusters, in order of frequency: Family and Consumer Science; Business Management and Administrative Support; Architecture and Construction; and Agriculture, Food and Natural Resources.

The reported total number of non-duplicative CTE courses reported by respondents offered in the state is 9,019. Within the number reported, the average number of CTE non-duplicative courses taught per district is 35. The most frequently reported non-duplicative courses offered are in the area of Business Management and Administrative Support, followed by Agriculture, Food and Natural Resources, then Architecture and Construction. The most common overall course offerings are in these same areas, including courses in Family and Consumer Science.

CTE courses in Minnesota consist of state-approved courses and non-state-approved courses. Approved courses are submitted through a program approval application process, reviewed by MDE as a course within a program of study and for appropriate teacher licensure requirements. If approved, districts are eligible to apply to receive CTE Revenue and to be supported in part by federal Carl D. Perkins grant funding. Since districts have local control to determine curriculum and course offerings, they may also offer CTE courses that have not been submitted for state approval. The percent of approved and non-approved courses within each program area varies. The total percent of approved (88.1%) and non-approved (11.9%) is a composite of all courses, and the percentages are relative, since some program areas have a larger number of individual courses than others.

Some CTE courses offer some academic credit that meets graduation requirements, as determined by each local district. While the highest percentage of courses offering both CTE elective credit and academic credit towards graduation requirements is in the area of Law Enforcement, the highest number of courses integrated with credits towards graduation requirements are in the areas of Business Management and Administrative Support, followed by Family and Consumer Science, and then Agriculture, Food and Natural Resources.

Of the 9,019 CTE courses offered, the highest percentage of courses within each program area offered fully online is Career Exploration (8.6%), followed by Business and Finance (4.5%) and

Information Technology (4.4%.) The program with the greatest number of courses, either partially or fully online, is Business Management and Administrative Support (N=144).

Postsecondary Relationships

Articulation credits offered through secondary to postsecondary articulation agreements leading to Certificate, Postsecondary Credential, Concurrent Enrollment or Articulated Credits through CTE courses within each program range from 0 percent to 66.7 percent for each district.

Postsecondary and Business & Industry and Community Organization Advisories

The percentage reported by each program area that had either a Business & Industry, Community Organization and/or a Postsecondary faculty partner serving on a CTE Advisory Committee is relative, considering the actual number of districts offering the programs. For example, the program area of Public Affairs/Community Awareness reported that 100 percent of their programs have Advisories, consisting of either postsecondary and/or business, industry or community partners. However, there are only three Public Affairs/Community Awareness Programs reported statewide, in comparison to a statewide 21.1 percent of districts offering (a total of 1,901 courses) in the area of Business Management and Administrative Support, or 44.1 percent reporting partners on Advisory Committees.

Work-Based Learning, Youth Apprenticeship, Handicap, Transition/Disabled Programs

Approximately 8 percent of all 9th-12th grade students are enrolled in some form of Work-Based Learning, Youth Apprenticeship, or Transition Disabled program in the state of Minnesota.

Equipment Inventory

Career and Tech Ed programs across the state reported having 58,902 pieces of equipment currently in inventory. Districts also reported needing an additional 18,860 equipment items in order to implement CTE programs effectively. Equipment was defined as one or multiple item(s) worth $400 or more, or items considered to be "attractive equipment" (e.g., cameras, computers, iPads, high-tech and/or portable). Multiplying the additional 18,860 equipment items needed by the baseline threshold of $400, it would cost an estimated $7,544,000 as a minimum investment to allow CTE programs to operate effectively. This reflects only the need of the districts that participated in the inventory; the true need is most likely higher. This quantity does not include "other" or additional items listed by respondents in the survey, which were not originally included in the pre-populated list of typical equipment needed for each program area. Therefore, the minimum investment should be viewed as an underestimate of the actual need.

Respondents also reported in kind or donated items used to sustain CTE programs. Districts reported that the percentage of equipment items donated by industry, business, community, or postsecondary partners ranged from 0 percent (Law Enforcement) to 12.3 percent (Hospitality and Culinary Arts) of their overall equipment.

Districts reported that 59.2 percent of their existing equipment currently meets industry standards. In addition, the CTE Program Inventory data suggest that programs are operating at 75.7 percent of their actual capacity to serve students based on the equipment they have available. Keep in mind that these percentages do not convey the relative importance or priority of each item. For example, needing a lower cost/lower priority item such as a utility cart as compared with a high cost/high importance item such as a fly-wheel remover, without some automotive repairs would be impossible to complete.

Facilities Status

Survey respondents indicated a need for upgraded and added facilities, or any structural or site-related updates needed to meet building and safety codes. Most areas report needing updates. Districts reported that program areas needing updates within the next year range from 0% (Law Enforcement) to 32% (Manufacturing). These percentages and potential resource costs are relative to the overall facility status when considering the number of programs affected, such as Law Enforcement which has 33 actual courses, while 482 Manufacturing courses are reported. Most program areas report that their update cycle needs would occur in the next 2-5 years.

Barriers to Sustaining and Increasing CTE Participation

Respondents reported that there are barriers to sustaining and growing CTE programs in their districts. 281 districts responded to a list of potential barriers to student access and sustaining and/or increasing CTE programs. The respondents were asked to enter individual data for each 9th-12th grade school in their district, so there were 348 total responses. In the analysis, these listed items were clustered into themes. The most frequently reported barriers, in order, include:

- Lack of school funding, lack of existing teachers with CTE licensure.
- Lack of teachers pursuing or obtaining CTE licensing.
- Lack of equipment availability and facilities at the school to expand CTE courses.
- Lack of flexibility in the student's school day schedule to meet graduation requirements, and at the same time access CTE courses and/or programs.
- Lack of flexibility in the student school day schedule and/or choice options at high schools which provide dual credit options granting students both high school academic credit which meet graduation requirements as well as CTE course and/or postsecondary credit.
- Staff capacity to complete required state and federal documentation and processes for program development.

The CTE Program Inventory data analysis addresses some fundamental questions and should inform a statewide discussion about the status of CTE in Minnesota. Some of the survey data, such as the reported resource needs, student access challenges, and participation and program sustainability and growth barriers, lead to additional questions. We need to further explore the opportunities and challenges that the current status of CTE programming presents to Minnesota students, schools, communities, and the state.

Background

In Minnesota, there are academic standards for English language arts, mathematics, science, social studies, and physical education (§120B.021). Standards are also available in the arts, or districts may develop their own. However, there are no state standards for Career and Technical Education (§120B.022). Districts must develop their own standards for career and technical education, health, and world languages. Additionally, some local districts integrate academic standards within career and technical education courses. The National Association of State Directors of Career and Technical Education Consortium, or NASDCTEc, has sought input from 3,500 people in 42 states and the District of Columbia, including those in higher education, K-12, and business, to shape standards, called the Common Career Technical Core for Career and Technical Education. This body of work has informed Minnesota's division of the career fields into 16 career clusters that represent different industries, and subsets of pathways within each cluster (See Appendix I for a graphic of the career clusters, fields, and pathways).

Minnesota receives the Carl D. Perkins Career Technical Education Grant (these are supplemental and federal funds) to fund career and technical education for schools included in the Perkins state plan of approved programs. The plan is built on a collaborative consortium structure made of up of 26 regional groupings of secondary schools and postsecondary institutions. Funds are coordinated among secondary and postsecondary consortium members and are established to support state goals and performance indicators. Perkins grant funding can be used for leadership activities, program administration and implementation, and professional development. Funding allocations are made on the basis of basic distribution formulas. The secondary basic allocations are based on census data for the population aged 5-17 (30%) and the population aged 5-17 from families of poverty (70%). Postsecondary basic allocations are based on the number of Pell grant recipients in CTE programs. FY14 consortium allocations totaled $14,181,941.45 for Minnesota, and ranged from $134,807 (Hibbing-Chisholm) to $1,427,445 (Hennepin West) depending on the allocation formula. FY14 secondary allocations totaled $5,956,415 and ranged from $35,302 for Hibbing-Chisholm to $556,146 for Minneapolis. Ten percent of the local consortium funds are reserved to meet the needs of high-participation CTE programs and rural areas. The reserve allocations are based on participation in CTE programs and geographical area of member districts.

The purpose of Perkins is to provide individuals with the academic and technical skills needed to succeed in a knowledge- and skills-based economy. Perkins supports career and technical education that prepares its students both for postsecondary education and the careers of their choice.

Local CTE revenue, state educational funds, and Perkins dollars are generally used for the following types of activities:

- Serving as a catalyst for change by driving program improvement.
- Developing a strong accountability system that ensures quality and results.
- Strengthening the integration of academic and career and technical education.

- Ensuring access to career and technical education for special populations, including students with disabilities.
- Developing and improving curricula.
- Purchasing equipment to ensure that classrooms have current technology.
- Providing career guidance and academic counseling services.
- Providing professional development and technical assistance for teachers, counselors, and administrators.
- Supporting career and technical education student organizations.

Schools with MDE-approved CTE programs and appropriately licensed CTE teachers are eligible to levy for Career and Technical Education Revenue. The Career and Technical Education Levy is a permissive levy for school districts to give extra support based, in part, on the district's CTE expenditures, such as CTE teacher salaries (grades 9-12), classroom supplies, teacher travel, and professional development. CTE Levy Revenue provides districts for up to approximately 35 percent of allowable expenditures, and allocated actual was $59,884,035.81 in FY13.

This report outlines the methodology used to gather the information from public and charter schools, districts, departments and individuals who serve students in career and technical education, summarizes the data that was gathered, and provides an analysis of key findings.

Definitions

CTE (Career and Technical Education): Career and technical education courses often utilize a hands-on style of learning that promotes the attainment of technical skills and helps students gain an understanding of how academic concepts are used in the workplace. These programs can help students learn about, explore, and prepare for a career. Many high school career and technical education programs are designed to be the first part of a program of study that continues for up to two years beyond high school at a state technical college or community college.

Postsecondary: Higher learning from grades 13-18 is an optional final stage of formal learning that occurs after secondary education. Carl D. Perkins federal funding supports students in grades 13-14 at the postsecondary level. The postsecondary credential consists of an industry-recognized certificate or certification, a certificate of completion of an apprenticeship, a license recognized by the state or federal government, or an associate or baccalaureate degree.

Secondary: The definition of secondary education varies among school districts but generally includes grades 6, 7, 8, and 9 through 12; grade 5 is sometimes included. In Minnesota, 9th through 12th grade is the most common grade structure for a public, charter, or accredited high school.

Career Cluster/Program Area: The careers and occupations in Minnesota are divided into career clusters that represent different industries, and subsets of pathways within each cluster. For example, Health Sciences is divided into career pathways, or a series of courses that

prepare you for an occupational field. An example of an occupational field for Health Sciences is Therapeutic Services, which could lead to a job such as a radiologist or physical therapist.

Approved Programs/Courses: An "approved" CTE program or course indicates that a district has submitted a program approval request, and if it meets established criteria, received an approval from the Minnesota Department of Education. Approved courses and programs and the corresponding CTE teacher licensure requirement are listed in Table C on [the MDE website](http://education.state.mn.us/MDE/SchSup/CareerEdAdmin/ProgAppr/) (http://education.state.mn.us/MDE/SchSup/CareerEdAdmin/ProgAppr/).

Non-Approved Programs/Courses: "Non-approved" CTE courses or programs have not been state approved and are not eligible to receive Perkins or CTE Revenue Levy monies if the criteria for approval have not been met.

Non-duplicative Courses: A sequence of courses which are not duplicated (replicated) or counted twice.

Methodology

In accordance with the legislation, data for the CTE inventory were collected statewide. The data collection tools were designed as a comprehensive inventory of all designated career and technical education courses and programs taught by licensed and non-licensed CTE teachers, as well as of all CTE equipment available to public school students across the state in grades 9-12. The CTE areas included in the data collection process are listed below and are equated to the program areas listed in legislation: 1) Course Inventory, 2) Equipment Inventory.

Program Area: Legislation	1) Career Cluster: Course Inventory	2) Career Cluster: Equipment Inventory
Ag, Food, & Natural Resources	1. Ag, Food, & Natural Resources	1. Ag, Food, & Natural Resources
Architecture & Construction	2. Architecture & Construction	2. Architecture & Construction
Manufacturing	3. Manufacturing	3. Manufacturing
Transportation, Distribution, & Logistics	4. Transportation	4. Transportation
Information Technology Computer Science	5. Information Technology	5. Communication & Information Technology
Marketing	6. Marketing	6. Business & Marketing
Finance	7. Business & Finance	7. *see (6) Business & Marketing**
Hospitality & Tourism	8. Hospitality & Culinary Arts	8. Hospitality & Culinary Arts
Business Management & Administrative	9. Business Management & Administrative Support	9. *see (6) Business & Marketing**
Health Science	10. Health Science Technology Education	8. Health Science Technology Education
Family and Consumer Science	11. Family and Consumer Science	11a. Family and Consumer Science 11b. Early Childhood 11c. Textiles & Apparel
Arts, Audiovisual Technology & Communications	12. Arts, Audiovisual, Industrial & Communication Technology	12. see (5) *Communication & Information Technology**
Human Services	13. Law Enforcement	13. Law Enforcement
Science, Technology, Engineering, and Mathematics (STEM)	14. Science, Technology, Engineering, and Mathematics (STEM)	NA
NA	15. Education and Training	NA
NA	16. Public Affairs/Community Awareness	NA
NA	17. Career Exploration	NA
NA	18. Transition-Disabled	NA

*Indicates a Career Cluster that has been merged with a previously mentioned Career Cluster in order to expedite data collection.

All Minnesota independent and special school districts, intermediate, integration, service and vocational cooperatives, as well as charter schools serving grades 9-12 were invited to participate in the CTE Program Inventory data collection process (N=433).

The data collection content, terminology, and instruments were developed and refined through a process that involved career and technical education and evaluation experts at the Minnesota Department of Education (MDE) and community stakeholder groups, monitored by a lead team of MDE administrators, government relations, education specialists, information technology, administrative support, and data analytics staff.

Questions were written in direct alignment with the requirements as outlined in statute. Additional questions regarding business and industry partnerships, experiential learning, academic and graduation standards, facilities, and participation barriers were added due to their relevance and importance to the topic. The draft questions were reviewed by internal experts and external organizations in order to gather feedback. Then, the final questions and data collection system was field tested for cogency and clarity with CTE experts, as well as educators not as familiar with CTE. Adjustments to questions were made based on feedback from these field experts.

The data collection process began by contacting superintendents. Superintendents received an email from the commissioner of education inviting them to participate in the CTE Program Inventory. Superintendents were contacted up to four times by email and phone, with the invitation to designate someone within their district to act as a primary contact for the CTE Program Inventory data collection process. These primary contacts included principals, administrative, clerical, school support or finance staff, CTE teachers, Perkins consortium leaders, and more; although district site teams were often involved with the data collection process, the point of communication with MDE and the collection process occurred via the primary contact as designated by each superintendent.

Considering the volume of data being gathered and the various persons having access to the needed information, the data collection process was implemented in two parts. Part 1: Course Inventory was thought to be most relevant for the district administrative office personnel who are most likely to hold course catalog records. In order to gather these data, secure access through a SharePoint site was established as a means of disseminating all data collection tools, and retrieving the final Part 1: Course Inventory excel file once complete.

Each district received a customized Part 1: Course Inventory data file which was pre-populated with all known course information on record with MDE as part of a district's CTE Approved Program. Districts were asked to update their Part 1: Course Inventory file according to only those courses they offered during the last full school year (2013-14) so that one full year of CTE courses are represented in the data. Please note that some districts only offer particular course sequences every other school year. However, to establish consistency, only those courses offered during the 2013-14 school year are included in this report. Districts were also asked to list any additional CTE courses that were not currently part of an approved program, for

example, if a teacher did not currently hold the appropriate CTE license. Part 1: Course Inventory terminology was defined to make sure we received consistent responses. (See Appendix C for the complete list of questions and data collection categories, see Appendix D for terminology.)

Once all course information had been updated, districts were next asked a series of questions related to each individual course listed in their excel file. For example: student participation, student completion, industry recognized certificate, postsecondary credential, concurrent enrollment, articulation/credit agreement, meeting graduation standards, online course delivery, relationships with postsecondary, and advisory committee participation. Once complete, districts then uploaded their Part 1: Course Inventory excel file to the secure CTE Program Inventory SharePoint site.

The Part 2: Equipment Inventory was thought to be most applicable to classroom teachers and program staff who are most likely to know about equipment resources. An excel file was provided on the CTE Program Inventory SharePoint site as a means of facilitating the data collection process within a district, given that numerous people might need access to the data collection tool. However, once equipment resources were compiled, districts were asked to enter their Part 2: Equipment Inventory data by hand into SurveyGizmo, an online software program, in order to facilitate analysis of these data.

Due to the complexity of the data collection process, MDE staff provided technical assistance to respondents through phone and email support, a statewide informational meeting and sessions for consortia leaders, and nine instructional webinars. Each webinar lasted approximately one hour, during which 30 minutes were dedicated toward instruction and 30 minutes were made available for an open-ended question/answer session.

Once the data collection process closed, all completed excel files from Part 1: Course Inventory were downloaded and compiled for analysis. Data from Part 2: Equipment inventory were extracted from the SurveyGizmo software and compiled for analysis. Note: although the Part 1: Course Inventory file refers to all CTE courses offered during the last full school year (2013-14), the Part 2: Equipment Inventory refers to all equipment resources available right now, during the current school year (2014-15).

Response rate

For a variety of reasons, not all districts who participated in the CTE Program Inventory were able to complete both Parts 1 and 2 of the data collection process. Therefore, a different response rate is given for each part. Of the 433 districts and schools who were invited to participate in the CTE Program Inventory, the response rate for Part 1: Course Inventory was 60 percent (N=258). Of those who responded to the Part 1: Course Inventory, fourteen districts/schools reported that they did not offer any CTE programs; an additional three districts were dropped from the final analysis due to insufficient data. The response rate for Part 2: Equipment Inventory was 65 percent (N=281). See Appendix G for the list of districts who participated in Part 1 and in Part 2 and a scatter map showing statewide participation.

CTE Program Inventory: Response rate

These maps display the statewide participation in the CTE Program Inventory data collection for Part 1 and Part 2 (see also Appendix G). The areas that are in color represent district responses; colored circles represent a response from a charter school, intermediate or educational district, or service/vocational cooperative.
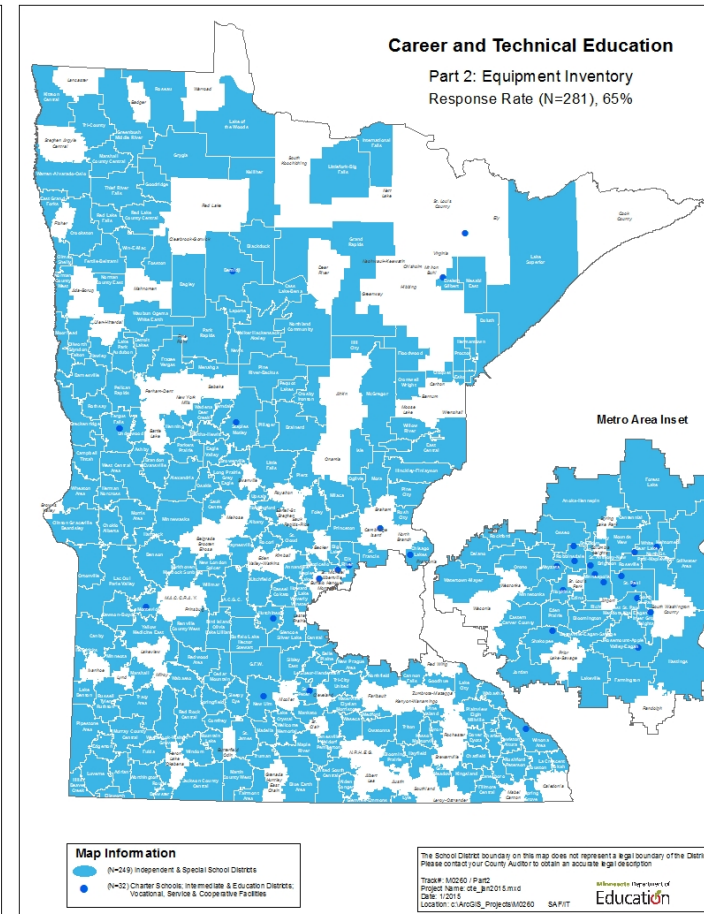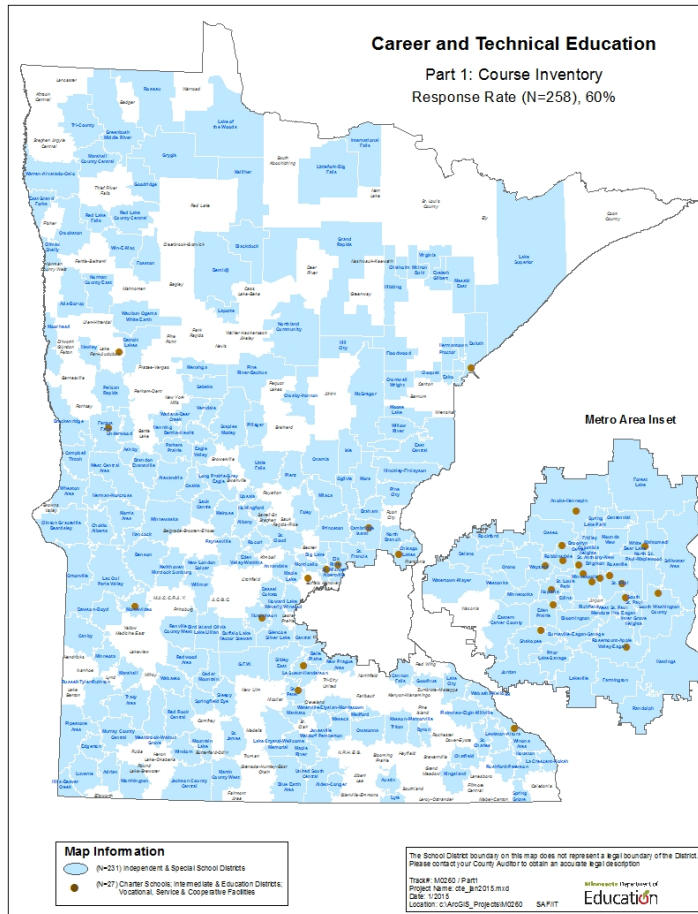
Part 1: Course Inventory

Percent of districts offering courses within each program area.

Figure 1. With respect to the number of districts who responded (N=258), this figure illustrates the percent of districts offering courses in each program area.

Program Area	Percent
Ag, Food & Natural Resources	50.0%
Architecture & Construction	66.7%
Manufacturing	46.5%
Transportation	41.5%
Information Technology	19.8%
Marketing	18.2%
Business & Finance	15.5%
Hospitality & Culinary Arts	8.5%
Business Mngt & Admin Support	67.8%
Health Science Technology Ed	20.2%
Family & Consumer Science	69.4%
Arts, Audiovisual, Industrial/Comm Tech	36.8%
Law Enforcement	3.9%
STEM	6.6%
Education & Training	0.0%
Public Affairs/Community Awareness	0.8%
Career Exploration	8.1%
Transition-Disabled	44.6%

Percent of non-duplicative courses offered in each program area.

Table 1. The number and percent of courses offered within each program area.

CC#*	Career Cluster/Program Area	Number	Percent
1	Ag, Food & Natural Resources	1,477	16.4%
2	Architecture & Construction	1,051	11.7%
3	Manufacturing	482	5.3%
4	Transportation	447	5.0%
5	Information Technology	168	1.9%
6	Marketing	277	3.1%
7	Business & Finance	158	1.8%
8	Hospitality & Culinary Arts	73	0.8%
9	Business Management & Administrative Support	1,901	21.1%
10	Health Science Technology Education	208	2.3%
11	Family & Consumer Science	1,593	17.7%
12	Arts, Audiovisual, Industrial, & Communication Tech	519	5.8%
13	Law Enforcement	33	0.4%
14	Science, Technology, Engineering, and Mathematics	43	0.5%
16**	Public Affairs/Community Awareness	3	0%
17	Career Exploration	37	0.4%
18	Transition-Disabled	549	6.1%
	Total number of courses offered=	**9,019**	**100%**

*CC# represents the Career Cluster or program area number. These numbers are presented as a way of tracking data across all data tables within this report.
**Note that Career Cluster 15, Education and Training, is not included in this or any other table; there were no courses reported for this program area. This career cluster may be reported within Family and Consumer Science or another CTE program area.

The total number of non-duplicative CTE courses offered in the state is 9,019. The average number of CTE courses taught per district is 35.

Business Management and Administrative Support has the largest number and percentage of courses offered across the state (21.1%), followed by Family and Consumer Science (17.7%), Ag, Food & Natural Resources (16.4%), and Architecture and Construction (11.7%). Courses offered in these four Career Cluster areas far exceed all other course offerings across the state.

Most Common Course Offerings

The table below shows the *Mean, which is the average number of program areas offered within districts. The **Median is the number of in the exact center of the distribution when ordering the number of courses per program area from smallest to largest. The ***Mode represents the most commonly occurring number of courses in the distribution for each program area.

Table 2. Mean (average), median, mode, range, and total number of courses offered within a district.

CC#	Career Cluster/Program Area	*Mean (Average): # of Courses per District	**Median: # of Courses per District	***Mode: # of Courses per District	Range: # of Courses per District	Total: # of Courses
1	Ag, Food & Natural Resources	5.7	11	15	0-28	1,477
2	Architecture & Construction	4.1	3	5	0-22	1,051
3	Manufacturing	1.9	3	2	0-40	482
4	Transportation	1.7	3	1	0-19	447
5	Information Technology	0.7	2	1	0-12	168
6	Marketing	1.1	4	4	0-17	277
7	Business & Finance	0.6	2	1	0-46	158
8	Hospitality & Culinary Arts	0.3	2	2	0-10	73
9	Business Management & Administrative Support	7.4	9	7	0-75	1,901
10	Health Science Technology Education	0.8	3	1	0-21	208
11	Family & Consumer Science	6.2	7	8	0-56	1,593
12	Arts, Audiovisual, Industrial, & Communication Tech	2.0	3	1	0-52	519
13	Law Enforcement	0.1	4	4	0-5	33
14	STEM	0.2	2	2	0-9	43
16	Public Affairs/Community Awareness	0	1-2	1-2	0-2	3
17	Career Exploration	0.1	1	1	0-4	37
18	Transition-Disabled	2.1	3	1	0-35	549

Number and percent of approved and non-approved CTE courses

This table shows the number and percent of CTE courses that are either "Approved" or "Not Approved." "Approved" means that MDE has approved these courses as part of a program approval process. "Not Approved" means that these courses continue to be offered within a district, though they are not part of a CTE program approval process. This can often happen, for example, if a teacher does not hold the appropriate licensure and the school would like to offer the course as an elective course option for students.

The "percent of non-approved programs" is a relative percentage, based on the total number of courses offered within each program area. For example, the highest percent of non-approved CTE courses are in the program area STEM; of the 42 courses listed for STEM, 30 (71.4%) were reported to be non-approved. However, the program area of Architecture and Construction lists 1,042 courses in total, of which 224 (21.5%) are reported to be non-approved CTE courses.

Table 3. Number and percent of approved and non-approved CTE courses by program area.

CC#	Career Cluster/Program Area	# Approved	# Non-Approved	% Approved	% Non-Approved
1	Ag, Food & Natural Resources	1,451	25	98.3%	1.7%
2	Architecture & Construction	818	224	78.5%	21.5%
3	Manufacturing	365	115	76.0%	24.0%
4	Transportation	376	70	84.3%	15.7%
5	Information Technology	133	35	79.2%	20.8%
6	Marketing	250	28	89.9%	10.1%
7	Business & Finance	76	80	48.7%	51.3%
8	Hospitality & Culinary Arts	46	27	63.0%	37.0%
9	Business Management & Administrative Support	1,842	48	97.5%	2.5%
10	Health Science Technology Education	179	29	86.1%	13.9%
11	Family & Consumer Science	1,555	25	98.4%	1.6%
12	Arts, Audiovisual, Industrial, & Communication Tech	402	115	77.8%	22.2%
13	Law Enforcement	32	1	97.0%	3.0%

CC#	Career Cluster/Program Area	# Approved	# Non-Approved	% Approved	% Non-Approved
14	Science, Technology, Engineering, and Mathematics	12	30	28.6%	71.4%
16	Public Affairs/Community Awareness	2	1	66.7%	33.3%
17	Career Exploration	12	25	32.4%	67.6%
18	Transition-Disabled	532	16	97.1%	2.9%
	Total=	6,632	894	88.6%	11.3%

*Please note that the percent of Approved and Non-Approved totals to 100%.

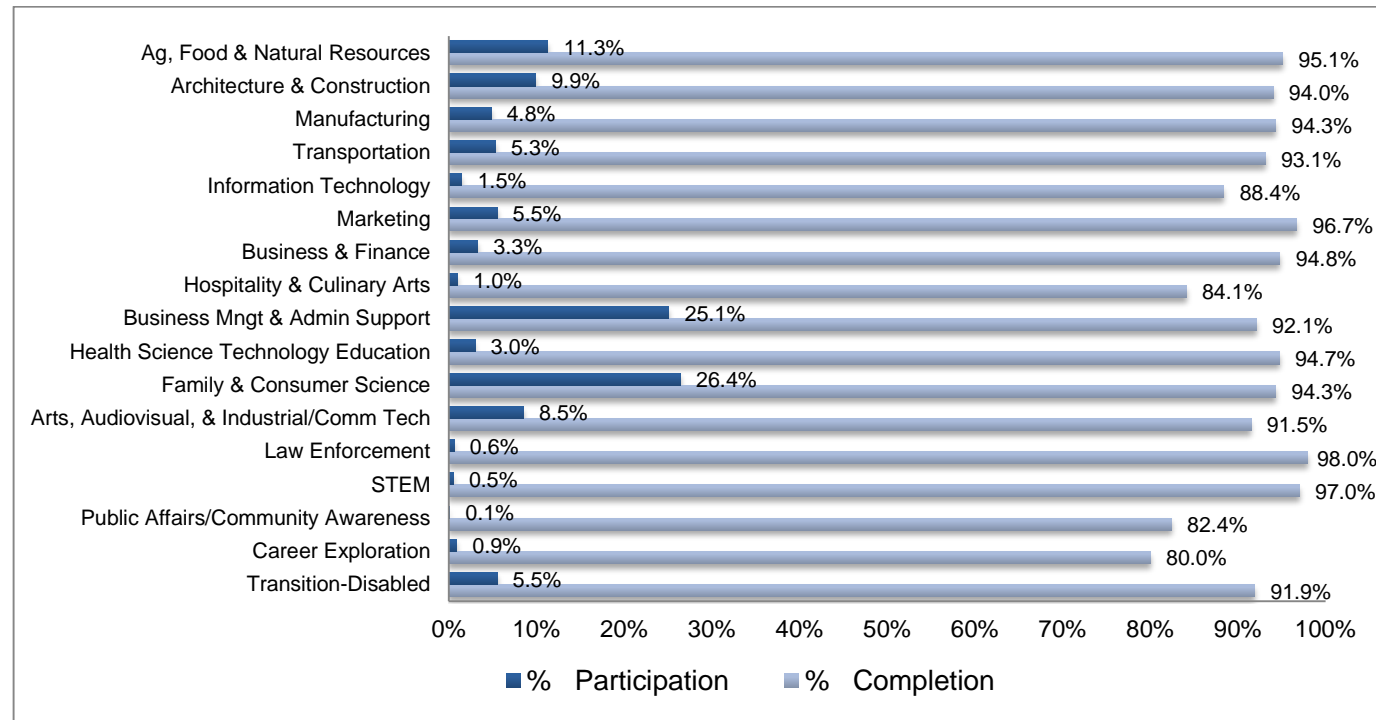**Not all courses were reported as either Approved or Non-Approved; some course were reported as "Unknown."

Participation and completion rates within each program area statewide.

Definitions

Participation represents the total number of students, during school year 2013-14, who enrolled in a CTE course.

Completion represents the total number of students, during school year 2013-14, who earned a passing grade in a CTE course.

Figure 2. *Participation and **Completion of students in CTE courses within each program area (see Appendix X for additional details).

Ag, Food & Natural Resources: Participation 11.3%, Completion 95.1%
Architecture & Construction: Participation 9.9%, Completion 94.0%
Manufacturing: Participation 4.8%, Completion 94.3%
Transportation: Participation 5.3%, Completion 93.1%
Information Technology: Participation 1.5%, Completion 88.4%
Marketing: Participation 5.5%, Completion 96.7%
Business & Finance: Participation 3.3%, Completion 94.8%
Hospitality & Culinary Arts: Participation 1.0%, Completion 84.1%
Business Mngt & Admin Support: Participation 25.1%, Completion 92.1%
Health Science Technology Education: Participation 3.0%, Completion 94.7%
Family & Consumer Science: Participation 26.4%, Completion 94.3%
Arts, Audiovisual, & Industrial/Comm Tech: Participation 8.5%, Completion 91.5%
Law Enforcement: Participation 0.6%, Completion 98.0%
STEM: Participation 0.5%, Completion 97.0%
Public Affairs/Community Awareness: Participation 0.1%, Completion 82.4%
Career Exploration: Participation 0.9%, Completion 80.0%
Transition-Disabled: Participation 5.5%, Completion 91.9%

■ % Participation   ■ % Completion

*Participation rate was calculated by dividing the rate of participation districts reported by total 9th-12th grade district enrollment.
**Completion rate was calculated by dividing the rate of participation reported by districts by the rate of completion in those same CTE courses.

Interpretation: Of the districts who responded to the CTE Program Inventory data request, 26.4 percent of the district-wide 9-12th grade student population participated in one or more Family and Consumer Science courses. Of the students who participated in one or more Family and Consumer Science course, 94.3 percent successfully completed the course.

District Graduation Standards

This question was answered "yes" for each course listed in a district's Course Inventory file in which an academic standard could be met, in which case a core academic credit is awarded to students; a course may or may not be an elective course. Whether or not a course meets an academic graduation standard is determined by each local district.

Figure 3. Percent of courses in each program area in which a Graduation Requirement can be met; therefore, a core academic credit is awarded (see Appendix H, Table 12 for additional details).
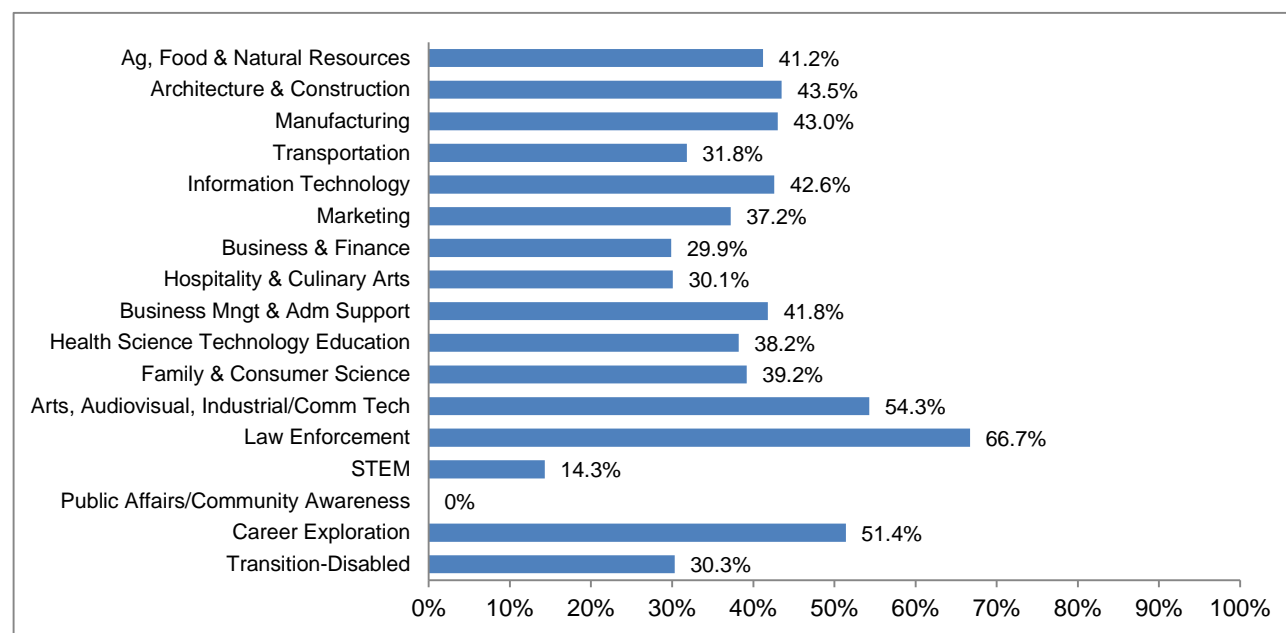
Although the highest percent of courses assisting students toward meeting graduation requirements is Law Enforcement (66.7%), it should be noted that the highest number of courses with embedded graduation standards is Business Management and Administrative Support

(1,752), followed by Family and Consumer Science (1,441), and Agriculture, Food, and Natural Resources (1,339). (See Appendix H, Table 12 for additional details.)

Online CTE course options

The highest percentage of courses offered fully online is Career Exploration (8.6%), followed by Business and Finance (4.5%), and Information Technology (4.4%). However, the program area with the greatest number of courses offered either partially (118) or fully online (26) is Business Management and Administrative Support (total=144).

Table 4. Number and percent of courses, by program area, that are offered either partially or fully online.

CC#	Career Cluster/Program Area	# Partially Online	# Fully Online	% Partially Online	% Fully Online
1	Ag, Food & Natural Resources	34	3	2.5%	0.2%
2	Architecture & Construction	13	0	1.4%	0%
3	Manufacturing	9	0	2.0%	0%
4	Transportation	6	1	1.5%	0.3%
5	Information Technology	18	6	13.0%	4.4%
6	Marketing	2	3	0.9%	1.3%
7	Business & Finance	0	7	0%	4.5%
8	Hospitality & Culinary Arts	0	1	0%	1.4%
9	Business Management & Administrative Support	118	26	6.7%	1.5%
10	Health Science Technology Education	11	2	5.9%	1.1%
11	Family & Consumer Science	19	9	1.3%	0.6%
12	Arts, Audiovisual, Industrial, & Communication Tech	22	9	4.4%	1.8%
13	Law Enforcement	0	0	0%	0%
14	Science, Technology, Engineering, and Mathematics	2	1	5.0%	2.5%
16	Public Affairs/Community Awareness	0	0	0%	0%
17	Career Exploration	1	3	2.9%	8.6%

CC#	Career Cluster/Program Area	# Partially Online	# Fully Online	% Partially Online	% Fully Online
18	Transition-Disabled	0	2	0%	0.4%
	Total=	255	73	3.0%	1.2%

*Note that the numbers in this table do not total previously reported course numbers; many courses for this question were coded as unknown.

Local College or Third Party Vendors

Definitions

Third party vendors can offer courses either on-site or off-site of a district's classrooms and are taught by an expert in the field, for example, a cosmetology class taught by a licensed beautician at a local studio or a nursing class taught at a local hospital. "College" refers to any CTE course taught by an instructor at a local college.

Table 5. Number and percent of courses, by program area, which are taught by either a Third Party Vendor, or a local college.

CC#	Career Cluster/Program Area	# College	# Third Party Vendor	% College	% Third Party Vendor
1	Ag, Food & Natural Resources	1	0	0.1%	0%
2	Architecture & Construction	3	0	0.3%	0%
3	Manufacturing	0	0	0%	0%
4	Transportation	4	6	1.0%	1.5%
5	Information Technology	5	0	3.6%	0%
6	Marketing	5	0	2.2%	0%
7	Business & Finance	0	0	0%	0%
8	Hospitality & Culinary Arts	0	0	0%	0%
9	Business Management & Administrative Support	22	14	1.2%	0.8%
10	Health Science Technology Education	6	8	3.2%	3.8%

CC#	Career Cluster/Program Area	# College	# Third Party Vendor	% College	% Third Party Vendor
11	Family & Consumer Science	3	3	0.2%	0.2%
12	Arts, Audiovisual, Industrial, & Communication Tech	0	0	0%	0%
13	Law Enforcement	0	0	0%	0%
14	Science, Technology, Engineering, and Mathematics	0	0	0%	0%
16	Public Affairs/Community Awareness	0	0	0%	0%
17	Career Exploration	0	0	0%	0%
18	Transition-Disabled	0	2	0%	0.4%
	Total=	49	33	0.6%	0.4%

Relationships with postsecondary institutions

Definitions

Transcripted College Credits: students taking a course at their local high school will be able to receive transferable college credits once the student enrolls into the specific college with whom the agreement is held.

Articulation/Credit Agreements: Articulated credits are designed to provide students with a non-duplicative progression of courses or achievement between high school and postsecondary school leading to credit for prior learning, sometimes leading to college credit, degrees or certification in a program. Students who take this course are awarded college credit if students and once the student enrolls into the college with whom the agreement is held.

Concurrent Enrollment: Students taking a concurrent course will receive transferable college credits such as PSEO (Postsecondary Enrollment Options), College in the Schools, Concurrent Enrollment, or Dual-Credit.

Certificate or Credential: courses that offer a credential consisting of an industry-recognized certificate or certification, a certificate of completion of an apprenticeship, a license recognized by the state or federal government, or an associate or baccalaureate degree. Industry recognized and/or postsecondary credential or certificate can lead to a recognized skill or job opportunity. For example, a CNA

certificate or American Welding Society certificate can lead to meeting the qualifications for employment. The focus is on Business & Industry or employment attainment. It is generally required by the postsecondary institutions that the course be taught by a teacher credentialed according to the postsecondary institution's credentialing requirements.

Table 6. Percent of courses within each program area leading to a Certificate, Postsecondary Credential, Concurrent Enrollment, or an Articulation credit/agreement (see Appendix H, Table 14 for the number of courses for each of these items).

CC#	Career Cluster/Program Area	Certificate	Postsecondary Credential	Concurrent Enrollment	Articulation Credit
1	Ag, Food & Natural Resources	2.2%	4.4%	4.2%	14.8%
2	Architecture & Construction	4.6%	7.1%	4.0%	16.0%
3	Manufacturing	5.5%	16.0%	6.1%	27.2%
4	Transportation	12.6%	17.1%	6.7%	29.3%
5	Information Technology	22.9%	19.3%	13.6%	31.0%
6	Marketing	6.1%	10.4%	3.8%	35.3%
7	Business & Finance	1.9%	1.3%	3.8%	14.7%
8	Hospitality & Culinary Arts	19.2%	13.6%	0%	21.9%
9	Business Management & Administrative Support	5.7%	13.3%	6.3%	24.3%
10	Health Science Technology Education	45.6%	37.7%	20.6%	42.3%
11	Family & Consumer Science	3.2%	6.7%	1.3%	14.5%
12	Arts, Audiovisual, Industrial, & Communication Tech	9.2%	16.4%	6.0%	28.0%
13	Law Enforcement	0%	28.6%	28.6%	57.1%
14	Science, Technology, Engineering, and Mathematics	4.8%	9.5%	16.7%	16.7%
16	Public Affairs/Community Awareness	66.7%	0%	33.3%	66.7%
17	Career Exploration	5.6%	5.6%	0%	2.8%
18	Transition-Disabled	1.1%	2.9%	0%	1.1%
	Total=	6.0%	10.2%	4.7%	19.9%

Advisory Committees

Definitions

Advisory Committee: CTE Advisory Committee indicates a group of persons with competence or interests in an occupational field related to the program being served. Individuals selected to participate in Advisory Committees offer advice to teachers or administrators regarding career and technical education. The primary purpose of the CTE program advisory committee is to assist educators in establishing, operating, and evaluating the CTE program which serves the needs of the students, the community, and the business/industry partners; and to provide expertise and insight about current/future industry and technological changes. A prerequisite for program approval in the state of Minnesota is having an actively engaged and functioning Advisory Committee.

Business and Industry Partner: a single person, group of people, company, or group of companies that has a vital interest in promoting and supporting a specific Career and Technical Education program through business and industry by way of monies, grants, mentorship, internship, work experience, or educational opportunities.

Community Organization Partner: Organizational partnerships that are cooperative, collaborative relationships that exist between two or more independent community partners to increase administrative efficiency and/or programmatic impact through shared, transferred or combined services, resources or programs.

Treatment of the data

For questions pertaining to Advisory Committees, the data were coded in the following way. Districts were asked to answer either "Yes" or "No" for each program area offered within their district, however, there were 95 cases in which districts answered "Yes" or "No" for each *course* listed within a program area. In these situations the following rule was applied. If districts answered "Yes" anywhere to any course listed within a program area the final answer was then coded as "Yes." This means that for these 95 cases, if a district answered "Yes" to a course listed anywhere within the program areas, then they are considered to have a Business or Industry Recognized partner related to the field serving on their Advisory Committee. However, if no course within a given program area was listed as a "Yes" then the response was coded as a "No", meaning there was no Business or Industry partner related to the field serving on their Advisory Committee.

Findings

Although the highest percentage of Business and Community Involvement on an Advisory Committee was reported in the area of Public Affairs/Community Awareness (100%), keep in mind this represents 2 programs. The second highest level of involvement in Advisory

Committees was reported in the area of Hospitality and Culinary Arts (57.9%, n=11 programs). Overall, Business and Industry's participation on CTE program Advisory Committees was found to be higher than that of either Community Organizations, or Postsecondary Faculty across all program areas. The lowest overall level of partnerships was reported in the areas of Career Exploration and STEM programs.

Figure 4. Percent of programs in each program area that have Business & Industry, Community Organization, and/or Postsecondary Faculty partners related to the field serving on their Advisory Committee (see Appendix H, Table 15 for additional details).
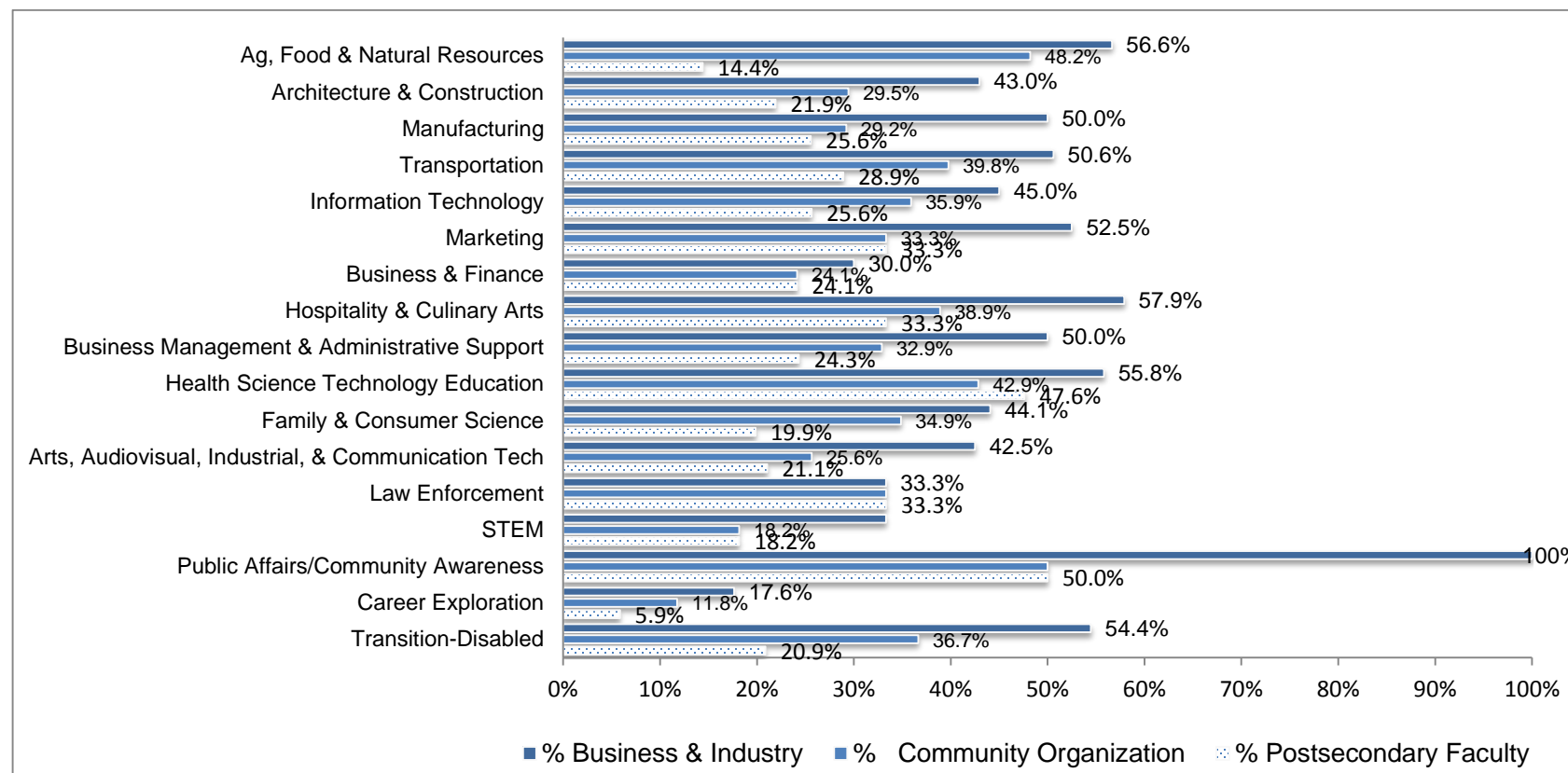
In order to meet program approval requirements, districts can and often do have a school-wide Advisory Committee for all of their CTE programs, as opposed to program specific partnerships. This is particularly true in rural communities.

Partnership work within or as a part of approved programming: experiential learning

Definitions

Experiential Learning: the process of making meaning or learning from direct experiences such as job shadowing, field trips, mentorships, internships, apprenticeships, work-based learning, work-based learning handicapped/transition disabled, or service learning.

Internship: an opportunity offered by an employer to potential employees, often called "interns," to work at a firm for a fixed/limited period of time. Internships may be called "placements," "work placements" or "industrial placements."

Pre-Apprenticeship: a program that teaches basic technical and job-readiness skills for a designated occupation or occupational sector, to prepare participants for Registered Apprenticeship training. PA normally features a classroom and/or lab setting, but may also involve work-site visits, job-shadowing, or other activities outside the program facility, to provide exposure to the work environment for the targeted occupation(s).

Service Learning: a teaching strategy that utilizes learning, which engages all learners in hands-on academic projects in the community. This helps students meet learning objectives and strengthens communities by addressing genuine community needs.

Work-Based learning, Youth Apprenticeship, or Work Experience: Handicap/Transition Disabled

Work-Based Learning: learning in the context of a work-related environment. Through work-based learning, students acquire knowledge and skills through performing tasks while placed in a work experience within a CTE career field. Students develop employment-related competencies through their placement experience. Work-based learning is often offered in conjunction with classroom or related learning

Youth Apprenticeship: a learning system that prepares students for work by giving them a combination of classroom instruction and paid on-the-job training. Students might go straight into the job market from an apprenticeship. In this education model, students obtain a set of well-defined occupational standards, skills, and abilities by learning concepts in the classroom and integrating those concepts in a work setting. Youth Apprenticeship requires collaboration between business and industry partnerships and education.

Work Experience Learning Handicapped/Transition Disabled: Work experience opportunities for students who may have a learning disability, handicap, or who may qualify as transition/disabled. This is a qualification-based program.

Table 7. Statewide; the number and percent of students who participated in the following programs: Work-Based Learning, Youth Apprenticeships, or Handicap, Transition/Disabled.

Program	Number	Percent*	Percent**
Work-Based Learning	9,325	6.0%	NA
Youth Apprenticeship	319	0.2%	NA
Handicap, Transition/Disabled	3,080	2.0%	14.8%

*Percent is based on 9-12th grade district enrollment.
**Percent is based on 9-12th grade Special Education district enrollment.
The length of course or work-based experience was not quantified in the response

Part 2: Equipment Inventory

Based on the definition used to complete Equipment Approval requests and for the purposes of this data collection process, "equipment" is defined as: a) one item worth $400 or more, b) multiple items totaling $400 or more, or, c) items considered to be "attractive equipment" (ex. cameras, computers, iPads, high-tech and/or portable). Districts were asked to list the exact number of equipment items currently available during this school year (2014-15) at their building site. Furthermore, districts were advised not to list any duplicate items across programs. For example, if the building had one 3D printer available, they should count that 3D printer once, even if the 3D printer is used for multiple programs.

Please recall that some Career Clusters were merged within the Part 2: Equipment Inventory in order to expedite the data collection process; these combinations are referenced in the Career Cluster number (CC#). Finally, since there are generally no specific industry standards for facilities for the following areas, there were no equipment resources requested for the following career cluster/program areas: STEM, Education and Training, Government Public Affairs/Community Awareness, Career Exploration, and Transition Disabled. See Appendix H, Table 16 for additional information on the age distribution of equipment items reported.

Table 8. Number of equipment items, percent capacity and need, percent of equipment meeting current industry standards according to each program area.

CC#	Career Cluster/Program Area	# of existing equipment items	# of additional items needed to implement the program effectively	Total# needed plus existing equipment items	% Capacity*	% Need	% of equipment meeting current Industry Standards
1	Ag, Foods, and Natural Resources	4,510	1,530	6,040	74.7%	25.3%	53.3%
2	Architecture and Construction	8,989	2,482	11,471	78.4%	21.6%	65.4%
3	Manufacturing	5,484	2,100	7,584	72.3%	27.7%	59.1%
4	Transportation	2,481	805	3,286	75.5%	24.5%	54.3%
5, 12	Communications and Information Tech	11,830	3,110	14,940	79.2%	20.8%	63.3%
6, 7, 9	Business and Marketing	9,232	2,845	12,077	76.4%	23.6%	66.7%
8	Hospitality and Culinary Arts	1,124	431	1,555	72.3%	27.7%	59.7%
10	Health Science Technology Ed	3,325	1,138	4,463	74.5%	25.5%	72.2%

CC#	Career Cluster/Program Area	# of existing equipment items	# of additional items needed to implement the program effectively	Total# needed plus existing equipment items	% Capacity*	% Need	% of equipment meeting current Industry Standards
11a	Family and Consumer Science	10,349	3,785	14,134	73.2%	26.8%	41.1%
11b	Early Childhood	933	249	1,182	78.9%	21.1%	29.4%
11c	Textiles and Apparel	640	381	1,021	62.7%	37.3%	46.1%
13	Law Enforcement	5	4	9	55.6%	44.4%	100.0%
	Total=	58,902	18,860	77,762	75.7%	24.3%	Average=59.2%

Relationships with industry and postsecondary partners

Table 9. Percent of equipment items which were either partially or fully funded (donated) by industry or postsecondary partners.

CC#	Career Cluster/Program Area	# of existing equipment items reported	# of items either partially or fully funded (i.e. donated) by industry or postsecondary partners	% of equipment items donated
1	Ag, Foods, and Natural Resources	4,510	338	7.5%
2	Architecture and Construction	8,989	396	4.4%
3	Manufacturing	5,484	459	8.4%
4	Transportation	2,481	71	2.9%
5	Communications and Information Tech	11,830	721	6.1%
6	Business and Marketing	9,232	217	2.4%
7	Hospitality and Culinary Arts	1,124	138	12.3%
8	Health Science Technology Ed	3,325	271	8.2%
9	Family and Consumer Science	10,349	441	4.3%
10	Early Childhood	933	26	2.8%
11	Textiles and Apparel	640	16	2.5%
12	Law Enforcement	5	0	0.0%

Necessary updates to Building Facilities

Facilities: Refers to any structural or site related updates needed to meet building and/or safety codes. An example of a facility update may include a proper and industry standard ventilation system for welding or construction courses.

Table 10. Percent of responses indicating the needed facilities updates for CTE courses and programs.

CC#	Career Cluster/Program Area	Updates needed within:			
		the next year	the next 2-5 years	6 years or more	Does not apply
1	Ag, Food & Natural Resources (n=142)	27.5%	38.7%	14.1%	19.7%
2	Architecture & Construction (n=208)	31.3%	40.4%	13.5%	14.9%
3	Manufacturing (n=150)	32.0%	40.0%	14.0%	14.0%
4	Transportation (n=94)	29.8%	40.4%	16.0%	13.8%
5	Communications & Information Technology (n=131)	25.2%	26.0%	10.7%	38.2%
6	Business & Marketing (n=190)	24.7%	24.2%	6.8%	44.2%
7	Hospitality & Culinary Arts (n=46)	21.7%	37.0%	8.7%	32.6%
8	Health Science Technology Education (n=50)	22.0%	44.0%	14.0%	20.0%
9	Family & Consumer Science (n=188)	25.5%	34.6%	8.5%	31.4%
10	Early Childhood (n=45)	13.3%	33.3%	2.2%	51.1%
11	Textiles & Apparel (n=55)	21.8%	27.3%	12.7%	38.2%
12	Law Enforcement (n=6)	0%	66.7%	0%	33.3%

Student Barriers

Districts were asked to consider barriers to student access within their district relative to increasing participation in CTE courses and programs. Districts were provided with a list of potential barriers, and given the option to include additional information if needed. The list in Table 11 below indicates the frequency that each topic was determined to be a factor in increasing participation in CTE courses and programs. Additionally, the "Open-Text Response Breakdown" table indicates the additional information provided by respondents. The table displays the items and the frequency of items identified as barriers in descending order.

281 districts responded to these items. However, because districts were asked to enter individual data for each 9th-12th grade school, there were 348 total responses. The additional cases were left in the analysis because different school sites within a district appeared to exhibit different response patterns. The percent is calculated in the table by dividing the count by the total number of responses (N=348).

There were 38 open response write-in comments. These comments were arranged into themes. In order to obtain a percentage, the number of comments within each theme was then divided by the total number of comments.

Table 11. Count and percent of responses documenting the most common barriers to student participation in CTE programs and courses.

Possible Student Barrier	Count	Percent
Funding: School funding is not adequate to grow or sustain CTE programs	276	79.3%
Licensure (existing teachers): Lack of existing teachers pursuing and/or obtaining CTE licensing	257	73.9%
Equipment: There is not enough equipment available to operate more sections of CTE programs	208	59.8%
Scheduling: flexibility in the student's day to access programs	200	57.5%
Staff Recruitment (supply chain): CTE licensed teachers are not available to staff programs	195	56.0%
Facilities: The facilities at our school are not adequate to add additional career and technical education offerings	189	54.3%
Student Currency: lack of dual credit options for students (ex. credit for both High School graduation *and* postsecondary credit)	89	25.6%
Documentation Process: Staff hours needed to complete state and federal paperwork requirements presents a challenge for program development	84	24.1%
Student Interest: There is little desire in our school to support programs that are not considered four-year college prep programs	64	18.4%
Involvement/Interest: lack of local business, industry, and/or community involvement	50	14.4%
Student Accessibility: Matching student interests with CTE program availability	48	13.8%
Other (write in) comments:		
Difficulty meeting graduation requirements	17	44.7%
Obstacles to obtaining the appropriate CTE license	5	13.2%
Value places on college-ready not career ready	5	13.2%
Funding and local partnerships with program areas	5	13.2%
Local challenges	4	10.5%
Project based learning, does not offer CTE	2	5.2%

Appendix A
Memo to Superintendents

October 24, 2014

Dear Superintendents and Charter School Directors:

We are conducting a program inventory of Career and Technical Education (CTE). Please identify a lead contact in your district to manage the data collection for this inventory.

We will be taking stock of:
- All CTE approved programs and related courses.
- All resources and equipment housed within your district or charter school, such as stoves, table saws, etc.

Your participation is very important. The inventory will help us understand what resources you have and what your financial needs are, so that we can better serve your students. Without an accurate view of Minnesota's CTE programs and equipment, we cannot plan and allocate resources adequately.

Please e-mail the following information to mde.cte@state.mn.us by **November 4, 2014**.
- District Name
- District Number
- Contact Name
- Contact Phone Number
- Contact E-mail Address

The ideal contact person is someone who works closely with your CTE program. They will provide a list of:
- CTE courses currently offered within your district including any CTE courses offered at an ALC, ALP, and/or cooperative.
- CTE courses awarding articulation/credit agreements, postsecondary credentials, concurrent enrollment, core academic credit.
- CTE courses that are delivered fully or partially online and whether the course is taught by a local college or third party vendor.
- Existing resources, equipment, and equipment needs.
- The status of special facility needs, such as ventilation systems.

Your contact designee will receive a notification when the data entry system is open. Final data submission is due on **December 5, 2014**.
If you have any questions about the inventory process, e-mail mde.cte@state.mn.us.

Thank you for your time and participation. Your feedback is very important to us and to the future of CTE in Minnesota. It is only with your help that the inventory can be meaningful and inform future funding and resourcing needs.
Best regards,

Dr. Brenda Cassellius
Commissioner
Minnesota Department of Education

Appendix B
Memo to Primary Contacts

Note that additional webinar training times were added during the data collection process.

To: Primary Contact for CTE Inventory

Thank you for assisting us in collecting data from your school district for the CTE Program Inventory. We are very excited that your help and expertise will provide us the opportunity to create a comprehensive status report of high school career and technical education and related areas for the Minnesota legislature.

There will be two parts, each collected by a different system, to the data collection process. **Part 1 is the course inventory.** This data will be uploaded to the CTE Legislated Program Inventory Share Point site. Directions are attached to this email. Please follow these directions in order to create an account as soon as possible. The SharePoint Site will be open beginning first thing Monday morning (11/10/14).

Part 2 is the Equipment Inventory. This data will be entered into Survey Gizmo. The link to the Survey Gizmo site will be sent directly to your e-mail account. Until you receive the link, a temporary electronic copy has been provided on the CTE Share Point Site. You can use this electronic copy to begin facilitating your data collection process; however, please note that the final data will need to be entered by you into Survey Gizmo.

MDE will host training Webinars for your assistance on both Friday, November 14, 2014 and Monday, November 17, 2014. Please see the training dates and times below. Please follow this link to attend the webinar.
CTE Inventory Training Webinars
Friday November 14, 2014
     9:00 a.m. Session number: 802 550 381
Monday November 17, 2014
     10:00 a.m. Session number: 809 460 181
     2:00 p.m. Session number: 802 711 763

Attendees will have the option to dial-in or receive a call back from the system.
Dial-in number: 1-888-742-5095
Conference Code: 7109455454
Please begin your inventory collection process by creating an account to gain access to the CTE Legislated Program Inventory Share Point Site. **All data will be due for submission by December 5, 2014.**

Thank you for your efforts with this unprecedented data collection process. You can be assured that the work you do to support career and technical education opportunities for our Minnesota students is appreciated and will impact CTE across Minnesota for years to come.

If you have any questions please feel free to contact us at MDE.CTE-ProgramInventory@state.mn.us This e-mail account has been set up specifically to provide assistance with anything related to the CTE Program Inventory.

Appendix C
Part 1: Course Inventory. List of questions.

Within the following list, "given" means this information was provided to schools and districts if/when available. For example, all information on record with MDE was pre-populated into each individual district's data collection file then saved to the CTE Program Inventory SharePoint site so that a district could download their Course Inventory file and begin the data collection process. Districts were asked to update the course inventory information according to their own course catalogs, as well as add to the file any courses which were not listed as being part of an Approved Program. Unless otherwise specified, each question listed below was answered for each course listed in a district's Course Inventory file.

Year 2013-14 (only) (given)

District # (given)

Type (given)

School District: Name (given)

Building#

Course Name (given)

Minnesota Common Course Catalog# (given)

Program# (given)

Course# (given)

CTE Approved (given where available)

Credits (given)

Hours (given)

Career Cluster (given)

Number of **Students participating** in this course last year

Number of **Students who completed** this course last year

There is an Industry Recognized Certificate available for this course? (Y=Yes, N=No)

Does this course lead to a Postsecondary Credential? (Y=Yes, N=No)

There is Concurrent Enrollment credit available for this course? (Y=Yes, N=No)

Is there an Articulation/Credit agreement for this course? (Y=Yes, N=No)

Your district's Graduation Standards can be met within this course? (Y=Yes, N=No)

This course is delivered fully or partially online? (F=Fully, P=Partially, N=Not online at all)

This course is taught by a local college or third-party vendor? (C=college, T=third-party vendor, N=Not applicable)

These questions were answered at the at the program area level (not for each individual course):

Is there a **Business & Industry Partner** related to this field on the Advisory Committee? (Y=Yes, N=No)

Is there a **Community Organization Partner** related to this field on the Advisory Committee? (Y=Yes, N=No)

Is there a **Postsecondary Faculty** related to this field on the Advisory Committee? (Y=Yes, N=No)

These questions represent summary data, and were not answered at either the program level or the course level:

Summary data of all district courses combined: Total # of Students who participated in all Work-Based Learning/Internships (e.g. On-the-Job Training)?

Summary data of all district courses combined: Total # of Students who participated in Youth Apprenticeship?

Summary of all district courses combined: Total # of Students who participated in Work Experience: Handicap, Transition/Disabled?

Appendix D
Part 1: Course Inventory Definitions provided to districts

Course Name: Enter in the name of the Course as it appears in your District's catalog

MN Common Course Catalog #: Please enter in any and all Common Course Catalog numbers available for the courses you list in this sheet

Program#: This relates to the Carl Perkins 6 digit Program Codes. If the course you are listing is not part of a CTE Approved Program, you do not need to enter in this number. Leave blank.

Course#: This relates to the Carl Perkins 2 digit Course Codes. If the course you are listing is not part of a CTE Approved Program, you do not need to enter in this number. Leave blank.

CTE Approved: Answer "Y" if these courses are on file with MDE as being part of an Approved Program. Otherwise, answer "N" for No.

Credits: Number of credits available for this course.

Hours: Number of course hours available for this course.

Career Cluster: Important! For all CTE courses not currently part of an approved program, you will need to assign a Career Cluster number. Please see the "Career Cluster Guide" for additional directions on how to assign this number to your district's courses (note: these codes were assigned as seen in all data tables).

Students Participating: Total number of students, during school year 2013-14, who enrolled in this course.

Students who Completed: Total number of students, during school year 2013-14, who earned a passing grade in this course.

Industry Recognized Certificate: Answer "Y" if an earned certificate would lead to a recognized skill or job opportunity. For example, a CNA certificate or American Welding Society certificate. Industry Recognized and Postsecondary Credential if needed. The focus is on Business & Industry, not postsecondary only. Can answer Yes to BOTH "Industry Recognized Certificate" and "Postsecondary Credential" if applicable. Answer "N" for No if not applicable.

Postsecondary Credential: Answer "Y" if credential consists of an industry-recognized certificate or certification, a certificate of completion of an apprenticeship, a license recognized by the State involved or Federal Government, or an associate or baccalaureate degree.

Concurrent Enrollment: Answer "Y" if students taking this course will receive transferable college credits (ex. PSEO, College in the Schools, Concurrent Enrollment, Dual-Credit); otherwise answer "N" for No.

Articulation/Credit agreement: Answer "Y" if students who take this course will be able to receive transferable college credits, once the student enrolls into the specific college with whom the agreement is held; otherwise answer "N" for No.

Graduation Standards: Answer "Y" if an Academic Standard(s) is met in this course, therefore a core Academic Credit is awarded to students; otherwise answer "N" for No.

Partially or Fully On-Line: Answer "P" if this course is offered Partially on-line. Answer "F" if this course is offered Fully online. Answer "N" if this course is Not taught online at all.

College or Third party vendor: Answer "C" if this course is taught at a local college. Answer "T" if this course is taught by a Third Party vendor (e.g. Cosmetology class taught at a local studio; Nursing class taught at a local Hospital). Answer "N" if this course is Not taught by either.

Appendix E
Part 2: Equipment Inventory, list of questions.

Blank excel files were provided to districts to use during their data collection process through the CTE Program Inventory SharePoint site. These excel files could be downloaded and shared across the district with all personnel who know about equipment resources. Data were collected individually for each program area. Once Equipment Inventory data were collected, the data were hand-entered into SurveyGizmo by school, in order to facilitate data extraction and analysis. Unless otherwise specified, listed below are the questions asked for each program area. Each question below was answered for each of the applicable program areas and equipment items listed in Appendix F.

Note that districts were able to enter ten additional "Other" equipment items within each program area; however, for the purposes of equality and consistency in reporting, those categories have been left out of this analysis.

Total # of each equipment item:

Based on the Total # of each equipment item, how many of those items are 0-9 years old:

Based on the Total # of each equipment item, how many of those items are 10-19 years old:

Based on the Total # of each equipment item, how many of those items are 20- years or older:

Based on the Total# of each equipment item, how many of those items, could be, but are not currently being used in a program:

Based on the total # of equipment items, how many of those items were either partially or fully funded (i.e. donated) by industry or postsecondary partners:

Based on the Total # of each equipment item, how many of those items meet current industry standards:

If additional equipment items are needed, list the exact number of each item needed in order to implement the program effectively:

This question was not answered relative to individual equipment items, instead it was asked relative to each program area selected by the respondent.
Overall, when thinking about your district's facilities, If your school were to receive updated equipment, would your facility meet OSHA requirements (?) electrical (?) ventilation (?) and/or other health and safety codes (?)
We would need to make classroom and/or building improvements:
Answer options:
Within the next year.
Within the next 2-5 years.
Within 6 years or more.
Does not apply to the equipment items listed within this Career Field.

Appendix F
Part 2: Equipment Inventory, list of equipment items

Directions and Definition of Equipment

Directions: The list below includes program-related equipment a) worth $400 or more each, b) totaling $400 for a single item if multiples of this item exist at your school, or c) an item is considered to be "attractive equipment" (e.g. cameras, computers, iPads, high-tech and/or portable, etc.). Please answer each question by indicating the exact number of equipment items available in your district **during this current school year**. If your district has multiple shops/classrooms, please list the total number of equipment items available at each building site.

Notes

Districts were advised "NO duplicate numbers." Meaning, in cases where an equipment item was present across multiple program lists, yet districts shared this particular equipment item across programs, districts were asked to only document the item once and to list it under whichever program area they discerned to be the most representative.

Districts were advised to document "only those computers which were used in service of CTE programs." For example, if the computer and computer-related equipment was not purchased as part of a larger district initiative, but instead purchased in support of CTE students and programs exclusively then these items should be counted. The same was true for any computer software programs.

List of Equipment Items (see next three pages).

List of Equipment Items

Ag, Foods, and Natural Resources
Air compressor
Arc welder
Band saw
Band saw (wood)
Benches
Chop saw
Cooler
Drill press
Flywheel remover
Fuel oil and engine storage
Gas welding equipment
GIS and/or GPS systems
Greenhouse
Grinders
Hydraulic power press
Ironworker
Land management-measuring pins
Lighting systems
Metal bending equipment
Metal shearing machine
Metalworking wave
Microscope
Parts washing station
Plasma cutter
Power nailers
Radial arm saw
Role bending in forming machine
Surface grinder
Survey equipment (transit tripods levels)
Table saw
Turning lathe (wood)
Valve ring compressor
Ventilation systems

Architecture & Construction
3-D printer
Air compressor
Architectural drafting stations
Band saw
Biscuit cutter
CNC Wood lathe
Computer (desktop, laptop, and/or tablet)
Computer numerical control (CNC) router
Drill press
Dust removal system
Jigsaw
Jointer
Laminate cutter
Laser cutter
Laser engraver
Mortise
Panel saw
Planer
Plotter
Power miter saw
Power nailer
Printer
Router table
SawStop table saw
Shaper
Spindle sander
Table saw
Tile saw
Timesaver sander
Wood lathe
Wood steamer
Wood welder

Manufacturing
3D printer
Acorn table
Air compressor
Bandsaw (vertical or horizontal)
Bar folder
Box and pan brake
CNC machining center (mill or lathe)
CNC plasma cutter
Computer (desktop, laptop, and/or tablet)
Drill press
EDM machine
Electrode welder simulator
Project Lead the Way: assembly kits
GMAW welder (MIG/wire feed)
Grinder
GTAW welder (TIG/heliarc)
Hydraulic shear
Laser cutter
Metal bender
Metal turning lathe
Milling machine
Notcher
Oxy-acetylene welder
Plasma cutter
Plotter
Robotic arm
Spot welder
Surface grinder
Tensile stress analyzer
Ventilation system
Vertical milling machine
Welding robot

Transportation
Air chisels
Air compressor
Air ratchet
Air tools
Battery charger/tester
Bench or pedestal grinder
Brake lathe (bench with disc and drums service attachments)
Brake lathe (on car)
Compression tester

Crane
Creeper
Cylinder leakage tester
Engine analyzer
Engine stand
Exhaust removing system
Floor jack
Hydraulic press adapters
Hydraulic pressure gauge set
Master puller set
Refrigerant charging system
Refrigerant recovery/recyclable machine
Rod Puller
Sandblaster
Scan tool
Serpentine belt tension or tools
Strut/spring compressor tool
Tire mounting machine
Tone the power balance tester
Transmission jack
Valve grinder

Communication & Information Technology
3-D printer
Boe-bot equipment
Computer (desktop, laptop, and/or tablet)
Digital cameras
Digital drafting software
Drawing tablet
Film cameras
Laser printers
Light table
Offset (duplicator) printing press
Oscilloscope
Photographic enlarger

Platemaker
Plotter
Power paper cutter
Power supplies
Process camera
Publishing software
Screen coater
Screen printing press
Studio portrait lights
Video camera(s)
Video editor
Video projector

Business and Marketing
Bank machines
Cameras
Cash machine
Cash register
Computer cameras
Computers (Desktop, Laptop and/or tablet)
Display cases
Document Cameras
Fax Machines
Interactive white boards
Laminating equipment
LCD Projectors
Merchandising display cases
Microphones and speakers
Recording devices
Routers
Scanners
Servers
Sound systems
Specialized printing equipment
Video cameras
Video editing equipment

Hospitality and Culinary Arts
15-qt fry kettle
25 cu. ft. reach-in freezer, stainless steel front

2-slice, commercial, electric toaster
47 cu. ft. refrigerator with two doors
8 lb. baker's dough scale
Bakeware set, commercial
Cash register
Chafing pans, stands, covers
Coffee maker, 2-pot, 2 built-in warmers, automatic with decanters
Commercial dishwasher, w/dish racks and dish tables
Computer (desktop, laptop, and/or tablet)
Convection oven w/stand or Combi-oven
Cutlery set, including knife rack and cutting board
Dish storage unit, flat shelving, 4 shelves high 12"x15" wide and 6' long
Equipment stand, stainless steel, 24" x 8' x 24"
Exhaust system w/automatic fire extinguisher
Flatware set for plate and table service for 60, including baskets and trays
Food chopper/grinder- table top, hand operated, stainless steel w/5 cones
Garbage disposal, commercial
Grill with thermostats
Hand washing, single bowl sink
Hanging utensil rack
Microwave cookware set

Stainless steel, 3 compartment sink or commercial dishwasher
Steamer or Combi-oven
Stove/Range with ventilation system
Utility carts

Health Science Technology Education
Adjustable bed
AED trainers
Anatomy models
Blood pressure cuffs
Cervical collars
Commode
Computer (desktop, laptop, and/or tablet)
Digital camera
Emergency Blanket
Mannequin
Microscope
Ophthalmoscopes/otoscope
Scoop stretcher
Stethoscope(s)
Stretcher
Various replicas of human body parts
Walker
Wheelchair

Family and Consumer Science
Computer (desktop, laptop, and/or tablet)
Cooktop
Deep fryer
Demonstration table
Dishwasher
Embroidery machine
Freezer
Griddle
Grow lights
Knife block
Large motor skill toys
Laundry dryer

Laundry washer
Oven
Plotter
Printer
Real care baby
Screen printing press
Sewing machine
Small motor skill toys
Serger
Stainless steel table
Standing mixer
Steam kettle
Stove/Range
Ventilation hood

Early Childhood
Computer (desktop, laptop, and/or tablet)
Digital camera
Large motor skill toys
Laser printer, 1200x1200 dpi, 35 ppm, network capable
Shelving for toy storage
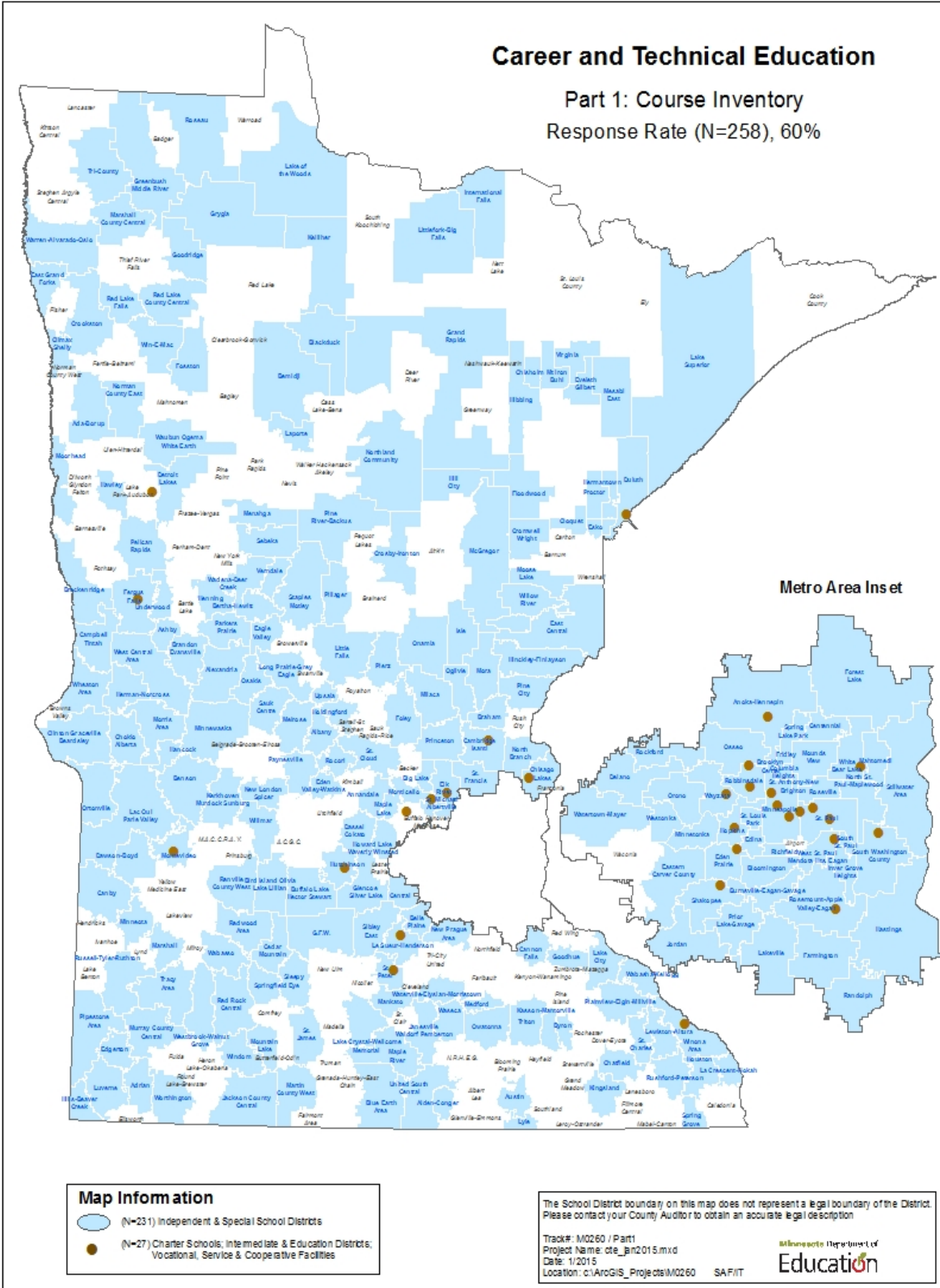Small motor skill toys
Video recorder

Textiles and Apparel
36"-high cutting table
Clothes dryer
Clothes iron, commercial
Clothes washer
Computer (desktop, laptop, and/or tablet)
Digital camera
Ironing board
Ironing press
Laser printer
Mannequin (male/female)
Padded pressing table
Pegboard with pegs
Pick glasses/linen tester
Portable storage cabinet with small drawers
Rotary cutter and mat

Law Enforcement
Finger print sets
Digital Camera(s)

Appendix G
Response Rate Maps

Career and Technical Education

Part 1: Course Inventory

Response Rate (N=258), 60%

Metro Area Inset

Map Information

⬭ (N=231) Independent & Special School Districts

● (N=27) Charter Schools; Intermediate & Education Districts; Vocational, Service & Cooperative Facilities

The School District boundary on this map does not represent a legal boundary of the District. Please contact your County Auditor to obtain an accurate legal description

Track#: M0260 / Part1
Project Name: cte_jan2015.mxd
Date: 1/2015
Location: c:\ArcGIS_Projects\M0260   SAF/IT

Minnesota Department of Education

Districts and Schools who participated in Part 1: Course Inventory, "Yes"

Ada-Borup
Adrian
Albany
Alden-Conger
Alexandria
Annandale
Anoka-Hennepin
Ashby
Austin
Belle Plaine
Bemidji
Benson
Bertha-Hewitt
Big Lake
Bird Island Olivia Lake Lillian
Blackduck
Bloomington
Blue Earth Area
Braham
Brandon Evansville
Breckenridge
Brooklyn Center
Buffalo Lake Hector Stewart
Burnsville-Eagan-Savage
Byron
Cambridge Isanti
Campbell Tintah
Canby
Cannon Falls
Cedar Mountain
Centennial
Central
Chatfield
Chisago Lakes
Chisholm
Chokio Alberta
Climax-Shelly
Clinton Graceville Beardsley
Cloquet
Columbia Heights
Cromwell Wright
Crookston
Crosby-Ironton
Dassel Cokato
Dawson-Boyd
Delano
Detroit Lakes
Duluth
Eagle Valley
East Central
East Grand Forks
Eastern Carver County
Eden Prairie
Eden Valley-Watkins
Edgerton
Edina
Elk River

Esko
Eveleth Gilbert
Farmington
Fergus Falls
Floodwood
Foley
Forest Lake
Fosston
Fridley
G.F.W.
Glencoe Silver Lake
Goodhue
Goodridge
Grand Rapids
Greenbush Middle River
Grygla
Hancock
Hastings
Hawley
Henning
Herman-Norcross
Hermantown
Hibbing
Hill City
Hills-Beaver Creek
Hinckley-Finlayson
Holdingford
Hopkins
Houston
Howard Lake Waverly Winsted
Hutchinson
International Falls
Inver Grove Heights
Isle
Jackson County Central
Janesville Waldorf Pemberton
Jordan
Kasson-Mantorville
Kelliher
Kerkhoven-Murdock-Sunburg
Kingsland
La Crescent-Hokah
Lac Qui Parle Valley
Lake City
Lake Crystal-Welcome Memorial
Lake of the Woods
Lake Superior
Lakeville
Laporte
Le Sueur-Henderson
Lewiston-Altura
Little Falls
Littlefork-Big Falls
Long Prairie-Grey Eagle
Luverne
Lyle
Mahtomedi

Mankato
Maple Lake
Maple River
Marshall
Marshall County Central
Martin County West
McGregor
Medford
Melrose
Menahga
Mesabi East
Milaca
Minneapolis
Minneota
Minnetonka
Minnewaska
Montevideo
Monticello
Moorhead
Moose Lake
Mora
Morris Area
Mounds View
Mountain Lake
Mt Iron Buhl
Murray County Central
New London Spicer
New Prague Area
Norman County East
North Branch
North St. Paul-Maplewood
Northland Community
Ogilvie
Onamia
Orono
Ortonville
Osakis
Osseo
Owatonna
Parkers Prairie
Paynesville
Pelican Rapids
Pierz Pillager Pine City
Pine River-Backus
Pipestone Area
Plainview-Elgin-Millville
Princeton
Prior Lake-Savage Proctor
Randolph
Red Lake County Central Red
Lake Falls
Red Rock Central
Redwood Area
Renville County West
Richfield
Robbinsdale
Rockford

Rocori
Roseau
Rosemount-Apple Valley-Eagan
Roseville
Rushford-Peterson
Russell-Tyler-Ruthton
Sauk Centre
Sebeka
Shakopee
Sibley East
Sleepy Eye
South St. Paul
South Washington
County Spring Grove
Spring Lake Park
Springfield
St. Anthony-New Brighton
St. Charles

St. Cloud
St. Francis
St. James
St. Louis Park
St. Michael Albertville
St. Paul
St. Peter
Staples Motley
Stillwater Area
Tracy Area
Tri-County
Triton Underwood
United South Central
Upsala
Verndale
Virginia
Wabasha-Kellogg
Wabasso

Wadena-Deer Creek
Warren-Alvarado-Oslo Waseca
Watertown-Mayer
Waterville-Elysian-Morristown
Waubun-Ogema
White Earth Wayzata
West Central Area
West St. Paul Mendota Hts.
Eagan
Westbrook-Walnut Grove
Westonka
Wheaton Area
White Bear Lake Willmar
Willow River
Windom
Win-E-Mac
Winona Area
Worthington

Districts and Schools who did not participate in the Part 1: Course Inventory, "No"

A.C.G.C.
Aitkin
Albert Lea
Badger
Bagley
Barnesville
Barnum
Battle Lake
Becker
Belgrade-Brooten-Elrosa
Blooming Prairie
Brainerd
Browerville
Browns Valley
Buffalo Hanover Montrose
Butterfield-Odin
Caledonia
Carlton
Cass Lake-Bena
Clearbrook-Gonvick
Cleveland
Comfrey
Cook County
Deer River
Dilworth-Glyndon-Felton
Dover-Eyota
Ellsworth
Ely
Fairmont Area
Faribault
Fertile-Beltrami
Fillmore Central
Fisher
Franconia

Frazee-Vergas
Fulda
Glenville-Emmons
Granada-Huntley-East Chain
Grand Meadow
Greenway
Hayfield
Hendricks
Heron Lake-Okabena
Ivanhoe
Kenyon-Wanamingo
Kimball
Kittson Central
Lake Benton
Lake Park-Audubon
Lakeview
Lancaster
Lanesboro
Leroy-Ostrander
Lester Prairie
Litchfield
Lynd
M.A.C.C.R.A.Y.
Mabel-Canton
Madelia
Mahnomen
Milroy
N.R.H.E.G.
Nashwauk-Keewatin
Nett Lake
Nevis
New Ulm
New York Mills
Nicollet

Norman County West
Northfield
Park Rapids
Pequot Lakes
Perham-Dent
Pine Island
Pine Point
Prinsburg
Red Lake
Red Wing
Rochester
Rothsay
Round Lake-Brewster
Royalton
Rush City
Sartell-St. Stephen
Sauk Rapids-Rice
South Koochiching
Southland
St. Clair
St. Louis County
Stephen Argyle Central
Stewartville
Swanville
Thief River Falls
Tri-City United
Truman
Ulen-Hitterdal
Waconia
Walker Hackensack Akeley
Warroad
Wrenshall
Yellow Medicine East
Zumbrota-Mazeppa

Charter Schools, Intermediate & Education Districts, Vocational, Service & Cooperative Facilities who participated in the Part1: Course Inventory, "Yes"

Avalon School
Bluesky Charter
Eagle Ridge Academy
Great River School
Harbor City International ISD
287
ISD 917
Kaleidoscope Charter
Lake Agassiz Special Ed.
Cooperative
Lakes Country Service Coop
Lionsgate Academy
Math & Science Academy
Minnesota Internship Center
Minnesota New Country
Minnesota Transitions
MN River Valley Education
District
MN Valley Education District
NE Metro ISD 916
New Century
Northwest Passage High
Oak Land Vocational
Cooperative
Prairie Seeds Academy
Riverway Learning Community
Spectrum High
St. Paul Conservatory
Performing Artists
SW Metro Educational Coop
TRIO Wolf Creek
Ubah Medical Academy
West Metro Education Program
Wright Technical Center

Career and Technical Education

Part 2: Equipment Inventory
Response Rate (N=281), 65%

Metro Area Inset
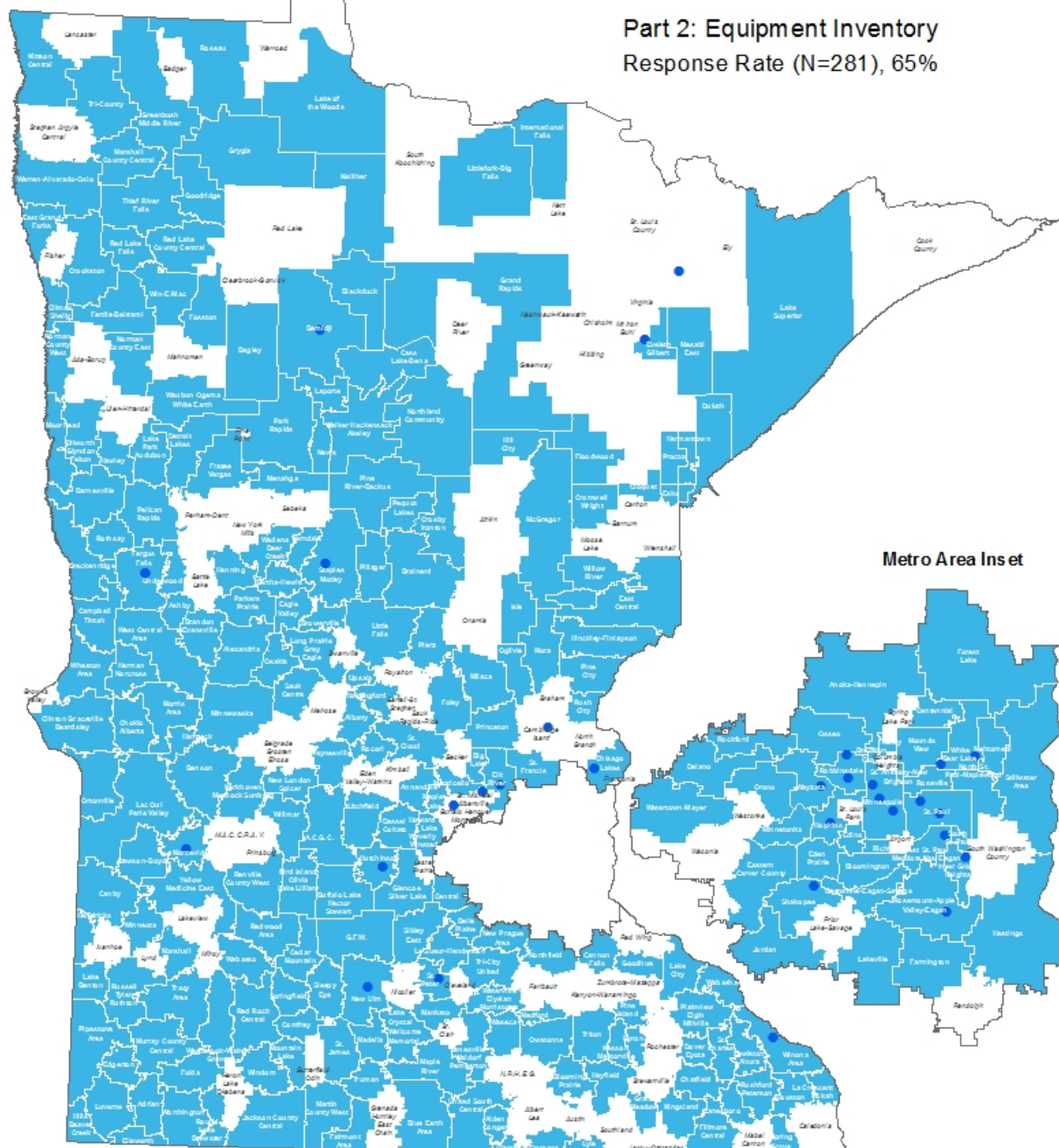
Map Information

- (N=249) Independent & Special School Districts
- (N=32) Charter Schools; Intermediate & Education Districts; Vocational, Service & Cooperative Facilities

The School District boundary on this map does not represent a legal boundary of the District. Please contact your County Auditor to obtain an accurate legal description.

Track#: M0260 / Part2
Project Name: cte_jan2015.mxd
Date: 1/2015
Location: c:\ArcGIS_Projects\M0260   SAF/IT

Minnesota Department of
Education

Districts and Schools who participated in Part 2: Equipment Inventory, "Yes"

A.C.G.C.
Adrian
Albany
Alden-Conger
Alexandria
Annandale
Anoka-Hennepin
Ashby
Bagley
Barnesville
Belle Plaine
Bemidji
Benson
Bertha-Hewitt
Big Lake
Bird Island Olivia Lake Lillian
Blackduck
Blooming Prairie
Bloomington
Blue Earth Area
Brainerd
Brandon Evansville
Breckenridge
Brooklyn Center
Browerville
Buffalo Lake Hector Stewart
Burnsville-Eagan-Savage
Byron
Campbell-Tintah
Canby
Cannon Falls
Cass Lake-Bena
Cedar Mountain
Centennial
Central
Chatfield
Chisago Lakes
Chokio Alberta
Climax-Shelly
Clinton Graceville Beardsley
Cloquet
Comfrey
Cromwell Wright
Crookston
Crosby-Ironton
Dassel Cokato
Dawson-Boyd
Delano
Detroit Lakes
Dilworth-Glyndon-Felton
Dover-Eyota
Duluth
Eagle Valley
East Central
East Grand Forks
Eastern Carver County
Eden Prairie

Edgerton
Edina
Elk River
Ellsworth
Esko
Eveleth Gilbert
Fairmont Area
Farmington
Fergus Falls
Fertile-Beltrami
Fillmore Central
Floodwood
Foley
Forest Lake
Fosston
Frazee-Vergas
Fridley
Fulda
G.F.W.
Glencoe Silver Lake
Glenville-Emmons
Goodhue
Goodridge
Grand Meadow
Grand Rapids
Greenbush Middle River
Grygla
Hancock
Hastings
Hawley
Hayfield
Hendricks
Henning
Herman-Norcross
Hermantown
Hill City
Hills-Beaver Creek
Hinckley-Finlayson
Holdingford
Hopkins
Houston
Howard Lake Waverly Winsted
Hutchinson
International Falls
Inver Grove Heights
Isle
Jackson County Central
Janesville Waldorf Pemberton
Jordan
Kasson-Mantorville
Kelliher
Kerkhoven-Murdock-Sunburg
Kingsland
Kittson Central
La Crescent-Hokah
Lac Qui Parle Valley
Lake Benton

Lake City
Lake Crystal-Wellcome
Memorial
Lake of the Woods
Lake Park-Audubon
Lake Superior
Lakeville
Lanesboro
Laporte
Le Sueur-Henderson
Lewiston-Altura
Litchfield
Little Falls
Littlefork-Big Falls
Long Prairie-Grey Eagle
Luverne
Lyle
Madelia
Mahtomedi
Mankato
Maple Lake
Maple River
Marshall
Marshall County Central
Martin County West
McGregor
Medford
Menahga
Mesabi East
Milaca
Minneapolis
Minneota
Minnetonka
Minnewaska
Montevideo
Monticello
Moorhead
Mora
Morris Area
Mounds View
Mountain Lake
Murray County Central
Nevis
New London Spicer
New Prague Area
New Ulm
Norman County East
Norman County West
North St. Paul-Maplewood
Northfield
Northland Community
Ogilvie
Orono
Ortonville
Osakis
Osseo
Owatonna

Park Rapids
Parkers Prairie
Paynesville
Pelican Rapids
Pequot Lakes
Pierz
Pillager
Pine City
Pine Island
Pine River-Backus
Pipestone Area
Plainview-Elgin-Millville
Princeton
Proctor
Red Lake County Central
Red Lake Falls
Red Rock Central
Redwood Area
Renville County West
Richfield
Robbinsdale
Rockford
Rocori
Roseau
Rosemount-Apple Valley-Eagan
Roseville
Rothsay

Round Lake-Brewster
Rush City
Rushford-Peterson
Russell-Tyler-Ruthton
Sauk Centre
Shakopee
Sibley East
Sleepy Eye
South St. Paul
Spring Grove
Springfield
St. Anthony-New Brighton
St. Charles
St. Cloud
St. Francis
St. James
St. Paul
St. Peter
Staples Motley
Stillwater Area
Thief River Falls
Tracy Area
Tri-City United
Tri-County
Triton
Truman
Underwood

United South Central
Upsala
Verndale
Wabasha-Kellogg
Wabasso
Wadena-Deer Creek
Walker Hackensack Akeley
Warren-Alvarado-Oslo
Waseca
Watertown-Mayer
Waterville-Elysian-Morristown
Waubun-Ogema-White Earth
Wayzata
West Central Area
West St. Paul Mendota Hts.
Eagan
Westbrook-Walnut Grove
Wheaton Area
White Bear Lake
Willmar
Willow River
Windom
Win-E-Mac
Winona Area
Worthington
Yellow Medicine East

Districts and Schools who did not participate in Part 2: Equipment Inventory, "No"

Ada-Borup
Aitkin
Albert Lea
Austin
Badger
Barnum
Battle Lake
Becker
Belgrade-Brooten-Elrosa
Braham
Browns Valley
Buffalo Hanover Montrose
Butterfield-Odin
Caledonia
Cambridge Isanti
Carlton
Chisholm
Clearbrook-Gonvick
Cleveland
Columbia Heights
Cook County
Deer River
Eden Valley-Watkins
Ely
Faribault
Fisher
Franconia
Granada-Huntley-East Chain
Greenway

Heron Lake-Okabena
Hibbing
Ivanhoe
Kenyon-Wanamingo
Kimball
Lakeview
Lancaster
Leroy-Ostrander
Lester Prairie
Lynd
M.A.C.C.R.A.Y.
Mabel-Canton
Mahnomen
Melrose
Milroy
Moose Lake
Mt Iron Buhl
N.R.H.E.G.
Nashwauk-Keewatin
Nett Lake
New York Mills
Nicollet
North Branch
Onamia
Perham-Dent
Pine Point
Prinsburg
Prior Lake-Savage
Randolph

Red Lake
Red Wing
Rochester
Royalton
Sartell-St. Stephen
Sauk Rapids-Rice
Sebeka
South Koochiching
South Washington County
Southland
Spring Lake Park
St. Clair
St. Louis County
St. Louis Park
St. Michael Albertville
Stephen Argyle Central
Stewartville
Swanville
Ulen-Hitterdal
Virginia
Waconia
Warroad
Westonka
Wrenshall
Zumbrota-Mazeppa

Charter Schools, Intermediate & Education Districts, Vocational, Service & Cooperative Facilities who participated in the Part 2: Equipment Inventory, "Yes"

AFSA High
Bluesky Charter
East Range Academy Tech Science
Fergus Falls Area Special Ed. Cooperative
Freshwater Ed. District
Great River School
ISD 287
ISD 917
Kaleidoscope Charter
Lakes Country Service Coop
Lionsgate Academy
Minnesota Internship Center
Minnesota Transitions
MN River Valley Education District
MN Valley Education District
NE Metro ISD 916
New Century
Oak Land Vocational Cooperative
Prairie Seeds Academy
River Bend Education District
Riverway Learning Community
Spectrum High
St. Paul Conservatory Performing Artists
STEP Academy
SW Metro Educational Coop
TRIO Wolf Creek
Ubah Medical Academy
Vermilion Country School
Voyageurs Expeditionary
West Metro Education Program
Wright Technical Center

Appendix H
Additional Data Tables

Table 12. Number and percent of student participation in CTE courses during school year 2013-14. Percentage of student completion in those same CTE courses.

CC#	Career Cluster/Program Area	# Participation	% Participation	% Completion
1	Ag, Food & Natural Resources	24,823	11.3%	95.1%
2	Architecture & Construction	21,785	9.9%	94.0%
3	Manufacturing	10,518	4.8%	94.3%
4	Transportation	11,606	5.3%	93.1%
5	Information Technology	3,337	1.5%	88.4%
6	Marketing	11,951	5.5%	96.7%
7	Business & Finance	7,203	3.3%	94.8%
8	Hospitality & Culinary Arts	2,155	1.0%	84.1%
9	Business Management & Administrative Support	55,063	25.1%	92.1%
10	Health Science Technology Education	6,494	3.0%	94.7%
11	Family & Consumer Science	57,891	26.4%	94.3%
12	Arts, Audiovisual, Industrial, & Communication Technology	18,715	8.5%	91.5%
13	Law Enforcement	1,271	0.6%	98.0%
14	Science, Technology, Engineering, and Mathematics	1,151	0.5%	97.0%
16	Public Affairs/Community Awareness	187	0.1%	82.4%
17	Career Exploration	2,048	0.9%	80.0%
18	Transition-Disabled	11,961	5.5%	91.9%

*Participation rate was calculated by dividing the rate of participation districts reported by total 9th-12th grade district enrollment.
**Completion rate was calculated by dividing the rate of participation reported by districts by the rate of completion in those same CTE courses.

Table 13. Advisory Committees. Number and percent of programs, in each program area, which reported having particular individuals related to their program field, serving on an Advisory Committee.

CC#	Career Cluster/Program Area	# Business & Industry	# Community Organization	# Post-secondary Faculty	% Business & Industry	% Community Organization	% Post-secondary Faculty
1	Ag, Food & Natural Resources	64	54	16	56.6%	48.2%	14.4%
2	Architecture & Construction	64	43	32	43.0%	29.5%	21.9%
3	Manufacturing	46	26	23	50.0%	29.2%	25.6%
4	Transportation	42	33	24	50.6%	39.8%	28.9%
5	Information Technology	18	14	10	45.0%	35.9%	25.6%
6	Marketing	21	13	13	52.5%	33.3%	33.3%
7	Business & Finance	9	7	7	30.0%	24.1%	24.1%
8	Hospitality & Culinary Arts	11	7	6	57.9%	38.9%	33.3%
9	Business Management & Administrative Support	76	50	37	50.0%	32.9%	24.3%
10	Health Science Technology Education	24	18	20	55.8%	42.9%	47.6%
11	Family & Consumer Science	67	53	30	44.1%	34.9%	19.9%
12	Arts, Audiovisual, Industrial, & Communication Tech	34	20	16	42.5%	25.6%	21.1%
13	Law Enforcement	2	2	2	33.3%	33.3%	33.3%
14	Science, Technology, Engineering, and Mathematics	4	2	2	33.3%	18.2%	18.2%
16	Public Affairs/Community Awareness	2	1	1	100%	50.0%	50.0%
17	Career Exploration	3	2	1	17.6%	11.8%	5.9%
18	Transition-Disabled	49	33	19	54.4%	36.7%	20.9%
	Total=	536	378	259	53%	37.6%	26.3%

Table 14. Relationships with postsecondary institutions. Number of courses within each program area leading to a Certificate, Postsecondary Credential, Concurrent Enrollment, or an Articulation credit/agreement.

CC#	Career Cluster/Program Area	# Certificate	# Postsecondary Credential	# Concurrent Enrollment	# Articulation Credit
1	Ag, Food & Natural Resources	30	60	58	199
2	Architecture & Construction	44	68	39	154
3	Manufacturing	24	72	28	124
4	Transportation	49	68	27	117
5	Information Technology	32	27	19	44
6	Marketing	14	25	9	84
7	Business & Finance	3	2	6	23
8	Hospitality & Culinary Arts	14	9	0	16
9	Business Management & Administrative Support	97	232	112	430
10	Health Science Technology Education	78	69	39	80
11	Family & Consumer Science	46	98	20	211
12	Arts, Audiovisual, Industrial, & Communication Tech	45	81	30	140
13	Law Enforcement	0	6	6	12
14	Science, Technology, Engineering, and Mathematics	2	4	7	7
16	Public Affairs/Community Awareness	2	0	1	2
17	Career Exploration	2	2	0	1
18	Transition-Disabled	5	13	0	5
	Total=	47	836	401	1,649

Table 15. Advisory Committees. Number and percent of programs, in each program area, which have Business & Industry, Community Organization, and/or Postsecondary Faculty partners related to the field serving on their Advisory Committee(s).

CC#	Career Cluster/Program Area	# Business & Industry	# Community Organization	# Post-secondary Faculty	% Business & Industry	% Community Organization	% Post-secondary Faculty
1	Ag, Food & Natural Resources	64	54	16	56.6%	48.2%	14.4%
2	Architecture & Construction	64	43	32	43.0%	29.5%	21.9%
3	Manufacturing	46	26	23	50.0%	29.2%	25.6%
4	Transportation	42	33	24	50.6%	39.8%	28.9%
5	Information Technology	18	14	10	45.0%	35.9%	25.6%
6	Marketing	21	13	13	52.5%	33.3%	33.3%
7	Business & Finance	9	7	7	30.0%	24.1%	24.1%
8	Hospitality & Culinary Arts	11	7	6	57.9%	38.9%	33.3%
9	Business Management & Administrative Support	76	50	37	50.0%	32.9%	24.3%
10	Health Science Technology Education	24	18	20	55.8%	42.9%	47.6%
11	Family & Consumer Science	67	53	30	44.1%	34.9%	19.9%
12	Arts, Audiovisual, Industrial, & Communication Tech	34	20	16	42.5%	25.6%	21.1%
13	Law Enforcement	2	2	2	33.3%	33.3%	33.3%
14	STEM	4	2	2	33.3%	18.2%	18.2%
16	Public Affairs/Community Awareness	2	1	1	100%	50.0%	50.0%
17	Career Exploration	3	2	1	17.6%	11.8%	5.9%
18	Transition-Disabled	49	33	19	54.4%	36.7%	20.9%
	Total=	536	378	259	53%	37.6%	26.3%

The following information was not requested in legislation, however, it is included for the purpose of contributing to the broader picture of equipment needs. Please note that districts provided an approximate estimate of these data only; these data have not been thoroughly justified relative to other data sources included in this report. Given this, these data should be interpreted with caution.

Table 16. Approximate age of the equipment items documented in this report.

CC#	Career Cluster/Program Area	% 0-9 years	% 10-19 years	% 20 years or older
1	Ag, Foods, and Natural Resources	42.9%	32.1%	25.0%
2	Architecture and Construction	58.8%	23.4%	17.9%
3	Manufacturing	50.5%	22.9%	26.6%
4	Transportation	41.9%	33.4%	24.7%
5	Communications and Information Tech	88.7%	8.2%	3.1%
6	Business and Marketing	92.9%	6.8%	0.2%
7	Hospitality and Culinary Arts	46.8%	31.3%	21.9%
8	Health Science Technology Ed	76.0%	22.1%	1.9%
9	Family and Consumer Science	51.5%	34.2%	14.3%
10	Early Childhood	38.4%	28.9%	32.8%
11	Textiles and Apparel	58.7%	32.0%	9.4%
12	Law Enforcement	80.0%	20.0%	0.0%
	Total =	65.6%	21.5%	12.9%

Appendix I

Minnesota Career and Technical Education Clusters, Fields, and Pathways

Appendix J
List of Contributors

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