**MN DEED WDQI Grant**

**Design Plan Outline**

I. **Partnerships**
   1. **Establish a governance body**
   2. **Secure data-sharing partnerships**

II. **Database Management System for MN-WELDS**
   1. **Design structure of MN-WELDS**
   2. **Establish security measures**
   3. **Server acquisition and setup**
   4. **Update and maintenance of MN-WELDS**

III. **Building MN-WELDS**
   1. **Required workforce data sets**
   2. **Required education data sets**
   3. **Other data sets**
   4. **Link MN-WELDS to MN-SLEDS (whenever possible)**

IV. **Use of MN-WELDS / Research and analysis**
   1. **Performance Measures**
   2. **Research and Analysis**

V. **Dissemination and Publications**

VI. **Sustaining MN-WELDS after WDQI grant expires**

**MN DEED Design Plan for the WDQI Grant,**

## A. Grant Purpose and Objectives

The WDQI grant will enable DEED to develop a workforce-education longitudinal data system (MN-WELDS) linking data on Workforce Investment Act Title IB, Wagner-Peyser, and Trade Act Assistance training participants, unemployment insurance beneficiaries, wage records on UI-covered employees, and post-secondary education program participants, as well as data from other state and federal employment and training programs.

The MN-WELDS will be used to monitor and improve employment, training and post-secondary education programs and to produce valuable labor market information that will allow for a better understanding of the connections between employment, training, and education services and workforce outcomes. The objectives thus include:

1. Achieve efficiency and lower costs by bringing all DEED administrative data into one database.
2. Allow more accurate and applicable measures of performance through a more comprehensive set of data.
3. Provide new measures of workforce program performance and return on investment across training and educational programs.
4. Conduct research to better understand the functioning of our state's labor markets.
5. Provide more accurate, applicable and reliable labor market information to a wide range of users, including policy makers, employment and education program administrators, students, job seekers, businesses, the media, and researchers and analysts.

## B. Operationalizing Grant Activities

### I. Partnerships

3. Establish a governance body

DEED will establish a governance body and working committees to provide guidance in planning, development and implementation of MN-WELDS. Representation on the governance body shall include all agencies that will provide employment or education data to the MN-WELDS and organizations with an interest in the workforce-education longitudinal data system.

<u>Actions:</u>

a. DEED shall develop a structure and an initial set of system priorities for the governance body
b. DEED shall approach each partner to appoint the appropriate representative
c. DEED shall establish general duties and powers of the governance body
d. The governance body shall hold regular meetings to develop strategies and actions that focus on:
    i. access to potential program data and their matching across programs
    ii. strategies to access education data within Family Educational Rights and Privacy Act (FERPA) provisions
    iii. system security and confidentiality of data
    iv. IT architecture and database structure
    v. quality of data elements
    vi. quality and rigor of research and analysis
    vii. building support among the legislature and state leadership
e. The governance body shall coordinate with the governance committee of the state longitudinal education data system (SLEDS) currently in development under the management of the Minnesota Department of Education and the Minnesota Office of Higher Education. This coordination will enable expansion of both longitudinal data systems.
f. The governance body shall coordinate with SLEDS in efforts to amend state data privacy statutes where necessary to enable longitudinal systems.

4. Secure data sharing partnerships

DEED has data sharing partnerships with many state agencies, and local and non-profit providers of workforce development services. DEED also has commitments from many state agencies and organizations to partner in the development of MN-WELDS. The current partnerships will be retained and expanded, while prospective partnerships will be secured.

<u>Actions:</u>

a. With prospective partners, DEED shall reestablish communications to secure partnerships.
b. Once prospective partnerships are secured, DEED shall approach each partner to

appoint the appropriate representative to the MN-WELDS governance body.

c. DEED shall work with each partner to develop a plan detailing data sharing procedures, security and confidentiality standards, and desired analysis and reports.

## II. Database Management System for MN-WELDS

5. Design structure of MN-WELDS

   The MN-WELDS will incorporate data sets organized by individual program participants and data sets organized by variables other than individual program participants. Data sets organized by individual program participants will be linked mainly by the individual's SSN. The other data sets will be linked using appropriate common linking variables such as the ten-digit Minnesota UI account number, occupation titles, demographic information, and others as appropriate and available.

   Actions:

   a. Develop programming language for the structure of MN-WELDS
   b.

6. Establish security measures

   Security of MN-WELDS will be modeled on the current DEED security policies and protocols. DEED will develop security and confidentiality measures at all stages, levels, and parts of the MN-WELDS.

   Actions:

   a. Partners and users: Develop data agreements to be signed by all partners and all data analysts to insure confidentiality and security.
   b. Staff: Grant appropriate levels of clearance to authorized staff
   c. Physical location of the database servers: Implement card key access and camera monitoring.
   d. Local area network: Establish firewall security.
   e. Data in transport: Encrypt data using SSL or similar technology
   f. Physical database (at rest): Establish encrypting system on data while in storage.
   g. Security audits: Establish regular security audits on all facets of data handling within the MN-WELDS.

7. Server acquisition and set-up

Actions:

a.

8. Update and maintenance of MN-WELDS

The Structured Query Language (SQL) non-procedural coding language will be used for updating and maintaining data and related tables.

Actions:

a. Develop routines for updating data

b.

## III. Building MN-WELDS

2. Required workforce data sets

The MN-WELDS will include all required employment data sets in the WDQI grant: Workforce Investment Act Title IB (WIAIB), Wagner-Peyser (WP), Trade Act Assistance (TAA), UI Benefit, and UI Wage Records (UIWR). These data sets will be linked sequentially. The WIAIB, WP, and TAA will be accessed from the MN Workforce Investment Streamlined Performance Reporting (MN-WISPR).

Actions:

a. UIWR: Assess the reliability and validity of UIWR data, and classify values of data elements as either legitimate, correctable, or suspect records.

b. UI Benefit:

   i. Assess the reliability and validity of UI Benefit data, and classify values of data elements as either legitimate, correctable, or suspect records.

   ii. Link records in UI Benefit to those in UIWR by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

c. Workforce Investment Act Title IB (WIAIB):

   i. Assess the reliability and validity of WIAIB data, and classify values of data elements as either legitimate, correctable, or suspect records.

   ii. Link records in WIAIB to those in UIWR and in other employment programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

d. Wagner-Peyser (WP):

i. Assess the reliability and validity of WP data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in WP to those in UIWR and in other employment programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

e. Trade Act Assistance (TAA):

i. Assess the reliability and validity of TAA data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in TAA to those in UIWR in other employment programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

5. Required education data sets

As the required workforce programs are linked together, post-secondary education data sets will be added to MN-WELDS. The education data sets will include Public Post Secondary programs from Minnesota State Colleges and University System (MnSCU), Public and Private Post Secondary programs from Office of Higher Education (OHE), Private Post Secondary programs from the MN Private Colleges Council (MPCC), and Adult Basic Education program and Career and Technical Education program from the MN Department of Education (MDE). These data sets will be linked in a sequential manner.

<u>Actions:</u>

a. Public Post Secondary programs from MnSCU:

i. Assess the reliability and validity of MnSCU data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in MnSCU programs to those in UIWR and in employment programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

b. Public and Private Post Secondary programs from OHE:

i. Assess the reliability and validity of OHE data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in OHE programs to those in UIWR, in employment programs, and

in other education programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

c. Private Post Secondary programs from the MN Private Colleges Council (MPCC):
   i. Assess the reliability and validity of MPCC data, and classify values of data elements as either legitimate, correctable, or suspect records.
   ii. Link records in MPCC program to those in UIWR, in employment programs, and in other education programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

d. Adult Basic Education program (ABE) from MDE:
   i. Assess the reliability and validity of ABE data, and classify values of data elements as either legitimate, correctable, or suspect records.
   ii. Link records in ABE program to those in UIWR, in employment programs, and in other education programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

6. Other data sets

DEED will add to MN-WELDS other data sets to broaden its breadth and increase its value as a tool for program performance measures and workforce analysis. Some of these additional data sets will include employment and training programs managed by DEED such as Vocational Rehabilitation, State Services for the Blind, Federal Employment Data Exchange System (FEDES). Data sets from other state agencies will also be added such as: Temporary Assistance to Needy Families (TANF), Supplemental Nutrition Assistance Program (SNAP) managed by the MN Department of Human Services; the Registered Apprenticeship program managed by the MN Department of Labor and Industry; and state Driver's License data managed by the MN Department of Public Safety. Additionally, data sets from non-profit organizations, such as Greater Twin Cities United Way and Twin Cities RISE, will be added as well.

<u>Actions:</u>

a. Vocational Rehabilitation program (VR):

i. Assess the reliability and validity of VR data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in VR program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

b. State Services for the Blind:

i. Assess the reliability and validity of State Services for the Blind data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in State Services for the Blind program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

c. Federal Employment Data Exchange System (FEDES):

i. Assess the reliability and validity of FEDES data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in FEDES program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

d. Temporary Assistance to Needy Families (TANF):

i. Assess the reliability and validity of TANF data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in TANF program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

e. Supplemental Nutrition Assistance Program (SNAP):

i. Assess the reliability and validity of SNAP data, and classify values of data elements as either legitimate, correctable, or suspect records.

ii. Link records in SNAP program to those in UIWR, in employment programs, in

education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

f. Registered Apprenticeship program (RA):
   i. Assess the reliability and validity of RA data, and classify values of data elements as either legitimate, correctable, or suspect records.
   ii. Link records in RA program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

g. State Driver's License data:
   i. Link records in RA program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

h. Data set from Greater Twin Cities United Way (GTCUW):
   i. Assess the reliability and validity of GTCUW data, and classify values of data elements as either legitimate, correctable, or suspect records.
   ii. Link records in GTCUW program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

i. Data set from Twin Cities RISE (TCR):
   i. Assess the reliability and validity of TCR data, and classify values of data elements as either legitimate, correctable, or suspect records.
   ii. Link records in TCR program to those in UIWR, in employment programs, in education programs, and in other programs by applying appropriate matching techniques that include exact matches using SSN, deterministic matches, and probabilistic matches.

7. Link MN-WELDS to MN-SLEDS (whenever possible)

   As SLEDS development proceeds, it is expected that MN-WELDS will be able to match

records from pre-Kindergarten through workforce participation for a full understanding of education on an employment-as-outcome basis.

Actions:

a. Link records in MN-SLEDS to those in MN-WELDS by applying appropriate matching techniques that include exact matches using SSN or names, deterministic matches, and probabilistic matches.

b.

## IV. Use of MN-WELDS / Research and analysis

3. Performance Measures

DEED will continue to produce the standard required performance measures including, new hire rate, employment retention rate and average earnings for employment services programs. In addition, DEED will develop new and improved performance measures on each program included in the MN-WELDS.

Actions:

a. Develop standard required performance measures. For each program compute
   i. new hire rate,
   ii. employment retention rate, and
   iii. average earnings.

b. Compute characteristics of new hires. For each program compute extent of new hires
   i. by wage level,
   ii. by industry,
   iii. by establishment size, and
   iv. by Minnesota Workforce Service Areas (WSA).

c. Develop gross impact, performance measures. For each program develop:
   i. number of program participants who found employment,
   ii. job retention,
   iii. average hourly wage,
   iv. a distribution of hourly wage percentiles,
   v. a distribution of hourly wage intervals,
   vi. average number of hours worked,
   vii. the proportions of single jobholders and multiple jobholders,

viii. the industry distribution of employment.

d. Develop performance measures across programs and over time. These measures will
   i. Performance measures on sets of programs used jointly by participants,
   ii. Distribution of sequences of services and programs attended by participants,
   iii. Flow of individuals between programs and services and over time.

e. Develop performance measures of services provided at each WSA using regression models.

f. Develop net performance measures. These measures will be estimated using statistical non-experimental matching methods and regression models to capture the effects of programs on participants.

g. Develop measures of return on investment (ROI) on employment and training programs.

4. Research and Analysis

DEED will conduct research projects within the three year life of the WDQI grant to study the UI and dislocated worker populations. Interest will be on how to improve employment and training services provided to these populations so to align them with projected job growth. The analysis will use cross-tabulations methods and econometric models.

<u>Actions:</u>

a. Evaluation of services provided to UI claimants:
   i. What are the employment outcomes (upward wage mobility, job-hopping, tenure and unemployment spells) of UI claimants who receive employment services?
   ii. What individual or service characteristics explain these outcomes?
   iii. How do they compare to subgroups who received different services?
   iv. Write a report.

b. Evaluation of services provided to dislocated workers:
   i. What are the employment outcomes (upward wage mobility, job-hopping, tenure and unemployment spells) of dislocated workers who receive employment services?
   ii. What individual or service characteristics explain these outcomes?
   iii. How do they compare to subgroups who received different services?

iv. Write a report.

c. Performance measures on participants across workforce program:
   i. Effectiveness of sets of workforce programs
   ii. Optimal (preferred) sequencing of services
   iii. Individuals transition between programs and services
   iv. Write a report.

d. Evaluation of services provided to MFIP and SNAP populations:
   i. Characteristics of low-wage workers served by MFIP and
   ii. Effectiveness of services offered to program participants.
   iii. Write a report.

## V. Dissemination and Publications

DEED will provide custom access to performance measures and research results to program administrators, State Legislature, US Department of Labor, US Department of Education, and the general public. DEED will develop tools that provide users with the ability to (1) access dynamic views of summary data so that locations, programs, customer groups, and so on can be compared and (2) develop custom reports on expected outcomes of particular combinations of education and employment programs and services.

Actions:

1. Reports to program administrators
   a. Develop in-house tool to provide the standard measures
   b. Produce quarterly set of standard reports on performance measures to each MN-WLDS participant
   c. Produce annual report on net performance measures and return on investment for each program.
2. Reports to the general public
   a. Establish and maintain a page on the DEED website to provide a set of performance measures on each program. Measures to be published include:
      i. average hourly wage,
      ii. distribution of hourly wage percentiles,
      iii. distribution of hourly wage intervals.

      These measures are aggregated at various levels such as:

i. all workers,
ii. all new hires
iii. new hires by educational program,
iv. new hires by industry level,
v. new hires by geography (regions, counties and cities).

3. Research reports
    a. Publish report on each research project.
    b.

## VI. Sustaining MN-WELDS after WDQI grant expires

The governance body of MN-WELDS will work with the governing body of MN-SLEDS to incorporate and combine the two longitudinal systems thus improving prospects for support and funding from state and federal sources. In addition, DEED will collaborate with state agencies and organizations to help fund and support research efforts using the MN-WELDS.

Actions:

1. Link the MN-WELDS to the MN-SLEDS.
    a. Develop proposals to link MN-WELDS to MN-SLEDS
    b. Determine ways to support and fund the linked longitudinal education-employment system
2. Develop research consortia with MN-WELDS partners
    a. Propose research projects and/or identify new ones.
    b. Develop funding strategies to carry the research

*List of proposed research projects:*

- What educational and training characteristics predict positive employment outcomes? What jobs, in which industries, in which areas and at what hourly wages, are new graduates and other training program completers taking?
- What are the subsequent employment experiences (upward wage mobility, job-hopping, tenure and unemployment spells) of participants in and graduates and completers of various programs/institutions? What educational characteristics explain these experiences? How do they compare to subgroups with different

educational attainment?

- What education and experience best prepares individuals to transition between occupations as the demands for skills and knowledge change in a dynamic economy? Which characteristics of those programs provide for successful occupational mobility, including from low-wage to higher wage jobs, can be adopted by less successful programs?
- As measured by increased wages and resultant tax revenues, what is the return on investment of various educational programs? What can variability in these returns on investment tell us about imbalances between the supply of newly minted graduates and the demand for their educational credentials and abilities?
- Are graduates of our educational institutions taking jobs in Minnesota at rates comparable to other states, or is Minnesota experiencing a 'brain drain'? Are some programs and/or institutions more prone to this than others? Are there characteristics (personal or institutional, existent or missing) that can reduce the tendency of educated workers to leave the state?
- What are successful strategies for adult learners and incumbent workers with work experience that enter training and then re-enter the workplace? What do these strategies tell us about the return to life-long learning efforts and the optimal characteristics of such efforts?
- What are the educational and employment outcomes of adults who enter Minnesota community colleges? What are their educational attainment wage premiums? How do these wage premiums differ across different demographics, such as age, ethnicity, and gender?