Iowa LTAP Work Zone Sign Package Program

Final Report
June 2019

IOWA STATE UNIVERSITY
Institute for Transportation

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16. Abstract

The ability to acquire and set up work zone related devices that are in compliance with the 2012 revisions to the 2009 *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD) can sometimes be difficult for smaller cities. The smaller budgets for these cities can result in a lack of inventory and/or the use of signs that are in poor condition.

The objectives of the program described in this report were to assist smaller cities in the acquisition and setup of devices to improve the safety of their work zones for their public works staff and the traveling public. The design, creation, and implementation of the small city work zone sign package program was completed to meet these objectives.

First, the content of the work zone sign package was developed. Second, the eligibility rules to apply and compete for the sign package were defined. These rules included having a city population of 10,000 or less and at least one staff person who had completed work zone or other related training in the last three years. Third, an application was created and distributed to the 51 cities that were deemed eligible. This application consisted of 11 questions that were designed to determine the need each eligible city had for the work zone sign package. Fourth, an evaluation and ranking process that assigned points to the answers for each question was defined and applied.

This process was designed to both quantitatively and qualitatively rank each city's need for the work zone sign package. A ranking process was needed to apply in situations where more applications were received than work zone sign packages available. Funding was available for 10 work zone sign packages and 19 applications were received.

It was concluded that this project helped meet the objective of increasing work zone safety within small cities. The questions contained in the application also appeared to measure the need of the city applicants for the work zone sign package. Based on the application results, it is recommended that the eligibility rules and distribution approach for the competition may need to be changed in order to increase participation. In addition, adjustments to the evaluation and ranking process used to score some the questions could be reconsidered based on the results of this work. It is recommended that the program be continued in order to serve the additional needs of small cities in Iowa.

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IOWA LTAP WORK ZONE SIGN PACKAGE PROGRAM

Final Report
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EXECUTIVE SUMMARY

The project described in this report focused on the continuance of the work zone sign package program in Iowa. The objectives of the program were to assist smaller cities with the acquisition and proper setup of work zone related devices to make their work zones safer for workers and the traveling public. The devices chosen were compliant with the 2012 revisions of the 2009 *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD). Many small cities have budgets that sometimes make it difficult to accomplish these objectives. The project included tasks that focused on the development of a technical advisory committee (TAC), work zone sign package content, an application for acquiring or competing for the work zone package, and a process to select the cities that should receive the work zone devices. This program was first introduced in 2017 and many of the changes and recommendations from the initial project year were implemented into the current program. The activities completed to finish these tasks are described in this report.

The tasks completed during the course of the project included the development of the package content, the definition of application eligibility rules, and the review of the application questions. First, the work zone sign package was created through a discussion with the TAC. Eight items were identified for inclusion, for example, ROAD WORK AHEAD signs, Class 2 safety vests, and 42-inch channelizer cones. A complete list of the devices is described in Chapter 2. The second task in the process was to define the program eligibility rules. It was determined that the cities eligible to compete for the work zone sign packages should have a population of less than 10,000 and at least one staff person that had received work zone safety or other Iowa Local Technical Assistance Program (LTAP) sponsored training during the last three years. These eligibility rules limited the number of potential applicant cities in Iowa to 51. Finally, the questions for the application used in the initial project were edited and the 11 questions included were reviewed by the TAC. The objective of the questions was to gather information about the level of need each city applicant had for the work zone sign package. Some of the questions included in the application focused on city population, the number of public works staff, and a summary of the applicant's work zone sign inventory and its condition. The application distributed to the 51 eligible cities is in Appendix A.

A total of 19 cities completed the application process and were evaluated by the committee. An evaluation and ranking process was utilized to assess the answers to the questions in each application. More specifically, a point assignment approach was designed to measure the level of need of each city for the work zone sign package based on the city's answers. This ranking approach was applicable to 5 of the 11 questions in the application (the other questions involved contact information, etc.). The questions for which an evaluation and ranking process was used included those that focused on city population, the number of public works employees, work zone problems encountered and other relevant information that was shared, and the existing sign inventory and its condition. The approach used to assign points for answers to each of the questions, along with a tie breaker option if needed, are described in detail within Chapter 3. Overall, a total of 27 points possibly could be assigned to each city based on the answers provided by the city in its application. The cumulative number of points assigned to the 19 cities that applied ranged from 7 to 20. All of the city applicants indicated that they had some level of

need for the work zone sign package due to missing inventory and/or devices that were in poor condition.

Several conclusions and recommendations were reached based on the completion of the tasks in this program. The sign package program was developed to help smaller cities acquire and apply proper work zone sign setups. The accomplishment of these objectives should also help improve the safety of work zones in Iowa. It is believed that the distribution of the 10 work zone sign packages as part of this program has helped advance this objective. However, only 19 of the 51 cities eligible to be involved with the program completed an application. It was concluded that the low application rate could be due to several factors (e.g., the communication process used, the staffing levels within small cities, the length of the application, and previous winners not re-applying). Overall, however, the questions in the application appeared to measure the need for the work zone sign package relatively well. The answers provided showed, among other things, that the respondents typically had very few public works staff and typically did not have a full complement of work zone related devices and/or signs that were in "good" condition.

Recommendations (see Chapter 4) were created to address the concerns of the program this year. The changes made to the program this year were a result of recommendations from the initial project in 2017. For instance, several questions were reworded to reflect the information needed by the TAC. Also, scoring of the applications may need to be adjusted to accommodate these and other recommended changes.

CHAPTER 1. INTRODUCTION

Public works departmental staff members who have attended the Iowa Department of Transportation (DOT) Work Zone Safety workshops (or similar training events) are often from cities that have populations of less than 10,000. However, persistent shortages in city budgets can sometimes make it difficult for public works departments in these smaller cities to purchase acceptable work zone temporary traffic control devices (TTC) and/or replace those that are no longer in compliance with the 2009 *Manual on Uniform Traffic Control Devices for Streets and Highways* (MUTCD) with Revisions 1 and 2, dated May 2012 (FHWA 2012). Sections 1A.05, 1A.07, and 6F.04 of the MUTCD state the following about sign responsibility and maintenance:

> Section 1A.05 – "Maintenance of Traffic Control Devices. Clean, legible, properly mounted devices in good working condition command the respect of road users" (FHWA 2012).
>
> Section 1A.07 – "Responsibility for Traffic Control Devices. The responsibility for the design, placement, operation, maintenance, and uniformity of traffic control devices shall rest with the public agency" (FHWA 2012).
>
> Section 6F.04 – "Sign Maintenance. Signs should be properly maintained for cleanliness, visibility, and correct positioning. Signs that have lost significant legibility should be promptly replaced" (FHWA 2012).

This program, funded by the Iowa DOT, to acquire and then provide TTC devices and personal protection vests to small cities will assist them in meeting the needs described above.

Project Goal and Objectives

The goal of this project was to provide an avenue for small cities to obtain a basic package of work zone signs and personal protection vests that could help them improve the safety of their work zone setups and increase the safety of their workers and the traveling public. These devices also should help public works departments remain in compliance with the MUTCD. One of the objectives of this project was to encourage more small cities to participate in work zone safety training events. To accomplish the goal and objectives of this project, several tasks were completed. The completion and results of these tasks are described in this report. They included the development of a technical advisory committee (TAC), the sign package to provide, an application for small cities to acquire the package, and a process to select the cities to which to provide the package (including an evaluation and ranking approach for the applications received).

Report Content

This report contains four chapters. The first chapter introduces the project, describes its goals and objectives, and summarizes the report content. Chapter 2 includes information about the content of the work zone sign package developed, program eligibility, and the questions included in the

program application. Chapter 3 describes the interaction of the project team with the applications received. It includes a summary of the application question responses and a description of how the answers to the questions were ranked. Chapter 4 contains the conclusions and recommendations related to the completion of the tasks in this project.

CHAPTER 2. SIGN PACKAGE AND APPLICATION DEVELOPMENT

The TAC for this project consisted of Iowa DOT engineering staff, public works directors, the Iowa Statewide Urban Design and Specifications (SUDAS) director, and a traffic supervisor. The TAC was used to guide the project team in the tasks completed. More specifically, the TAC helped define the content of the sign package that would be provided to the cities, develop the sign package competition eligibility and application content, and review the application evaluation process to select the cities that should receive the sign package. The completion of these tasks are described in this chapter.

Sign Package Development

At the first meeting of the TAC, the project team suggested a list of work zone related materials that should be included in the work zone sign package for this program. The overall objective was to include those devices that were most needed by smaller cities in Iowa. It was also understood that this would be a basic work zone sign package and could not cover all of the scenarios a public works crew might encounter. Based on these constraints, the work zone sign package suggested by the project team to the TAC included the following:

- 4 – ROAD WORK AHEAD signs
- 2 – ONE LANE ROAD AHEAD signs
- 2 – BE PREPARED TO STOP signs
- 2 – Type III barricades
- 16 – 28-inch traffic cones
- 6 – Class 2 safety vests
- 8 – Sign stands
- 10 – 42-inch channelizer cones

All of the materials included in the final work zone sign package purchased as part of this project were compliant with MUTCD requirements for retroreflectivity, properly sized for lower speed small city roadways, and suitable during nighttime work zone activities. A photograph of the final work zone sign package delivered to the cities selected as part of this project is shown in Figure 1.

Figure 1. Work zone sign package

Program Application Eligibility

The next step that was completed as part of this program was the determination of which cities should be allowed to apply and compete for the work zone sign packages developed. It was proposed to the TAC that only cities that had at least one staff member who attended work zone signing training through the Iowa Local Technical Assistance Program (LTAP), the Iowa DOT Work Zone Safety workshops, Iowa Streets and Roads Workshop/Conference, or the Iowa Chapter of the American Public Works Association (APWA) Spring Conference (any of these within the last three years) should be allowed to apply. The Iowa LTAP has access to these attendance lists. Attendance at these workshops would demonstrate the city's commitment to work zone safety and the safety of its public works personnel. When this rule was applied, the number of Iowa cities eligible for the program was 51.

Application Content Development

The application for eligible cities was developed by the previous TAC and used again for this program after suggested changes were made. An example of these changes would be to specify the number of employees that work in the roadway, including seasonal and part-time, since many cities have employees that are assigned to tasks other than roadway work. An online version of this application form was used to improve the competition response rates. The list of questions suggested to the TAC included the following:

1. What is the name of your city?
2. What is the name and title of your contact person?
3. What is your address?
4. What is your email address?
5. What is your phone number?
6. What is the population of your city?
7. How many public works employees do you have that work in the roadway, including seasonal and part-time?

8. Please provide a brief history of the typical work zone problems you have encountered.
9. Please provide an inventory and average condition assessment (i.e., good, fair, and poor) of your current work zone traffic control devices.
10. Please provide any other relevant information for our consideration.
11. "It is understood that if selected to receive one of the packages, our public works employees will participate in LTAP-offered work zone safety workshops and the Roads Scholar Program. It is also understood that by submitting this application I certify the information contained is true and accurate." Click "Yes, I agree"

The application was also accompanied by some introductory text within an email that described the purpose of the project and the work zone sign package content. This email and application was electronically sent to the 51 eligible cities in Iowa, and the cities were provided 23 days to respond. Reminder emails were also sent to the same set of cities approximately 10 days before the deadline. The final version of the application is included in Appendix A.

CHAPTER 3. APPLICATION RESULTS, EVALUATION, AND RANKING

As noted above, a total of 51 cities in Iowa were eligible to apply and compete for the work zone sign package previously described. All 51 cities were emailed the program application and asked to respond. However, it was also estimated that there was only enough project funding to distribute approximately 10 work zone sign packages. A previously developed process of assigning points to specific questions and the ranking of applications was used to evaluate the applications. Appendix B contains an example of a completed application. A summary of the answers received from the 19 applicants in this program is provided in the following paragraphs. The criteria, or weighting, and the rationale used to rank the answers from each city is also described.

The primary objective considered during the development of the evaluation and ranking process was to determine and compare the overall need of the cities for the new work zone signing package and, ultimately, to help them improve their work zone setups. The ranking form used for the evaluation is shown in Appendix C. The first five questions of the application included general information about each city (i.e., city name, name and title of contact person, physical address, email address, and phone number) and were not to be used in the evaluation and ranking process. In addition, Question 11 was a signed certification that the information that the applicant provided was true and accurate. The evaluation and ranking of Questions 6 through 10 are described below.

City Population

Question 6 of the application asked the respondents to provide the population of their city. The project team and the TAC were in agreement that cities with higher populations were less likely than those with lower populations to need temporary traffic devices. For this reason, the results were bundled into population categories of less than 2,000 residents, 2,001 to 5,999 residents, and 6,000 to 9,999 residents. In addition, it was concluded that the cities with populations between 2,001 and 5,999 were the most likely to be in need of the work sign package. Cities within this population range were also more likely to have a larger transportation system, more traffic flow, and more frequent work zone activity than smaller cities. The work zone signing and public works department funding in cities with populations between 2,001 and 5,999, however, may not be comparable to funding in cities with larger populations.

The ranking points assigned to the answers for this question were based on the conclusions described above. Cities with a population of less than 2,000 were given two points, those with a population from 2,001 to 5,999 were given three points, and those with a population in the range of 6,000 to 9,999 were given one point. Table 1 provides a summary of the applicant city populations.

Table 1. City applicant populations

Population range	Number of applicants	Average population
Less than 2,000	7	784
2,001 to 5,999	10	4,525
6,000 to 9,999	2	8,633
Total	19	3,579

The program had 7 applicants from cities with populations of less than 2,000 residents, 10 of the cities with a population between 2,001 and 5,999, and 2 cities with populations between 6,000 and 9,999. The overall average of the applicant city populations was 3,579.

Number of Public Works Employees

Question 7 of the application requested the number of public works staff employed by the city that worked in the roadway, including seasonal and part-time employees. The answers ranged from 1 to 23, with averages of about 2.3 for cities with less than 2,000 residents, and 11 and 9.5 for cities with populations between 2,001 and 5,999 and between 6,000 and 9,999, respectively. Cities with less than two public works employees would have received no points, and those with two or more received two points. This ranking approach was primarily based on the fact that a work zone would not typically be staffed with only one person, but did not disqualify any city just on this basis.

Work Zone Problems Encountered and Other Relevant Information to Consider

The cities were also asked, in Questions 8 and 10, to provide the project team and the TAC with some insight into their work zone issues and situation. Question 8 asked cities to give a brief history of some of the problems they had encountered in work zones (see Appendix D for examples), and Question 10 was an open-ended question that asked cities to provide any other information that they might think was relevant to the application and should be considered in the evaluation and ranking (see Appendix E for examples). These two questions were also the only part of the application where respondents were given space to show the importance they placed on receiving one of the work zone sign packages.

A maximum of 10 points could be assigned to each respondent for their answers to these two questions. First, if the respondents mentioned or implied the importance of their workers' safety, they were given two points. Nine out of the nineteen respondents received these points. Second, respondents were given another two points if they mentioned or implied the importance of the safety of the traveling public with respect to their work zone setups. Two out of the nineteen respondents also received these two points (but only one of the previously mentioned cities received these points). Third, respondents were given two points if they mentioned or implied that the proper training of their staff for work zone setups was important. Only one of the respondents mentioned this fact. Fourth, if respondents noted that they had a shortage of devices

to set up work zones (and the answer matched with the inventory question discussed next), they were also given two points. Eight out of nineteen respondents indicated that they had a shortage of devices. Finally, another two points were provided to respondents if they mentioned that their work zone temporary traffic control devices were out of compliance (e.g., old, peeling, fading, etc.). Four out of nineteen respondents received these two points. In all cases, if the above terms were not mentioned or implied, the respondent received no points.

The objective of these questions was to provide a method to evaluate what the city applicant thought about work zone safety. This evaluation and ranking approach described above for point assignments was considered to be one method of accomplishing this task. The applicant's interest in safety and safety training, and a lack of temporary traffic control devices or use of non-compliant signs, was also measured for each applicant. An additional method of measuring the need for a work zone package was also accomplished by evaluating the answers to the inventory question, as described below.

Existing Inventory and Condition

An additional question used in the ranking of the applicants was Question 9. This question asked applicants about the number of devices (i.e., 1 to 10 and 10 or more) in their current inventory and the average condition of those signs (i.e., good, fair, and poor). More specifically, applicants were asked to provide the quantities and condition of their cones, Class 2 vests, ROAD WORK AHEAD signs, ONE LANE ROAD AHEAD signs, BE REPARED TO STOP signs, and Type III barricades. These signs all match those included in the work zone sign package. Overall, a point was assigned to a city for each of the six items it did not own, and zero points were assigned if it had even one. Therefore, each city was able to receive up to six points for its inventory response. The number of points assigned to the 19 cities for this question ranged from zero (i.e., the city had at least one of each item) to six (i.e., the city had none of the items in the list of six). The average number of points assigned to the 19 cities was 2.4. Four cities were assigned zero points, seven of the cities were assigned one point (i.e., the city had five items in the list of six), two cities were assigned two points, one city was assigned three points, two cities were assigned four points, three were assigned five points and one was assigned six points, signifying they had none of the listed devices.

Points were also assigned to each city applicant for the condition of its devices. The applicant was assigned no points if it indicated that its cones, vests, or signs were in "good" condition. However, they received one point for every "fair" condition indicated and two points for every "poor" condition noted. A city, therefore, could receive as few as zero points for the condition of its inventory and as many as 12 points. The average number of points assigned to a city was 2.8, and the range of assignments was zero to 6. In other words, there was at least one city that indicated that it only had devices in "good" condition and one or more cities that listed three devices, all in "poor" condition. Overall, however, the average point assignment shows that many of the applicants had mostly "fair" and "poor" condition signs.

Final Ranking Results

The total number of points assigned to each of the cities was based on the evaluation and ranking process described above. These assignments ranged from 7 to 20 points, and the maximum number of points that could be assigned to any one city was 27, which did not include a 0–3 point "judge's option." The average number of cumulative points assigned to the 19 city applicants was 11.8. A list of awarded cities is shown in Appendix F. There were two tie-breaker alternatives provided on the ranking form. The first option was called the "judge's option." This tie-breaker approach allowed each judge to add one to three points to a city score that indicated the judge's subjective belief regarding which city needed the work zone sign package more. The second option was a suggestion that a point be added to a city's score every time the word "safety" was used in the application. If needed, the application of either option would break any tie scores if they were to occur. Neither of the options were needed since none of the tie scores affected the final outcome. In addition, there are some recommended changes to the potential future application included within Chapter 4.

CHAPTER 4. CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are based on the tasks completed as part of this project and their results.

Conclusions

- This program was developed to help smaller cities make their work zones safer for both their public works department workers and the traveling public. The provision of the 10 work zone sign packages funded through this project are believed to have advanced that objective.
- The work zone sign package appears to contain many or most of the devices that are needed by smaller cities within Iowa.
- The application eligibility rules restricted the competition to 51 cities in Iowa. Nineteen (37 percent) of these cities applied for the work zone sign package.
- The questions within the application focused on defining the need for the work zone sign package by the respondent. The answers to those questions appeared to measure this need relatively well. The responses of the 19 city applicants to the questions led to the recommendations noted below.
- The answers to the open-ended questions asked as part of the application showed that the majority of the cities that responded had a lack of work zone related inventory or had inventory that was out of compliance.

Recommendations

- It is recommended that the eligibility to apply for the work zone sign package be adjusted to encourage more participation. The program was made available for those attending the Iowa Chapter APWA Spring Conference, the Iowa Streets and Roads Conference, and the Iowa Work Zone Safety workshops, but it might be appropriate to allow cities that are willing to participate in work zone and flagger training if selected (rather than just those that have already taken this training) to receive a work zone sign package. However, those cities that have attended the previous workshops might receive additional points during the ranking process than those indicating a willingness to attend in the future.
- It is recommended that advertisement of the program be extended to consultants and other outside agencies that work with smaller cities to encourage participation in the program.
- It is recommended that the point value assigned to the question concerning “quantity and quality” of current work zone devices be reconsidered to better reflect the intent of the question. Currently, a respondent receives more points for signs in poor condition than for not having any signs.
- It is recommended that first-time applicants or non-winning applicants be given priority over previous winners of the work zone sign packages.
- It is recommended that the importance of the narrative sections of the application be emphasized to encourage more cities to elaborate on the importance of safety and their need for work zone safety devices.

- It is recommended that this program be continued. There is additional need to assist smaller cities with their acquisition and application of work zone related devices. The content of applications received, and a review of the existing devices owned by the cities when the work zone sign packages were delivered, showed the need for this assistance.

REFERENCE

Federal Highway Administration. *Manual on Uniform Traffic Control Devices for Streets and Highways*. 2009 Edition with Revisions 1 and 2 dated May 2012. Federal Highway Administration, Washington, DC.

APPENDIX A. APPLICATION FORM

Application

The Iowa Local Technical Assistance Program (LTAP) is pleased to announce this project for 2019. Please complete the following application to the best of your ability and submit by November 23, 2018. Applications received after this date will not be accepted. The contents of the basic sign package will likely include a selection of the following devices: "Road Work Ahead", "One Lane Road Ahead" and "Be Prepared to Stop" signs. 28 inch traffic cones, Type III barricades, 42 inch channelizers, sign stands and safety vests. Each of these devices will be of the correct type and size for lower speed city street work and will include high intensity retro-reflective sheeting suitable for nighttime use.

1. Name of City

2. Name and Title of Contact Person

3. Address, City and Zip Code

4. Email Address

5. Phone

6. City Population?

7. How many public works employees do you have that work in the roadway, including seasonal and part-time?

8. Please give a brief history of typical work zone problems you've encountered.

9. Inventory and average condition of your current work zone traffic control devices.

	Quantity	Condition
Cones		
Class 2 Vests		
Road Work Ahead Signs		
One Lane Road Ahead Signs		
Be Prepared to Stop Signs		
Type III Barricades		

10. Please add any other relevant information you would like for us to consider.

11. It is understood that if selected to receive one of the packages, our public works employees will participate in LTAP offered work zone safety workshops and the Roads Scholar Program. It is also understood that by submitting this application I certify the information contained is true and accurate.

- ( ) Yes, I agree

APPENDIX B. EXAMPLE OF A COMPLETED APPLICATION

#18

Collector:	Web Link 1 (Web Link)
Started:	Friday, November 16, 2018 8:13:44 AM
Last Modified:	Friday, November 16, 2018 8:49:51 AM
Time Spent:	00:36:06
IP Address:	108.161.52.36

Q6 City Population?

Q7 How many public works employees do you have that work in the roadway, including seasonal and part-time?

4

Q8 Please give a brief history of typical work zone problems you've encountered.

This last fall it was clear that we do not have proper signage when the flooding occurred. The city's storm water system was over flowing and sewers were starting to back up into residents' homes. So our city workers had to pump the excess water out of the drainage system. One of the places that needed to was on state highway __ that runs through _____. The city did not have signs for both directions to alert drivers that the city workers were out there pumping the water. They had to do this for over 24 hours straight. So we had to have an extra person out there to direct traffic and to alert drivers of work that was being done ahead of them. This was a major obstacle and created more man hours with the flooding. We had to do this at four locations in town at the same time and with the limited signage we weren't able to mark each location, the highway was the only location we had to man more than one worker. This is just one problem that just occurred recently.

Q9 Inventory and average condition of your current work zone traffic control devices.

	Quantity	Condition
Cones	**More than 10**	**Fair**
Class 2 Vests	**6**	**Fair**
Road Work Ahead Signs	**2**	**Poor**
One Lane Road Ahead Signs	**0**	
Be Prepared to Stop Signs	**0**	
Type III Barricades	**More than 10**	**Poor**

Q10 Please add any other relevant information you would like for us to consider.
Our inventory is very old and limited. Everything needs to be updated. Our signs do not have the reflective sheeting at all. This grant will help with the replacement of our old inventory and make it safer for our workers when they are out working on our streets. We appreciate anything we would receive so if we have multiple locations we have enough signage and safety equipment for our city workers to use.

Q11 It is understood that if selected to receive one of the packages, our public works employees will participate in LTAP offered work zone safety workshops and the Roads Scholar Program. It is also understood that by submitting this application I certify the information contained is true and accurate.

Yes, I agree

APPENDIX C. RANKING FORM

Applicant Number: _____

Work Zone Sign Project Ranking Process	Possible Points		Applicant Points
Population less than 2000 (Q6)	2		
Population 2001-5999 (Q6)	3		
Population 6000-9999 (Q6)	1		
Number of workers (Less than 2 = 0 points) (Q7)	2		
Quantity = 1 point for each "0" (Q11)			
Condition = 1 point each fair, 2 points each poor (Q11)			
Mentions or implies worker safety	2		
Mentions or implies public safety	2		
Mentions work zone safety workshops	2		
Mentions lack of proper devices	2		
Mentions out of compliance (old, faded, outdated)	2		
Applicant Subtotal			
Judge's option points (0 to 3 points)		+	
Applicant Point Total		=	
Tie Breaker: Number of times "safety" is mentioned			

APPENDIX D. SAMPLE RESPONSES TO QUESTION 8

Q8: Please give a brief history of typical work zone problems you've encountered.

- The largest problem that we encounter is that we do not have any road work signage for advanced warning. When we have to do any type of road work we have to plan in advance to either borrow from another entity or rent which is very costly. Any emergency work that takes place we do the very best we can to protect employees with vehicles and the small amount of cones that we have. Since taking the role of Public works Director in February of 2018 I have taken steps to improve our employees' safety while on the road, and have appealed to administration for more funding to improve overall safety and efficiency.
- We only have a few Type II and a limited amount of cones. This makes it difficult to secure roadways and right-of-ways when we are repairing streets or other infrastructure
- ____ works alone in _____. We don't have any work zone signs. If he is out of the truck or tractor he must have on his safety reflective gear. Our small town is busy twice a day with school traffic, we are home to the *Name of School* and tractors and truck come in and out of town all day long to the Heartland Co-op. Often times cars speed by ____ or crowd him while he is trying to work on the roads.
- We have two major county highways that are in our city limits that around 3,000 vehicles a day travel through so this makes doing road maintenance very difficult at times and with limited equipment.

APPENDIX E. SAMPLE RESPONSES TO QUESTION 10

Q12: Please add any other relevant information you would like for us to consider.

- It is important to keep the warning signs in good shape so that people can see them and they don't blend in to the surroundings. Thank you for what you do to help us keep people and property safer.
- _____ currently has a fully functioning Safety Committee and the elected officials and staff are committed to all facets of safety in the organization.
- Our inventory is very old and limited. Everything needs to be updated. Our signs do not have the reflective sheeting at all. This grant will help with the replacement of our old inventory and make it safer for our workers when they are out working on our streets. We appreciate anything we would receive so if we have multiple locations we have enough signage and safety equipment for our city workers to use.
- _____ is a small town with a small budget. We get by with one full time employee, _____ Director of Public Works. Having signs for him to use would greatly increase awareness for drivers around him while working _____ City Clerk _____ Iowa

APPENDIX F. LIST OF AWARDED CITIES IN IOWA

Table 2. Cities awarded sign packages, with other application details

Place	Appl. #	Score	City	Population
1	18	20	Primghar	909
2	7	16	Bondurant	5,793
3	4	15	Madrid	2,600
4	2	14	Mount Vernon	4,500
5	13	14	Van Meter	1,200
6	17	14	Manchester	5,200
7	15	13	Algona	5,600
8	19	13	Alleman	423
9	3	12	Middletown	318
10	14	12	DeWitt	5,322

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