
# Iowa Rest Area Management Plan

## Implementation Plan

June 2018
DRAFT

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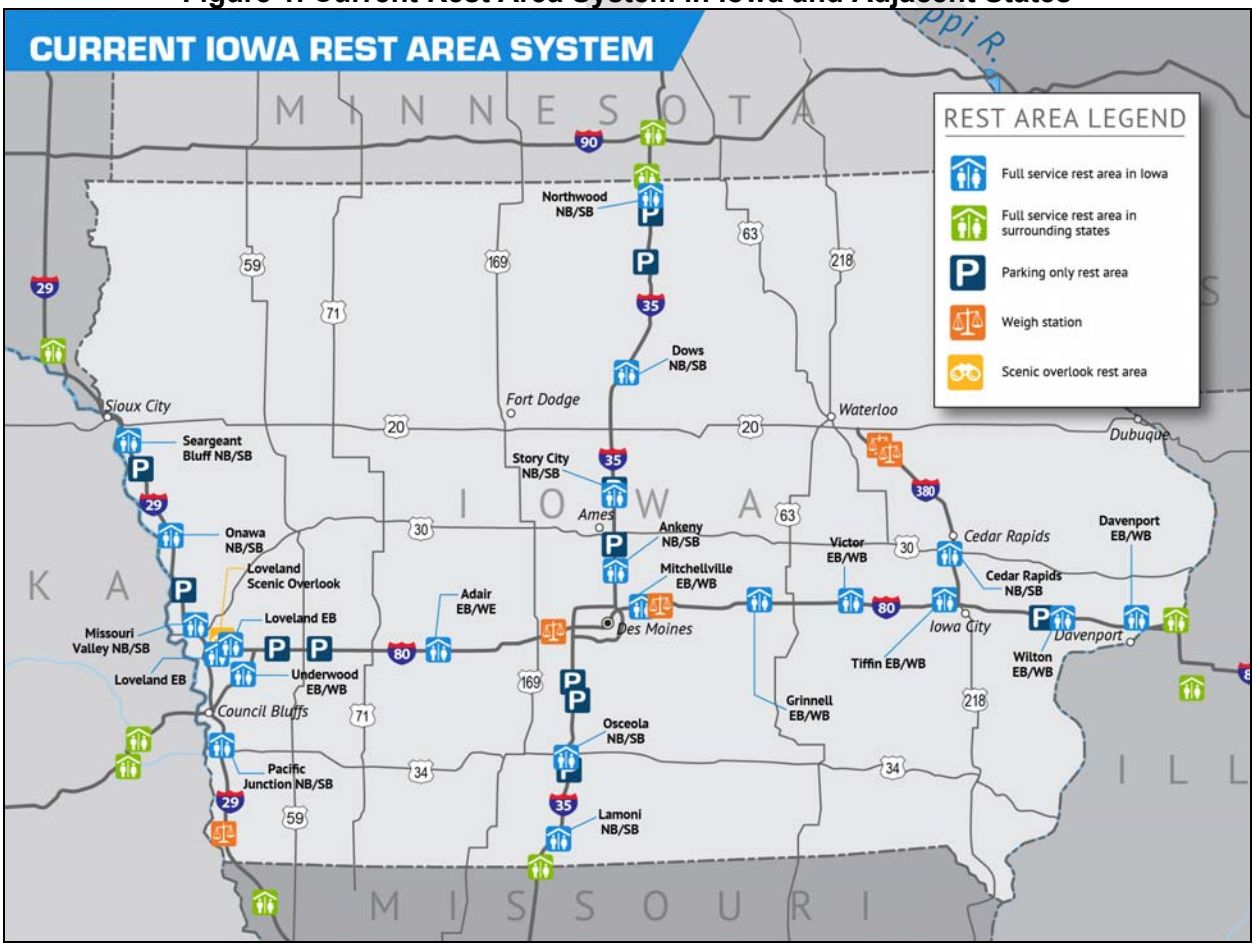
# Introduction

During the 1960's, the Iowa Department of Transportation (Department) began constructing rest area facilities along Iowa's interstates. At that time, these areas hosted modest facilities with separate buildings for restrooms and vending machines. These stopping points provided an opportunity for rest and relief for travelers across the State. Iowa's current Interstate Rest Area System consists of 38 full service rest areas and 16 parking only sites, which includes the Story County overlook on southbound Interstate 35 (I-35) near Story City. Of the 38 full service rest areas, 37 are open year round. The one location that is open seasonally is the Loveland Overlook rest area located on Interstate 680 (I-680). The Loveland Overlook rest area does not provide truck parking, a service that is heavily used among rest areas. These sites provide a convenience that is often appreciated by travelers in Iowa.

**Figure 1. Current Rest Area System in Iowa and Adjacent States**



## Background

According to the Federal-Aid Highway Act of 1956, the official purpose of a rest area is to provide safety and convenience. At that time, Federal policy suggested that approximately every half-hour of driving there should be an appropriate place to take a break. This includes state-run rest areas, commercial stops, and regular city exits. This half-hour guidance policy was set in 1958 by the American Association of State Highway Officials. This laid out detailed standards for the design and placement of rest areas across the national interstate system. Most rest areas were developed over the next two decades, as the interstate system was built[1]. The Federal Highway Administration has since changed this policy to a standard of one-hour between rest areas or Alternative Service Locations (ASLs). Typical ASL's include truck stops, gas stations, or parks. The Department uses this guidance for decision-making regarding rest area maintenance and management.

In 2013, the Department developed Iowa's Statewide Rest Area Management Plan (IRAMP) – Initial Report. This Initial Report summarized data across Iowa's interstate system and other locations along the interstate that provide rest area services. Since completing and publishing the initial report, the Department has focused funding allocations to improve rest areas on the system that are in most need of repair; while continuing to weigh the benefits of improvements to rest areas across the system as a whole. For example, there are two Waukee rest areas (Interstate 80 Dallas County - MP 81) which were initially reviewed based on data collected in 2012 and subsequently closed due to project impacts. Closure of these full service rest areas due to their conflict with planned local road improvements is complete. Additional truck parking was added to adjacent weigh stations. Parking and rest area needs in the area have been absorbed by the close proximity to many ASL's in the metro area.

In July of 2016, data collected during the initial management plan was updated and rest areas were again reviewed across the system to evaluate rest areas as well as data reliability. This review showed that data from 2012 continues to be consistent with data collected in 2016. The purpose of this final report is to provide results of this evaluation and make final recommendations regarding future planning and programming decisions related to the rest area system.[2]

**STUDY DETAILS**

**2012 REST AREA MANAGEMENT STUDY:** Summarized data across Iowa's interstate system and other locations along the interstate that provide rest area services.

**OUTCOME:** Focused funding allocations to improve rest areas on the system that are in most need of repair; while continuing to weigh the benefits of improvements to rest areas across the system as a whole.

**2016 REST AREA MANAGEMENT COMPARISON STUDY:** Data from 2012 continues to be consistent with 2016 data.

**OUTCOME:** Provide results and make final recommendations regarding future planning and programming decisions related to the rest area system.

[1] Are we there yet?: Determining the distance between rest stops on the interstate. http://www.slate.com/articles/life/travel_explainer/2015/08/rest_stop_distance_how_is_the_placement_of_rest_areas_on_highways_decided.html. (Retrieved August 16, 2017).

[2] Since the Loveland Overlook rest area is not open year round and does not provide truck parking, it was not included in the data collection efforts for this study nor included in the analysis.

## Data Collection & Review

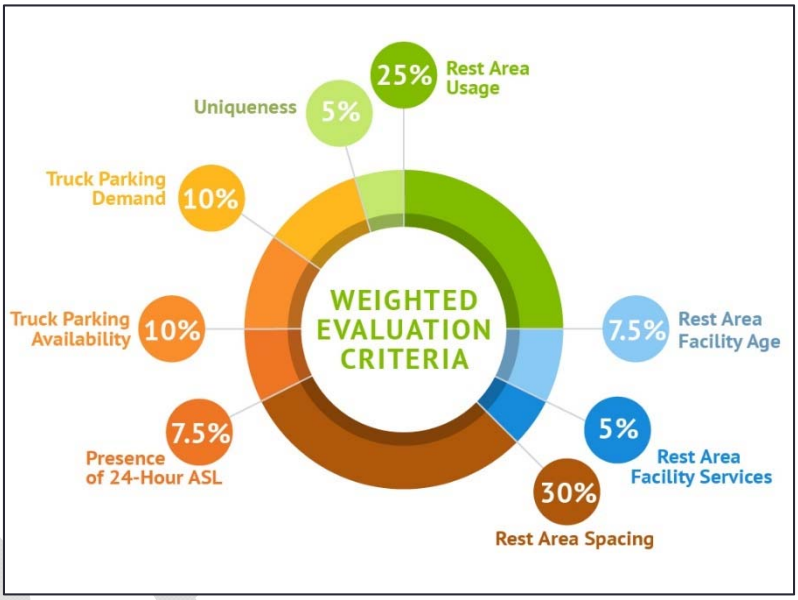
Existing conditions at each rest area in Iowa that are open year round were reviewed. All services provided at these rest areas are available 24 hours per day and are free of charge with the exception of public telephones and food purchased through vending. All rest areas in Iowa provide many of the same services, including parking, restrooms, picnic facilities, pet exercise areas, telephones, traveler information and Wi-Fi. The Department administered a rest area survey across the state from June 28, 2012 until July 23, 2012. The survey was designed to provide a qualitative assessment of user opinions regarding services and amenities at rest area locations. The 19-question survey was administered in-person at rest areas, online through direct email, QR code advertising, social media and by mail in surveys available at rest area locations; 759 surveys were completed through these methods.


**Traffic Counts -** Twenty-four hour daily traffic counts, including truck percentages, were conducted at each interstate rest area in 2012 and again in 2016. Daily traffic at each rest area varies by location. Rest areas on Interstate 80 (I-80) and Interstate 380 (I-380) have the highest average hourly volumes. Rest areas on Interstate 680 (I-680) have the lowest average hourly volumes. Peak traffic volumes generally occurred between 9:00 a.m. and 3:00 p.m.

**Parking Utilization –** Use of 24-hour parking for cars and trucks at each rest area was also recorded. Parking utilization for cars indicated that the number of car parking spaces at each rest area is sufficient based on observed demand during the peak times. Parking utilization for trucks was highest during overnight hours (approximately 10:00 p.m. to 8:00 a.m.). During much of this time, the number of trucks parking at a rest area exceeded the number of available parking spaces. When parking spaces were full, trucks continued to park on shoulders of rest area entry/exit ramps or in areas designated for cars. Parking in non-designated areas introduces a number of safety issues. Parking that encroaches onto the traveled way leads to unexpected pedestrian traffic and causes maintenance issues such as edge rutting and difficulties related to snow removal. The peak time for truck parking generally occurred between 2:00 a.m. and 6:00 a.m.

# Rest Area Evaluation & Ranking

**Scoring:** Each full service rest area was ranked and evaluated based on a variety of criteria. This was done to indicate which rest areas are critical to Iowa's rest area system as a whole. The IRAMP Rest Area Evaluation score ranks the importance of rest area relative to others within the system. IRAMP data was reviewed to identify factors relevant to benefits of providing a particular rest area. These factors were then used to determine criteria that would be evaluated for each rest area (see Figure 2):




- **Rest Area Usage** (weight 25%) – The amount of visitors per year at the rest area based on current usage and projected interstate traffic growth.
- **Rest Area Facility Age** (weight 7.5%) – The age of the existing buildings at the rest area.
- **Rest Area Facility Services** (weight 5%) – The number of different services provided at the rest area.
- **Rest Area Spacing** (weight 30%) – The distance (miles) to the adjacent upstream and downstream rest areas.
- **Presence of 24-Hour Alternative Service Locations (ASLs)** (weight 7.5%) – The presence of ASLs (alternatives to rest areas) that provide 24-hour services along the interstate within 30 miles of the rest area. Typical ASL's include truck stops, gas stations, or parks. Locations identified as ASL's were those in close proximity to the interstate, defined as being within three miles of interchanges in rural areas and within ½ mile of interchanges in urban areas.
- **Truck Parking Availability** (weight 10%) – The amount of truck parking provided at the rest area and the lack of available truck parking spaces along the interstate within 30 miles of the rest area at other locations (ASLs, parking only rest areas and weigh stations).
- **Truck Parking Demand** (weight 10%) – The number of trucks parked at a rest area; and the existing and projected future truck volumes on the adjacent interstate mainline.
- **Uniqueness** (weight 5%) – Intended to capture any cultural, special interest or aesthetic value for a rest area of interest. Presently this is used within the tool to identify themed rest areas.

A score was calculated for each criterion, at each full service rest area in Iowa.

An evaluation of all existing, full service, year round rest areas was completed to assess which rest areas ranked highest for additional investment. See **Appendix A,** for a complete list of rest area rankings per criterion. The weights used in this evaluation (discussed previously) place the

most importance on the Rest Area Spacing criterion (30 percent of Composite Score) and Rest Area Usage criterion (25 percent of Composite score). A variety of other criterion such as age, alternative service location availability, truck parking demand, and uniqueness were also used to rank the viability of the rest area in comparison to other rest areas. Scores are based on values at each rest area for a given criterion and how the values at each rest area relate to one another. A composite (overall) score for each rest area was also developed. The composite score was based on weights developed to give varying degrees of importance to each criterion. Individual and composite scores for each rest area were then used to rank each rest area based on individual criteria as well as a composite ranking.

**Ranking:** Based on composite scoring, this evaluation identified the following rest areas as the 10 highest ranking and most deserving of future investment. Explanations of why these rest areas were identified are also provided below (listed in alphabetical order) in **Table 1**.

**Table 1. Top 10 Highest Ranked Rest Area for Future Investment**

| Rest Area Location | Justification for Receiving the Most Amount Future Investment |
|---|---|
| **Adair Eastbound (I- 80 Adair County MP – 81)** | Ranks in the top 10 for 5 of the 8 criteria |
| **Adair Westbound (I-80 Adair County - MP 81)** | Ranks in the top 10 for 5 of the 8 criteria |
| **Cedar Rapids Northbound (I-380 Linn County - MP 13)** | Ranks in the top 10 for 6 of the 8 criteria, including a tie at number 1 for Rest Area Spacing |
| **Davenport Westbound (I-80 Scott County - MP 300)** | Ranks in the top 10 for 4 of the 8 criteria, including number 1 for Truck Parking Demand and number 7 for Rest Area Usage |
| **Dows Northbound/Southbound (I-35 Franklin County - MP 159)** | Ranks in the top 10 for 5 of the 8 criteria, including number 1 for Truck Parking Availability |
| **Northwood Northbound/Southbound (I-35 Worth County - MP 214** | Ranks in the top 10 for 6 of the 8 criteria, including number 3 for Rest Area Usage, and number 2 for Truck Parking Demand and Availability |
| **Tiffin Eastbound (I-80 Johnson County - MP 237)** | Ranks in the top 10 for 5 of the 8 criteria, including number 1 for Rest Area Usage |
| **Pacific Junction Northbound (I-29 Mills County - MP 38)** | Ranks in the top 10 for 2 of the 8 criteria including number 5 for Rest Area Spacing |

*Note: Alphabetical order; not by ranking*

This evaluation also identified the following rest areas as the 10 lowest ranking and least likely to receive future investment. Explanations of why these rest areas were identified are also provided below (listed on alphabetical order) in **Table 2**.

**Table 2. 10 Lowest Ranked; Least Likely to Receive Future Investment**

| Rest Area Location | Justification for Receiving Least Amount of Future Investment |
|---|---|
| **Davenport Eastbound (I-80 Scott County - MP 300)** | Ranks in the bottom 10 for 5 of the 8 criteria, including last for Rest Area Spacing. With the Illinois Rest Area on EB I-80 just over the border, this rest area is less utilized while the WB rest area remains viable |
| **Loveland Eastbound (I-680 Pottawattamie County – MP 16)** | Ranks in the bottom 10 for 5 of the 8 criteria, including last for Rest Area Usage |
| **Loveland Westbound (I-680 Pottawattamie County - MP 18)** | Ranks in the bottom 10 for 5 of the 8 criteria, including second to last for Rest Area Usage |
| **Missouri Valley Northbound (I-29 Harrison County - MP 79)** | Ranks in the bottom 10 for 4 of the 8 criteria, and doesn't rank in the top 10 for any of the 8 criteria |
| **Onawa Northbound (I-29 Monona County - MP 110)** | Ranks in the bottom 10 for 3 of the 8 criteria |
| **Onawa Southbound (I-29 Monona County - MP 110)** | Ranks in the bottom 10 for 3 of the 8 criteria |
| **Osceola Northbound (I-35 Clarke County - MP 33)** | Ranks in the bottom 10 for 2 of the 8 criteria, and doesn't rank in the top 10 for any of the 8 criteria |
| **Osceola Southbound (I-35 Clarke County - MP 33)** | Ranks in the bottom 10 for 4 of the 8 criteria, and doesn't rank in the top 10 for any of the 8 criteria |
| **Sergeant Bluff Northbound (I-29 Woodbury County - MP 139)** | Ranks in the bottom 10 for 3 of the 8 criteria, and doesn't rank in the top 10 for any of the 8 criteria |
| **Story City Northbound (I-35 Story County - MP 120)** | Ranks in the bottom 10 for 4 of the 8 criteria, and doesn't rank in the top 10 for any of the 8 criteria |

*Note: Alphabetical order; not by ranking*

# Current Funding

A review of the current 5-year (2017-2021) Iowa Transportation Investment Program was completed. The review identified planned funding for rest areas over the next 5 years and how it relates to the results of the rest area evaluation. **Table 3** notes improvements that are planned for rest areas statewide based on the current approved 5-year investment program.

**Table 3. Planned Rest Area Funding – 2017-2021**

| Rest Area Location | Funding Year | Planned Funding Amount |
|---|---|---|
| **Iowa County (Victor Eastbound) – Eastbound Rest Area Near Victor** | 2020 | $3,767,000 |
| **Mills County (Pacific Junction Northbound) – Rest Area North of US 34 (Northbound)** | 2022 | $3,647,000 |
| **Statewide Rest Area Maintenance (All Rest Area)** | 2018-2022 | $3,700,000/year |

Statewide rest area maintenance expenditures include rest areas among the lowest ranking for basic maintenance. Broad reconstruction improvements in the 5-year program do not currently include rest areas among the lowest ranked. Rest areas identified as highest ranking and that do not have planned improvements should be reviewed for future improvements.

# Proposed Rest Area Investment

In evaluating all rest areas across the system, with the exception of truck parking needs, the Department has identified 26 rest areas (see **Figure 2**) that are both adequate in size and number to satisfy the remaining needs of the traveling public. Targeted future investment in these rest areas will be pursued. The Department also recommends the schedule detailed in **Table 4** be considered for closing rest areas that have more limited value to the system. This schedule assumes 2020 as base year. As part of any recommended closure, the Department also intends to pursue investment strategies aimed at providing additional truck parking to mitigate the loss of truck parking with the proposed closures.

**Figure 2. Proposed Future Iowa Rest Area System**

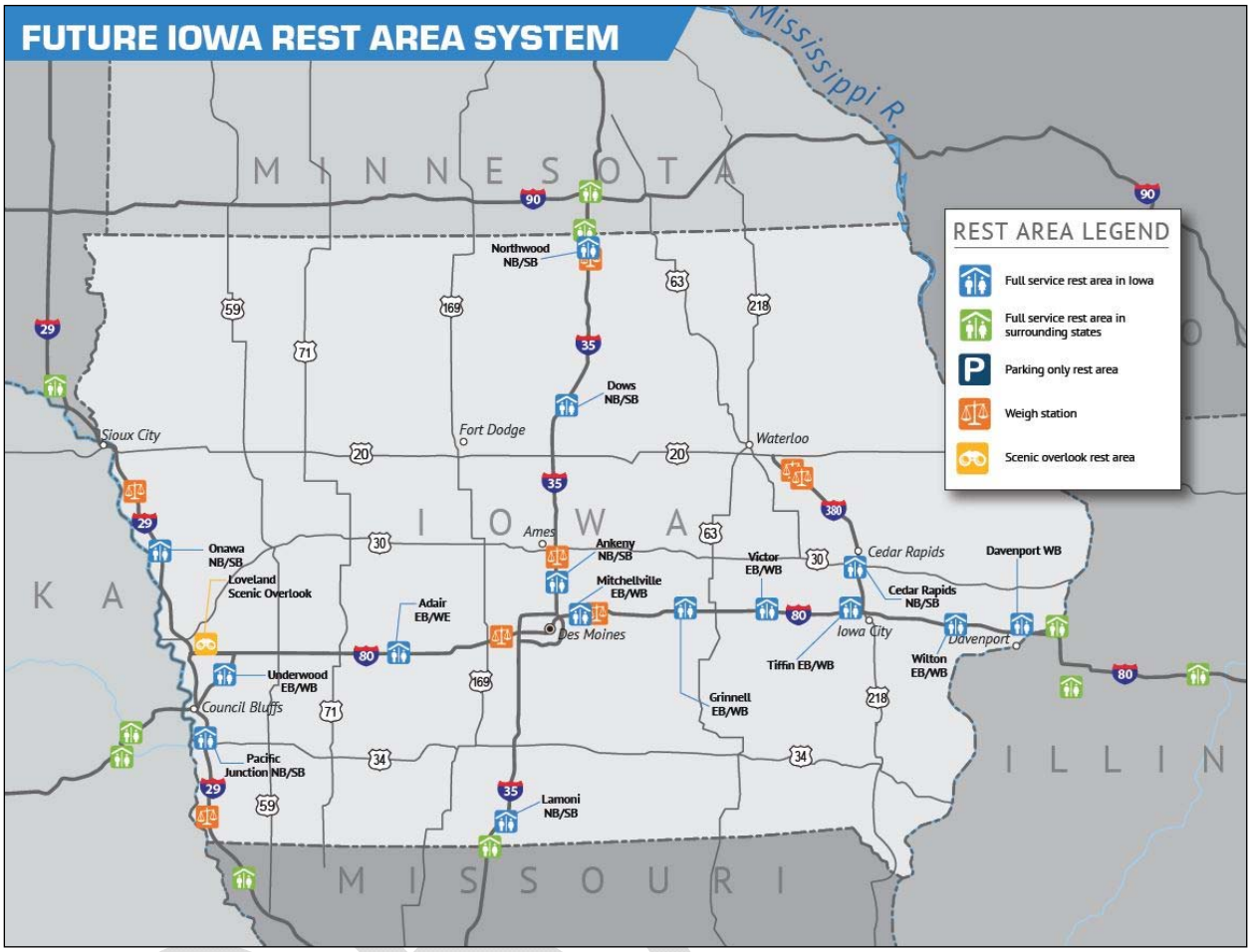


**Table 4. Recommended Closure Schedule**

## NEAR TERM (1–5 YEAR) CLOSURE RECOMMENDATIONS

- Davenport Eastbound *(I-80 Scott County MP-214)*
- Story County Northbound *(I-35 Story County – MP-105)*
- Salix Northbound *(I-29 Woodbury County – MP-132)*
- Avoca Eastbound *(I-80 Pottawattamie County – MP-44)*
- Wilton Eastbound *(I-80 Cedar County – MP-268)*
- Wilton Westbound *(I-80 Cedar County – MP-268)*
- Osceola Southbound *(I-35 Clark County – MP-30)*
- St Charles Northbound *(I-35 Warren County – MP-51)*
- St Charles Southbound *(I-35 Warren County – MP-53)*
- Northwood Northbound *(I-35 Worth County – MP-211)*
- Story County Overlook Southbound *(I-35 Story County – MP-120)*
- Mondamin Northbound *(I-29 Harrison County – MP-92)*
- Mondamin Southbound *(I-29 Harrison County – MP-92)*
- Minden Eastbound *(I-29 Pottawattamie County – MP-32)*
- Minden Westbound *(I-29 Pottawattamie County – MP-32)*

REST AREA LEGEND

Full service rest area

Parking only rest area

## MID-TERM (5–15 YEAR) CLOSURE RECOMMENDATIONS

- Loveland Eastbound *(I-680 Pottawattamie County – MP-16)*
- Loveland Westbound *(I-680 Pottawattamie County - MP-18)*
- Missouri Valley Northbound *(I-29 Harrison County - MP-79)*
- Missouri Valley Southbound *(I-29 Harrison County - MP-79)*
- Sergeant Bluff Northbound *(I-29 Woodbury County - MP-139)*
- Sergeant Bluff Southbound *(I-29 Woodbury County - MP-139)*
- Osceola Northbound *(I-35 Clarke County - MP-33)*
- Osceola Southbound *(I-35 Clarke County - MP-33)*
- Story City Northbound *(I-35 Story County - MP-120)*
- Clear Lake Northbound *(I-35 Cerro Gordo County – MP-196)*
- Clear Lake Southbound *(I-35 Cerro Gordo County – MP-196)*

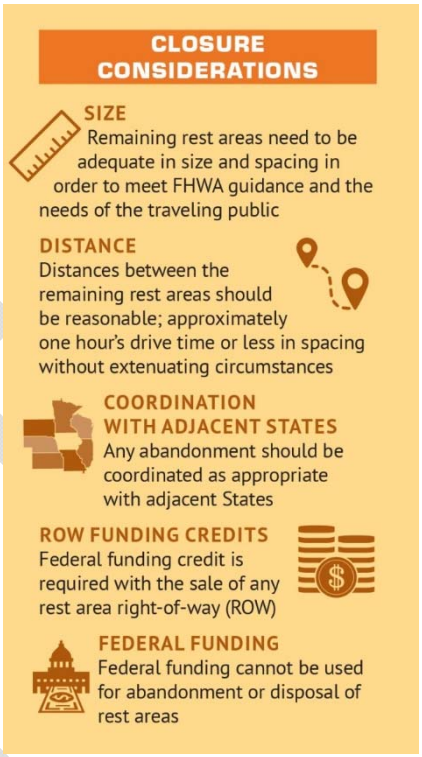
## LONG-TERM (15–30 YEAR) CLOSURE RECOMMENDATIONS

- Story City Southbound *(I-35 Story County – MP-119)*

# Closure Considerations

The Department's decision to close an existing rest area facility is being carefully considered. The Code of Federal Regulation (23 CFR 752) recommends that the five conditions be reviewed and considered when agencies are considering rest area closures. These conditions were all assessed and evaluated in closure decision-making.

- The remaining rest areas should be adequate in size and spacing to meet the needs of the traveling
- public
- The distances between the remaining rest areas should be reasonable; approximately one hour's drive time or less in spacing without extenuating circumstances
- Any abandonment should be coordinated as appropriate with adjacent States
- Federal Funding credit is required with the sale of any rest area ROW
- Federal Funding cannot be used for abandonment or disposal of rest areas




## Size

Considering that the Waukee rest area closures are reflected in the 2016 usage data, nine of the remaining 26 full service rest areas are expected to experience increases in patronage due to closures. The average increase in patronage is expected to be less than 280,000 visitors per year with the largest increase expected at the reconfigured Onawa Southbound rest area. The remaining redistribution will likely be to nearby ASLs.

## Spacing/Distance

FHWA recommends rest area spacing not to exceed approximately one hour. With the fluctuations in actual driving speed, we have assumed an hour driving distance equates to between 65 and 75 miles in length. With the proposed abandonments described within this plan, the distances between only three (out of 34) segments of interstate between rest areas will exceed the Federal Highway Administration (FHWA) recommended one-hour spacing:

- I-29 Northbound from 1st Northbound Missouri Rest Area (Dearborn, MO) to Pacific Junction – 135 miles (existing)
    - This portion of interstate already exceeds the recommended spacing, but has been in place since before this study began.
- I-35 Northbound Lamoni to Ankeny – 92 miles
    - Even though this length exceeds the recommended spacing, the Des Moines metropolitan area provides additional ASLs between the two rest areas to compensate for the removal of the intermediate rest areas.

- I-35 Southbound Ankeny to Lamoni – 92 miles
    - Even though this length exceeds the recommended spacing, the Des Moines metropolitan area provides additional ASLs between the two rest areas to compensate for the removal of the intermediate rest areas.

## Coordination with Adjacent States

Additional coordination will occur with South Dakota, Missouri, Nebraska, and Illinois to address any concerns or additional considerations prior to closure of rest areas adjacent to Iowa's border.

## Truck Parking

The largest impact to the traveling public will be impacts associated with the loss of truck parking. With the closure of 11 full service rest areas and 16 parking only rest areas, approximately 279 authorized truck parking spaces (approximately 35 percent) throughout the system would be removed. While ten of the 16 parking only sites are less than 74 percent utilized and four of the 12 full services sites are less than 94 percent utilized, the remaining rest areas are substantially over-utilized.

While truck parking at some full service rest areas adjacent to those closed may be able to absorb or be augmented over time with additional truck parking, increasing the size of the sites at some locations may be problematic due to terrain, access, adjacent land use, etc. Seven of the nine adjacent full service rest areas would likely require additional ROW to add truck parking and the remaining two could accommodate it on existing ROW. The cost to add additional truck parking at these full service rest areas would likely range from $1.75 to $3.5 million per site. Additionally, while the Department does accommodate for several hundred truck parking spots throughout the system and will likely grow this number over time, there is opportunity for private facilities to also assist through new development or expansion over time.

## Cost to Close

There is an inherent cost associated with the closure of a rest area. However, closing a rest area also brings future program savings in infrastructure improvements that no longer need to be made. The typical cost to close a full service rest area has been estimated at approximately $700,000 each, while the cost to replace an aging rest area is approximately $3,500,000. Closure of a parking only site is estimated to cost approximately $385,000.

In this implementation plan, recommendations have attempted to time closing of aging and less utilized full service rest areas sites to coincide with when additional investment would likely be required due to the aging infrastructure. As such, rather than spending $3,500,000 to improve or replace these sites, the Department expects to expend a lower (one time) cost to close which represents a program savings of $2,800,000 per site.

A portion of the cost to close could also possibly be recouped with the sale of the property, but depending on the location the revenue can range from nil (in more rural areas) to $100,000 (in a more urban setting). Final valuation and ability to recoup cost is dependent on many variables

such as original funding source, location, access, topography, etc. For this reason, it is recommended that, with a few exceptions, closures be pursued strategically as additional maintenance and reconstruction costs are weighed against the cost to close.

If the recommended closures are implemented, the Department could recognize as much as $25,000,000 in program savings over 15 years and greater than $30,000,000 in 20 years.

# Closure Recommendations & Accommodations

As evidenced by data collected in this Study, users have come to appreciate the convenience and services at existing rest areas. In an environment of overwhelming need and limited resources, it is also clear that future rest area investment will need to be prioritized based on benefits provided at each location. It is recommended that all rest area investment decisions be reviewed by Department staff to determine benefits of future investment. Further, future investment should be prioritized and directed to rest areas in most need of improvement. As needs arise among rest areas ranked least likely to receive future funding, closure should be considered in lieu of additional maintenance expenditures.

While telling, the overall ranking of the rest areas does not always tell the whole story. The decision to keep rest areas in operation should always be determined in consultation with management and staff who manage the rest area system. There are four examples of rest areas that ranked differently than recommendations for future maintenance.

Two full service rest areas that ranked as least important, but are recommended to remain open due to spacing of rest areas on the interstate system are the northbound and southbound rest areas located near Onawa in Monona County. If the Department were to close the Onawa Rest Areas, two additional segments of interstate would have exceeded FHWA recommended rest areas spacing (approximately 1 hour).

- Onawa Northbound (I-29 Monona County - MP 110)
- Onawa Southbound (I-29 Monona County - MP 110)

Due to the proximity of the Onawa rest areas, sharing of water treatment at Missouri Valley & Pacific Junction rest area pairs, as well as proximity of the Sergeant Bluff rest areas to the Sioux City metro area, it was also recommended that the following rest areas be closed.

- Sergeant Bluff Southbound (I-29 Woodbury County - MP 139
- Missouri Valley Southbound (I-29 Harrison County - MP 79)

In consideration of the entire rest area system, ten rest areas are recommended for phased closure in years 1-15 (see Table 5). These locations include:

**Table 5. Top 10 Rest Area Facilities Recommended for Closure – Years 1-15**

| Rest Area Closures – Years 1-15 |
|---|

| |
|---|
| Davenport Eastbound (I-80 Scott County - MP 300) |
| Loveland Eastbound (I-680 Pottawattamie County – MP 16) |
| Loveland Westbound (I-680 Pottawattamie County - MP 18) |
| Missouri Valley Northbound (I-29 Harrison County - MP 79) |
| Missouri Valley Southbound (I-29 Harrison County - MP 79) |
| Osceola Northbound (I-35 Clarke County - MP 33) |
| Osceola Southbound (I-35 Clarke County - MP 33) |
| Sergeant Bluff Northbound (I-29 Woodbury County - MP 139) |
| Sergeant Bluff Southbound (I-29 Woodbury County - MP 139) |
| Story City Northbound (I-35 Story County - MP 120) |

Although the Missouri Valley southbound rest area ranked higher on the scale, due to a shared sewage lagoon and distance to adjacent rest area, both the northbound and southbound areas were recommended for closure. Additionally, although the Sergeant Bluff rest area ranked higher, due to proximity to adjacent rest areas and alternative service locations in the metro area, both the Sergeant Bluff Northbound and Southbound rest areas were recommended for closure.

In addition to the ten lowest ranked rest areas listed above, it is further recommended that closures be considered for the following:

- **Sixteen Parking Only Rest Areas recommended for phased closure in years 1-7:** Ten of the 16 sites are less than 74 percent utilized during peak hours (less during off peak). With only two of the 16 sites accommodating more than eight truck parking spaces, impacts to the majority of the traveling public with these closures will be minimal. While maintenance costs are not generally high for these sites, there is great difficulty in keeping these parking only sites in safe and good sanitary condition for those who do use them. For these reasons these sites have been recommended for more immediate (1-7 year) closure. Several of these parking only sites are being considered for repurposing to virtual scale, inspection, and oversize/overweight parking sites.

  Several of the existing parking only sites are also repurposed weigh scales which have served as additional parking areas during the decommissioning of the scale sites. The parking site on NB I-35 in Story County (MP 105) is one such site which has been included in the parking only site listing, but was actually removed during the spring of 2018 during the final closure of the weigh station site.
- **Story City Southbound (I-35 Story County - MP 119) recommended for closure in years 15-30:** This rest area ranks in the bottom one third of rest areas on the system and largely benefits in the ranking due to a fairly recent (2009) reconstruction which updated the facility and services available. Removing this rest area would increase usage and benefit on the adjacent rest area on Southbound I-35 just north of Ankeny.

**Appendix B** illustrates the potential future rest area system with 11 full service rest area closures and the remaining rest areas fully utilized at their present location. With these planned

closures, it is anticipated that Iowa's remaining 26 full service rest areas would be more utilized, serve a greater benefit, and could be maintained with available resources. Due to closure of the parking only and full service rest areas, patronage at the remaining full service rest areas is anticipated to increase with the estimated usage shown in **Appendix C** (note: red indicates change).

These patronage estimates assume that if a rest area were closed, the adjacent rest areas would need to absorb both the patronage as well as truck parking usage for those taken out of service. It is recommended that truck parking, augmented services at weigh stations, and the remaining rest areas be considered strategically as funding becomes available to replace those lost due to closures. This report does not make specific recommendations for these replacements due to the large timeline for implementation and the likelihood that conditions may change between now and specific closures.

**Appendix D** (changes are denoted in red and green) indicates anticipated truck parking utilization at remaining rest areas based on the assumption that adjacent rest areas will need to absorb parking that was accommodated at closed, full service rest areas. It should be noted that although these studies have shown that not all patronage will use adjacent rest areas (in lieu of alternative service locations) and up to 40 percent of patronage and parking utilization will move to alternative service locations, we have assumed the worst case scenario and assumed the need for 100 percent redistribution to the first adjacent rest area (split 50 percent upstream and 50 percent downstream). Future funding for rest areas should consider strategies listed in the Iowa Statewide Rest Area Management Plan (IRAMP). These strategies include:

## Truck Parking Accommodations

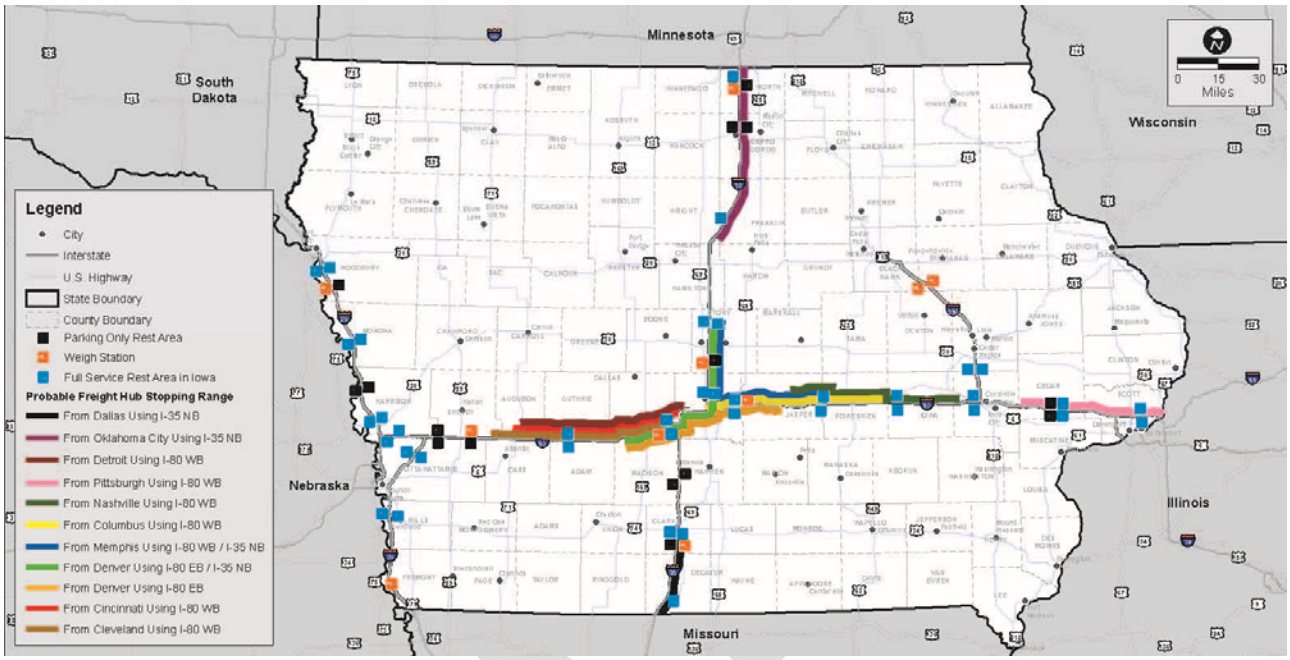
In consideration of rest area closures, impacts to truck parking are the single largest impact to the traveling public. In consideration of these impacts, the Department is planning for and investigating in potential mitigation efforts that will help offset inconveniences that may be experienced by freight travelers. Truck parking accommodations the Department is considering includes:

- Parking cameras and real time parking availability updates
- Augmenting truck parking at adjacent rest areas and weigh stations
- Interstate Oasis Program
- Public-Private Partnerships (P3)
- Automated vehicle technology

During this study, truck travel was reviewed to identify routes between major freight hubs that use Iowa interstates and probable locations where truck drivers would stop to rest throughout Iowa. With this in mind, the Department intends to more focus mitigation strategies to offset the loss of truck parking within these stopping ranges. The locations of these stopping ranges are shown below in Figure 3. Some items of note involving these stopping ranges are also reflected in the notes below:

- All 11 freight stopping ranges are located along I-80 or I-35.
- No freight stopping ranges are located along I-29. Minneapolis is the only major freight hub north of Iowa that was identified. Routes to and from Minneapolis use I-35 to travel north/south through Iowa. The next largest city north of Iowa is Winnipeg, Canada. Some routes to and from Winnipeg use I-29; however, the population for Winnipeg is below the threshold of 1,000,000 used in this review.
- Eight of the 11 freight stopping ranges have portions that are 30 minutes or less from the Des Moines metropolitan area. The areas encompassed by these eight ranges include approximately 1,020 of the 5,360 truck parking spaces identified along Iowa interstates. The areas encompassed by the other three ranges include approximately 1,810 of the 5,360 truck parking spaces.

**Figure 3. Freight Stopping Hubs in Iowa**




**Parking Cameras & Real Time Updates**

With the planned closures, a total of 279 truck parking spots will be lost throughout the system. While that is 35 percent of the available truck parking spots throughout the rest area system, approximately 660 unused truck parking spots were available at adjacent ASL locations at the time of data collection. The real issue is not necessarily the lack of parking spots, but no good way to quickly communicate with our freight partners where parking is available.

The Department has placed real time truck parking availability cameras into operation at the rest areas along I-35 to provide real time truck parking availability to those in need. While it has been useful, it is time consuming for those looking for a spot to quickly assess multiple locations along a particular route.

With this in mind, Transportation Investment Generating Economic Recovery (TIGER) Grant funding has also been secured to fund implementation of a Mid America Association of State Transportation Officials (MAASTO) regional Truck Parking Information Management Systems (TPIMS) which will collect and broadcast real-time parking availability to drivers through a variety of media outlets including dynamic signs, smart phone applications and traveler information websites. This will help drivers proactively plan their routes and make safer, smarter parking decisions at rest areas as well as private parking areas. It is envisioned that this could be operational by September 2018 and would provide real time availability along I-80 between the Mississippi River and the Des Moines metro. Additionally, a truck parking availability application is currently in development by the Truck Parking Information Management Systems (TPIMS) through this same grant.

While the DOT has several hundred available truck parking spots available throughout the rest areas system, our ASL partners have thousands available. The real task will be quickly communicating availability to those with a parking need.

**Augmenting truck parking at adjacent rest areas & weigh stations**

Also to be considered at the time of each closure is ability by the Department to add truck parking spaces at adjacent rest areas and weigh stations. At the time of each closure, the Department intends to evaluate and pursue replacement of the lost spaces at other rest areas and weigh-stations across the system. The column “Truck spaces to accommodate” shown in **Appendix D** identifies potential needs for additional spaces at each of the remaining full service rest areas. These needs will be more fully considered at time of closure in consideration of any changes that may have developed in the vicinity of the closed rest area that potentially could affect truck parking needs.

Over time, additional alternative service locations will likely be built along the Interstate which may also mitigate the need for adding additional truck parking spaces at adjacent rest areas. For these reasons, adding additional truck parking at adjacent rest areas or alternative service locations will be considered at the time the closures occur to strategically consider and mitigate the loss of truck parking. The Department also intends to coordinate the level and location of replacement truck parking with the Iowa Motor Truck Association (IMTA) and the Petroleum Marketers and Convenience Stores of Iowa (PMCI) at the time of need as they become more informed regarding future alternative service location development.

Since the closures identified within this study are likely to occur over the next 20+ years, this will be an on-going effort.

**Interstate Oasis Program**

An Interstate Oasis is an off-freeway facility, such as a truck stop that supplements public rest areas. To qualify as an Oasis, the facility must offer products and services to the public, 24-hour access to restrooms, and parking for automobiles and heavy trucks. The facility must be off of the Interstate right of way, but near an exit which a driver can return to the Interstate and travel in the same direction they left. The Department is interested in establishing an Interstate Oasis program within the state to help offset the truck parking accommodations that will be lost with planned closures of existing rest areas. States are allowed to partner with private operators who meet the minimum criteria to provide basic rest area services in exchange for online highway signing and official designation as an Interstate Oasis. Interstate Oases result in expanded free parking and rest room services to supplement the services available at the existing rest areas without having construct and maintain new rest area facilities. Further analysis is needed to determine the feasibility of an Interstate Oasis program in the State of Iowa.

**Public-Private Partnerships (P3)**

A public-private partnership is a cooperative agreement between two or more public and private entities, typically of a long-term nature. Title 23 of the United States Code does prohibit the

private and/or commercial development at travel information centers or rest areas. Also, Iowa State Code 306C.21 states that since January in 1997, private development may not develop, establish, or own any commercial business located adjacent to a rest area. Further, State Code notes that state money and resources shall not be used for any other type of interstate rest area. With this in mind, the Department is fairly limited in terms of partnerships it can pursue. Should future legislation open up opportunities to investigate P3 partnering relationships in relation to the rest areas, the Department would consider partnerships to help mitigate the loss of truck parking throughout the system.

**Automated vehicle technology**

Over time, the need for additional truck parking may also be offset by the proliferation of automated car and truck technology which may require fewer rest areas. Automated trucks will use sensors, radar, cameras, and a navigation system to drive on the road. Currently truck drivers have to stop due to hours of service limitations. These laws will need to be reassessed as automated vehicles become more mainstream; the magnitude of change and the timing are definitely uncertain.

An opportunity with greater certainty is in automated vehicles and the internet of things opening up the possibilities to parking areas outside the freeway right of way. Having nearly unlimited access to knowledge of parking availability and other suitable parking opportunities should open some doors for spreading out the surge demand and public-private partnerships to mitigate the overnight agency truck parking.

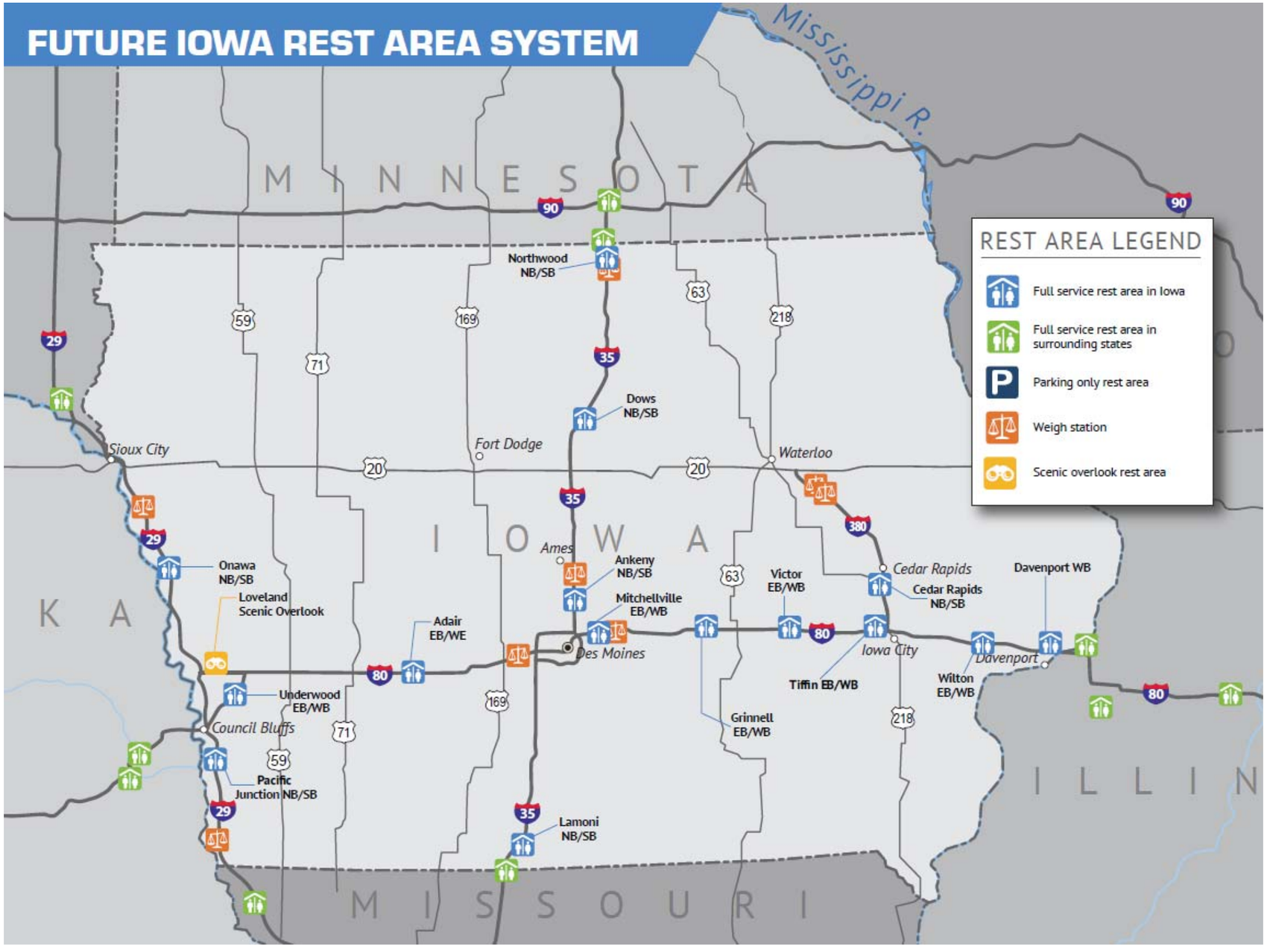
# Conclusion

While initially it does appear that closure of these less utilized sites and further investment into sites that are more used would be in the public interest, the Department intends to take some time to fully consider the ramifications of these proposed closures. This will include public involvement as well as evaluation of the system after implementation of the TPIMS truck parking availability system mentioned within this report through September of 2019. If both feedback and implementation support closures, the Department intends to move forward with the proposed closures on the schedule outlined within.

# Appendix A: Existing Rest Area Evaluation

| Name | Corridor | Usage Index | Facility Age | Rest Area Services | Rest Area Spacing | ASL Presence | Truck Parking Availability | Truck Parking Demand | Uniqueness | Overall Rank |
|---|---|---|---|---|---|---|---|---|---|---|
| Adair WB | I-80 | 7 | 5 | 15 | 4 | 25 | 14 | 12 | 1 | 1 |
| Adair EB | I-80 | 4 | 10 | 1 | 3 | 30 | 14 | 19 | 1 | 1 |
| Cedar Rapids NB | I-380 | 11 | 4 | 1 | 1 | 36 | 22 | 7 | 1 | 3 |
| Northwood NB/SB | I-35 | 3 | 19 | 1 | 29 | 3 | 2 | 2 | 1 | 4 |
| Tiffin EB | I-80 | 1 | 6 | 15 | 22 | 32 | 3 | 5 | 1 | 5 |
| Davenport WB | I-80 | 2 | 13 | 15 | 12 | 11 | 34 | 1 | 1 | 6 |
| Underwood EB | I-80 | 17 | 8 | 1 | 6 | 16 | 33 | 22 | 1 | 7 |
| Dows NB/SB | I-35 | 15 | 9 | 1 | 9 | 31 | 1 | 6 | 14 | 8 |
| Tiffin WB | I-80 | 6 | 13 | 1 | 22 | 32 | 3 | 3 | 14 | 8 |
| Pacific Junction NB | I-29 | 13 | 21 | 15 | 5 | 4 | 30 | 28 | 14 | 10 |
| Ankeny NB | I-35 | 18 | 2 | 1 | 21 | 8 | 7 | 13 | 1 | 10 |
| Cedar Rapids SB | I-380 | 21 | 20 | 15 | 1 | 36 | 25 | 11 | 14 | 10 |
| Mitchellville WB | I-80 | 9 | 10 | 15 | 10 | 21 | 26 | 10 | 14 | 10 |
| Ankeny SB | I-35 | 26 | 2 | 1 | 24 | 8 | 6 | 16 | 1 | 14 |
| Grinnell EB | I-80 | 8 | 17 | 1 | 27 | 28 | 5 | 14 | 14 | 14 |
| Wilton EB | I-80 | 5 | 10 | 1 | 19 | 26 | 35 | 8 | 14 | 16 |
| Wilton WB | I-80 | 10 | 17 | 1 | 19 | 26 | 37 | 4 | 1 | 16 |
| Lamoni NB/SB | I-35 | 12 | 15 | 1 | 32 | 18 | 13 | 18 | 12 | 18 |
| Story City SB | I-35 | 27 | 7 | 1 | 34 | 10 | 19 | 24 | 1 | 19 |
| Mitchellville EB | I-80 | 22 | 35 | 15 | 11 | 21 | 17 | 9 | 14 | 20 |
| Grinnell WB | I-80 | 20 | 1 | 15 | 27 | 28 | 31 | 21 | 14 | 20 |
| Sergeant Bluff SB | I-29 | 28 | 15 | 1 | 17 | 19 | 20 | 34 | 12 | 22 |
| Underwood WB | I-80 | 23 | 31 | 15 | 7 | 16 | 32 | 23 | 14 | 23 |
| Victor EB | I-80 | 14 | 33 | 15 | 30 | 6 | 8 | 20 | 14 | 23 |
| Victor WB | I-80 | 16 | 33 | 15 | 30 | 6 | 11 | 15 | 14 | 23 |
| Pacific Junction SB | I-29 | 32 | 21 | 15 | 8 | 4 | 27 | 35 | 14 | 26 |
| Missouri Valley SB | I-29 | 19 | 23 | 15 | 15 | 13 | 28 | 32 | 14 | 26 |
| Osceola NB | I-35 | 24 | 23 | 15 | 13 | 34 | 24 | 27 | 14 | 28 |
| Osceola SB | I-35 | 25 | 23 | 15 | 13 | 34 | 23 | 26 | 14 | 28 |
| Onawa NB | I-29 | 29 | 23 | 15 | 25 | 23 | 10 | 31 | 14 | 30 |
| Onawa SB | I-29 | 33 | 23 | 15 | 25 | 23 | 12 | 30 | 14 | 31 |
| Story City NB | I-35 | 31 | 31 | 15 | 33 | 15 | 16 | 25 | 14 | 31 |
| Missouri Valley NB | I-29 | 34 | 23 | 34 | 15 | 13 | 28 | 32 | 14 | 33 |
| Sergeant Bluff NB | I-29 | 35 | 35 | 15 | 17 | 19 | 21 | 29 | 14 | 33 |
| Loveland WB | I-680 | 36 | 29 | 37 | 35 | 1 | 9 | 36 | 14 | 35 |
| Loveland EB | I-680 | 37 | 29 | 36 | 36 | 1 | 18 | 37 | 14 | 36 |
| Davenport EB | I-80 | 30 | 35 | 34 | 37 | 11 | 36 | 17 | 14 | 37 |
| Waukee EB | I-80 | - | - | - | - | - | - | - | - | - |
| Waukee WB | I-80 | - | - | - | - | - | - | - | - | - |

Appendix B: Proposed Future Rest Area System



# Appendix C: Rest Area Visitor Estimates (considering closures)

| Name | Corridor | Year Built | ASL's within 30 miles (on the interstate) | Existing Usage (visitors/year) | Estimated Future Usage (visitors/year) | Additional Usage due to closure |
|---|---|---|---|---|---|---|
| Ankeny NB | I-35 | 2014 | 7 | 364,012 | 699,558 | 335,546 |
| Ankeny SB | I-35 | 2014 | 7 | 311,680 | 654,316 | 342,636 |
| Lamoni NB/SB | I-35 | 2000 | 3 | 502,636 | 902,341 | 399,705 |
| Dows NB/SB | I-35 | 2003 | 0 | 493,385 | 771,862 | 278,477 |
| Adair EB | I-80 | 2002 | 3 | 540,455 | 540,455 | - |
| Northwood NB/SB | I-35 | 1998 | 20 | 701,364 | 701,364 | - |
| Cedar Rapids NB | I-380 | 2012 | 0 | 513,648 | 513,648 | - |
| Adair WB | I-80 | 2011 | 2 | 582,168 | 582,168 | - |
| Pacific Junction NB | I-29 | 1974 | 11 | 486,000 | 589,364 | 103,364 |
| Wilton EB | I-80 | 2002 | 3 | 657,818 | 799,227 | 141,409 |
| Tiffin EB | I-80 | 2010 | 0 | 766,791 | 766,791 | - |
| Davenport WB | I-80 | 2001 | 5 | 699,682 | 699,682 | - |
| Onawa SB | I-29 | 1971 | 2 | 206,164 | 675,752 | 469,588 |
| Tiffin WB | I-80 | 2001 | 0 | 694,051 | 694,051 | - |
| Onawa NB | I-29 | 1971 | 2 | 369,477 | 560,227 | 190,750 |
| Underwood EB | I-80 | 2007 | 4 | 393,141 | 393,141 | - |
| Mitchellville WB | I-80 | 2002 | 4 | 474,682 | 474,682 | - |
| Grinnell EB | I-80 | 1999 | 2 | 601,273 | 601,273 | - |
| Wilton WB | I-80 | 1999 | 3 | 418,045 | 418,045 | - |
| Cedar Rapids SB | I-380 | 1975 | 0 | 339,852 | 339,852 | - |
| Pacific Junction SB | I-29 | 1974 | 11 | 228,864 | 452,055 | 223,191 |
| Grinnell WB | I-80 | 2016 | 2 | 361,364 | 361,364 | - |
| Mitchellville EB | I-80 | 1966 | 4 | 350,818 | 350,818 | - |
| Victor EB | I-80 | 1967 | 7 | 401,068 | 401,068 | - |
| Victor WB | I-80 | 1967 | 7 | 386,035 | 386,035 | - |
| Underwood WB | I-80 | 1969 | 4 | 300,864 | 300,864 | - |
| Missouri Valley NB | I-29 | 1971 | 4 | 206,727 | - | |
| Missouri Valley SB | I-29 | 1971 | 4 | 446,381 | | |
| Sergeant Bluff SB | I-29 | 2000 | 4 | 492,795 | | |
| Sergeant Bluff NB | I-29 | 1966 | 4 | 174,773 | - | |
| Osceola NB | I-35 | 1971 | 0 | 437,864 | - | |
| Osceola SB | I-35 | 1971 | 0 | 361,545 | - | |
| Story City SB | I-35 | 2009 | 5 | 323,727 | - | |
| Story City NB | I-35 | 1969 | 4 | 233,227 | - | |
| Davenport EB | I-80 | 1966 | 5 | 282,818 | - | |
| Loveland EB | I-680 | 1970 | 20 | 185,091 | - | |
| Loveland WB | I-680 | 1970 | 20 | 176,864 | - | |

# Appendix D: Truck Utilization Estimates (considering closure)

| Name | Corridor | Year Built | ASL's within 30 miles (on the interstate) | Existing Authorized Truck Spaces | Existing Truck Utilization (%) | Spaces Utilized (including non authorized spaces) | Existing Distance to Upstream RA | Existing Distance to Downstream RA | Anticipated Future Truck Spaces Needed | Anticipated Future Truck Utilization(%) | Spaces to accommodate existing demand | New Distance to Upstream RA | New Distance to Downstream RA |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ankeny NB | I-35 | 2014 | 7 | 21 | 152% | 32 | 66 | 21 | 42 | 202% | 21 | 92 | 60 |
| Ankeny SB | I-35 | 2014 | 7 | 22 | 127% | 28 | 20 | 66 | 39 | 177% | 17 | 60 | 92 |
| Lamoni NB/SB | I-35 | 2000 | 3 | 16 | 131% | 21 | 26 | 9 | 42 | 265% | 26 | 92 | 9 |
| Dows NB/SB | I-35 | 2003 | 0 | 50 | 72% | 36 | 55 | 40 | 53 | 105% | 3 | 55 | 40 |
| Adair EB | I-80 | 2002 | 3 | 12 | 333% | 40 | 67 | 61 | 40 | 333% | 28 | 73 | 66 |
| Northwood NB/SB | I-35 | 1998 | 20 | 34 | 103% | 35 | 55 | 5 | 35 | 103% | 1 | 55 | 5 |
| Cedar Rapids NB | I-380 | 2012 | 0 | 16 | 231% | 37 | 44 | 154 | 37 | 231% | 21 | 44 | N/A |
| Adair WB | I-80 | 2011 | 2 | 12 | 217% | 26 | 62 | 66 | 26 | 217% | 14 | 67 | 74 |
| Pacific Junction NB | I-29 | 1974 | 11 | 15 | 180% | 27 | 135 | 41 | 34 | 227% | 19 | 135 | 72 |
| Wilton EB | I-80 | 2002 | 3 | 16 | 125% | 20 | 33 | 30 | 27 | 169% | 11 | 33 | 37 |
| Tiffin EB | I-80 | 2010 | 0 | 23 | 100% | 23 | 29 | 33 | 23 | 100% | 0 | 29 | 33 |
| Davenport WB | I-80 | 2001 | 5 | 20 | 210% | 42 | 57 | 30 | 42 | 210% | 22 | 57 | 30 |
| Onawa SB | I-29 | 1971 | 2 | 15 | 133% | 20 | 29 | 31 | 32 | 213% | 17 | 68 | 72 |
| Tiffin WB | I-80 | 2001 | 0 | 23 | 148% | 34 | 33 | 29 | 34 | 148% | 11 | 31 | 29 |
| Onawa NB | I-29 | 1971 | 2 | 16 | 100% | 16 | 31 | 29 | 31 | 197% | 15 | 72 | 68 |
| Underwood EB | I-80 | 2007 | 4 | 15 | 147% | 22 | 49 | 62 | 22 | 147% | 7 | 49 | 62 |
| Mitchellville WB | I-80 | 2002 | 4 | 22 | 150% | 33 | 33 | 67 | 33 | 150% | 11 | 33 | 67 |
| Grinnell EB | I-80 | 1999 | 2 | 25 | 108% | 27 | 33 | 28 | 27 | 108% | 2 | 33 | 29 |
| Wilton WB | I-80 | 1999 | 3 | 15 | 140% | 21 | 30 | 33 | 21 | 140% | 6 | 30 | 33 |
| Cedar Rapids SB | I-380 | 1975 | 0 | 15 | 227% | 34 | 154 | 44 | 34 | 227% | 19 | N/A | 44 |
| Pacific Junction SB | I-29 | 1974 | 11 | 15 | 107% | 16 | 41 | 54 | 23 | 154% | 8 | 72 | 62 |
| Grinnell WB | I-80 | 2016 | 2 | 10 | 140% | 14 | 28 | 33 | 14 | 140% | 4 | 28 | 33 |
| Mitchellville EB | I-80 | 1966 | 4 | 24 | 138% | 33 | 66 | 33 | 33 | 138% | 9 | 66 | 33 |
| Victor EB | I-80 | 1967 | 7 | 22 | 77% | 17 | 28 | 29 | 17 | 77% | -5 | 28 | 29 |
| Victor WB | I-80 | 1967 | 7 | 19 | 142% | 27 | 29 | 28 | 27 | 142% | 8 | 29 | 28 |
| Underwood WB | I-80 | 1969 | 4 | 16 | 125% | 20 | 61 | 42 | 20 | 125% | 4 | 61 | 42 |
| Missouri Valley NB | I-29 | 1971 | 4 | 13 | 108% | 14 | 41 | 31 | | | | | |
| Missouri Valley SB | I-29 | 1971 | 4 | 13 | 108% | 14 | 31 | 41 | | | | | |
| Sergeant Bluff SB | I-29 | 2000 | 4 | 15 | 67% | 10 | 38 | 29 | | | | | |
| Sergeant Bluff NB | I-29 | 1966 | 4 | 14 | 121% | 17 | 29 | 38 | | | | | |
| Osceola NB | I-35 | 1971 | 0 | 11 | 191% | 21 | 26 | 66 | | | | | |
| Osceola SB | I-35 | 1971 | 0 | 11 | 200% | 22 | 66 | 26 | | | | | |
| Story City SB | I-35 | 2009 | 5 | 15 | 120% | 18 | 40 | 20 | | | | | |
| Story City NB | I-35 | 1969 | 4 | 16 | 94% | 15 | 21 | 39 | | | | | |
| Davenport EB | I-80 | 1966 | 5 | 14 | 100% | 14 | 30 | 7 | | | | | |
| Loveland EB | I-680 | 1970 | 20 | 10 | 80% | 8 | 11 | 67 | | | | | |
| Loveland WB | I-680 | 1970 | 20 | 15 | 67% | 10 | 64 | 13 | | | | | |