Rest Area Management

Implementation Plan - Part 2

August 2020

FINAL

IOWA DOT

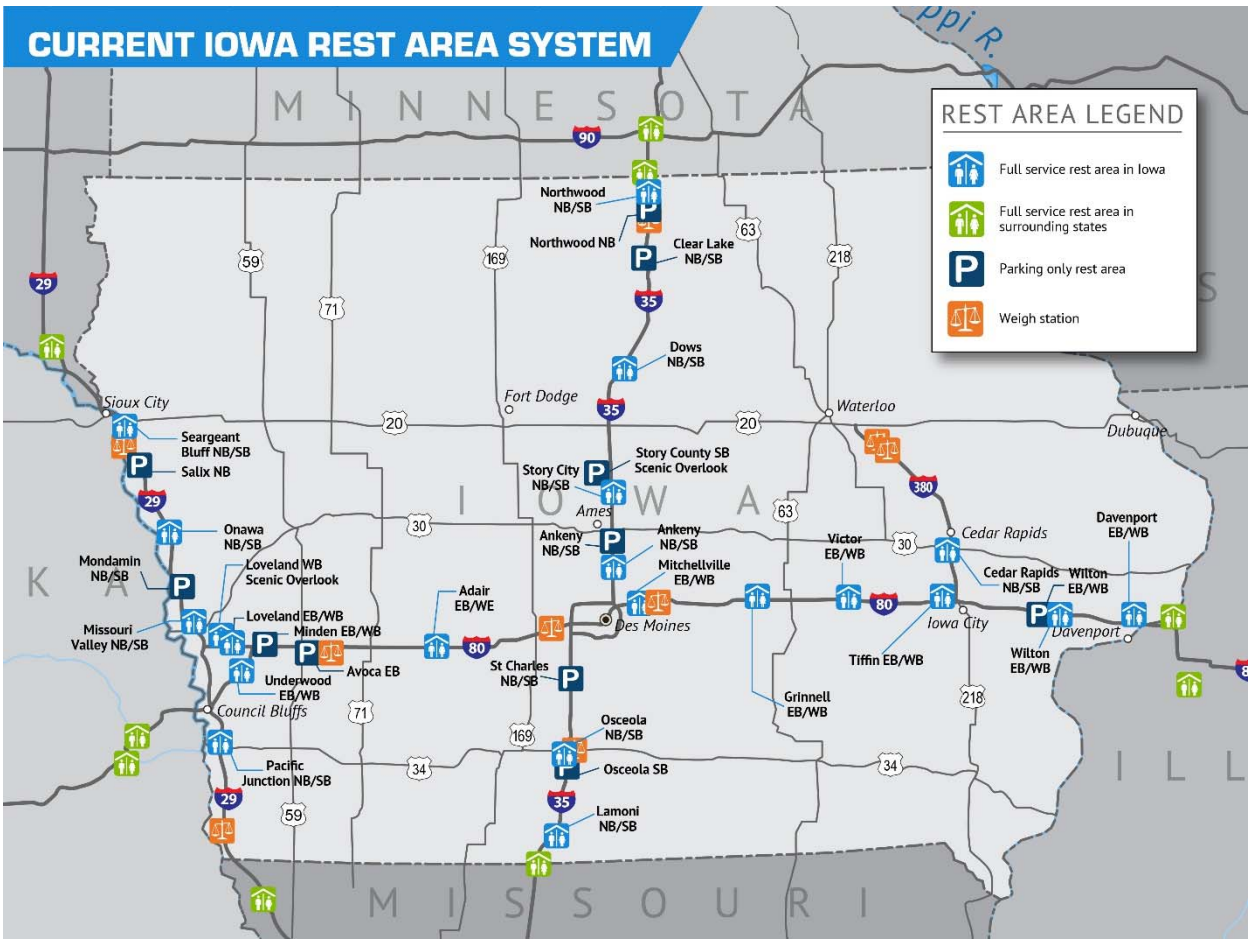
SMARTER | SIMPLER | CUSTOMER DRIVEN

Contents

Executive Summary

Rest area facilities throughout the state play an important role in our transportation system. Iowa's current Interstate Rest Area System consists of 38 full service rest areas which includes one seasonal overlook, and 16 parking only sites (see Figure 1). Drivers across the state rely on the convenience of rest areas during extended travel. These sites provide a convenience that is appreciated by most travelers in Iowa. In 2012, the Iowa Department of Transportation (Department) began a study to be able to make better decisions about future investments in the rest area system. Of the 38 full service rest areas, 18 will reach 50 years of age in the next five years. As these facilities get closer to this age, there is an urgent need for either considerable investment for rehabilitation or closure of lesser used facilities.

Figure 1. Current Rest Area System



In 2018, we released the Draft Rest Area Management Implementation Plan – Part 1 and asked for public input on the Department's review of future investments/closures throughout the system. This original draft plan did include several closures throughout the rest area system. The Draft Implementation Plan was not a formal commitment to these closures, but an initial

assessment of the system and driver needs that included recommendations to close lesser used facilities.

Over the course of nearly eight months, we collected public input and conducted an extensive freight truck parking study throughout the state. After listening to the public and further analyzing the needs of freight truck drivers we learned that Iowa travelers care about rest areas and the services they provide to the traveling public. Because of this extensive public response, we have reevaluated the original closure recommendations.

From public input gathered, we learned that drivers appreciate the convenience of rest area locations and services available which reduces the perception of an obligation to purchase retail during similar rest stops at Alternative Service Locations (ASL's) such as truck stops.

Freight/commercial truck drivers also reported a significant need for additional freight truck parking throughout the interstate system. Recommendations from the Truck Parking Study include:

- Expand Truck Parking Information Management System (TPIMS) solutions with additional sites, educational outreach to drivers and carriers, and integration with other parking apps and Electronic Logging Devices.
- Invest in vehicle-to-infrastructure technology to provide real-time parking information.
- Add a truck parking reservation system, particularly for oversize trucks.
- Use TPIMS historical data and predictive analytics to predict parking availability.
- Expand truck parking at select sites to offset parking which may be lost from rest area closures and further expand total truck parking during upgrades to remaining sites. Initial findings indicate that over 247 spaces across the State system could be added within existing rest area sites.
- Explore partnerships with public agencies and private companies to supplement truck parking, optimize the locations of truck parking capacity, and maximize DOT investment.

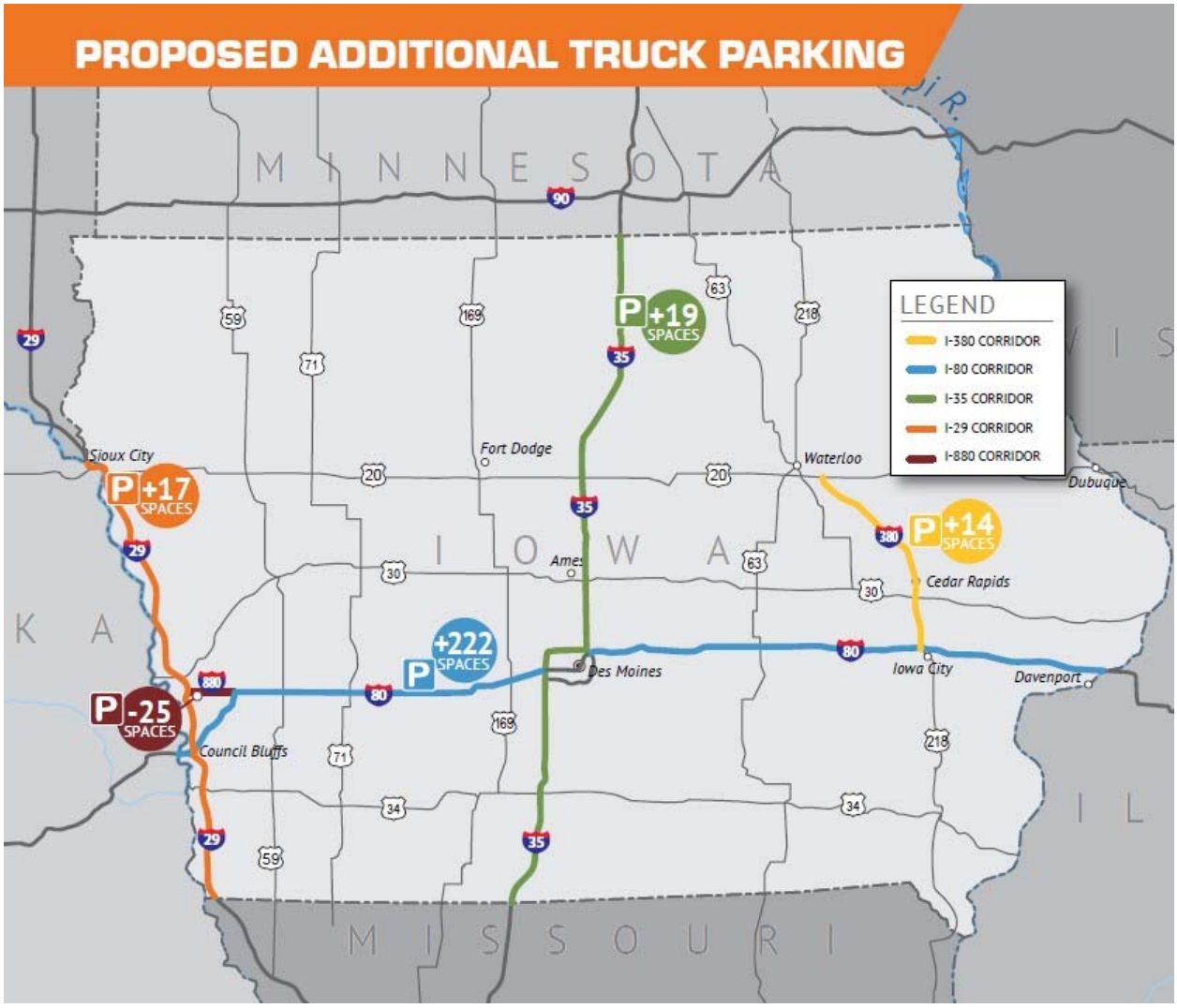
In consideration of all the data collected, feedback received, and the conclusion of the truck parking study, with this implementation plan the Department is proposing to:

- Upgrade the buildings and expand truck parking at twelve (12) aging (approaching 50 years of age or more) full-service rest areas between 2022-2033
- Expand truck parking at six (6) strategically located parking only sites and install vault toilets at these sites prior to 2028
- Close ten (10) small (less than six truck parking spots each) and lesser used parking only sites prior to 2028
- Close seven (7) aging and lesser used full rest areas prior to 2028
- Re-evaluate the proposed closure of one (1) newer full-service site when the building approaches the end of its useful life in approximately 30 years.
- Continue to manage the remaining 30 expanded, full-service and 6 parking-only sites throughout the system. These sites will include approximately 247 net additional truck parking spaces (an increase of just over 30%) throughout the system.

This new implementation plan also identifies a funding scenario for the additional 247 truck parking spots throughout the system. While funding is never certain, it is the Department's objective to do it's best to add truck parking as opportunities present themselves. This document, the Rest Area Management Implementation Plan, provides the results of the Departments findings from this study and proposed final recommendations for the system.

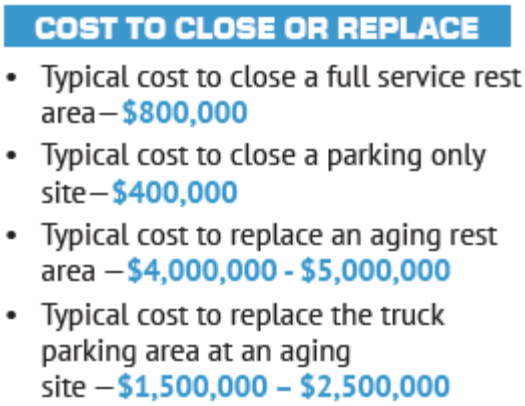
With this plan, over the next 30 years, the Department will need to invest just over $100 million to upgrade the remaining aging rest areas within the lifecycle of this plan. Additionally, this amount includes the cost for proposed future trucking parking facility removal and upgrades. Figure 2 illustrates the potential gains and losses of truck parking being proposed throughout the statewide interstate system as a result of this implementation plan.

Figure 2. Freight Truck Parking Future Modifications



The Department is committed to serving as good stewards for the state by continuing to invest tax payer dollars to develop and maintain the statewide transportation system that best meets user needs. The Department's decision to close an existing rest area facility is carefully considered and is informed by the Code of Federal Regulation (23 CFR 752). The typical cost to close a parking only site is approximately $400,000 (see Figure 3) and approximately $800,000 to close an aging full-service site. The typical cost to improve an aging full service rest area site is approximately $4-$5 million for the new building and $1.5-$2.5 million for the new parking area.

Figure 3. Cost to Close or Replace

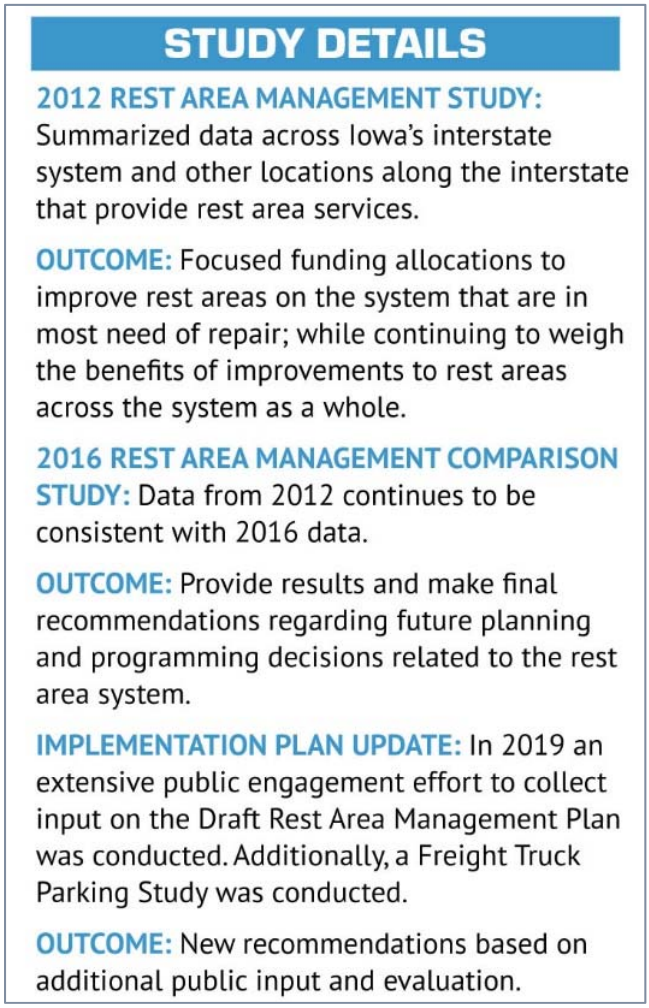


Project Background

Rest Area Evaluation

According to the Federal-Aid Highway Act of 1956, the official purpose of a rest area is to provide safety and convenience. Federal policy suggests 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. Since 2012, the Department has conducted an in-depth analysis of the rest area system throughout the state to assess current conditions of rest area facilities, user needs, freight truck parking, and overall public sentiment towards the Department's plan for future investment of state funds (see Figure 4).

Figure 4. Study Methodology



Study Methodology

Phase 1: The first phase of the Department's rest area evaluation involved collecting and documenting customer needs and satisfaction with the existing rest area system and focus on investments. 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 turned its attention on determining 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, as reported in the Initial Report, there are two Waukee rest areas (Interstate 80 Dallas County - MP 81) which were initially reviewed based on

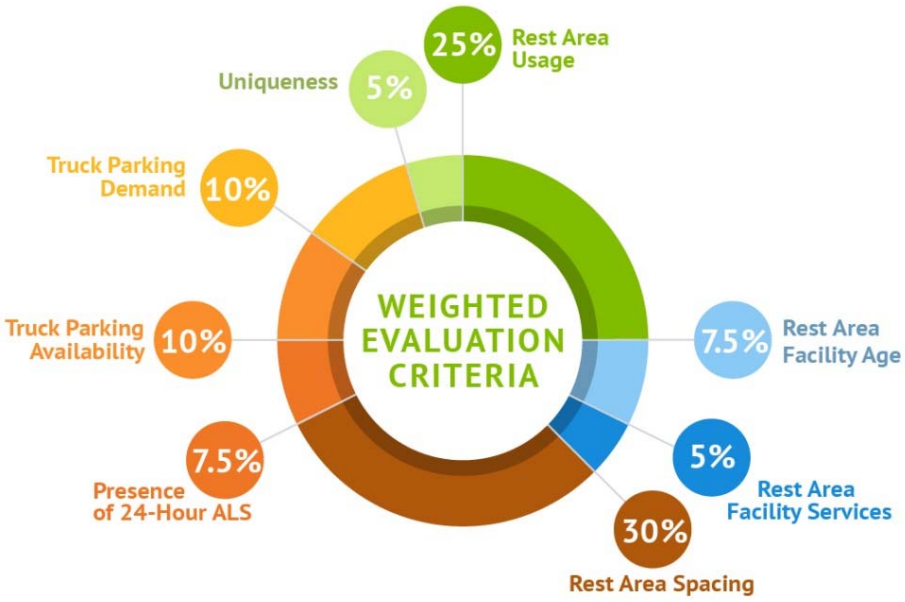
[1] Are we there yet?: Determining the distance between rest stops on the interstate. http://www.slate.com/articles/life/travel_explainer/2015/08/rest_stop_distance_how_is_the_placement_of_rest_areas_on_highways_decided.html. (Retrieved August 16, 2017).

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.

Phase 2: Phase 2 involved collection of additional information and the development of a ranking criterion. The criteria was used to rank the existing full service rest areas based on how critical they are to the system. Each rest area was initially ranked and evaluated based on a variety of criteria (see Figure 5). This was done to indicate which rest areas were considered 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:

- **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.

Figure 5. Rest Area Evaluation Criteria



- **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.

Phase 3: The third phase utilized both the initial report produced in Phase 1 and the rankings from Phase 2, to develop an implementation strategy for the rest area system. An evaluation of all existing, full service rest areas was completed in 2018 to assess which rest areas ranked highest for additional investment. See the Draft Implementation Plan (June 2018, Appendix A), for a complete list of rest area rankings per criterion. The weights used in this evaluation placed 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.

In July of 2016, data collected during the Initial Management Plan was updated and the rest areas were again reviewed across the system. This review showed that data from 2012 continued to be consistent with data collected in 2016. The purpose of the report (issued in 2018) was to provide results of that evaluation and make final recommendations regarding future planning and programming decisions related to the rest area system.[2] Recommendations provided in the Draft Implementation Plan (2018) included closure of 11 out of the, then, 38 full service rest areas and all 16 parking only sites. All 11 recommended closures were of aging rest areas. The Draft Plan also did not have any commitment of resources for additional parking.

Phase 4: As a result of Phase 3 evaluation and the significance of the proposed recommendations, a fourth phase of evaluation was added and included an extended public comment period and a Freight Truck Parking Study. During Phase 4 (2019) of the Rest Area Management Planning process, an extensive public engagement effort to collect public comments on the plan was conducted. Comments were collected through several methods including an online meeting site, project website, and social media. Each comment was evaluated to glean public information from users the Iowa DOT hadn't already considered that could be used to better inform future decisions and to identify concerns that the Iowa DOT was

[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.

not aware off. Comments were received during a longer period of time to better accommodate the broader stakeholder and public interest and travelers throughout the state.

Data Collection & Review

Over the course of the four phases of evaluation, several data sets were collected and assessed, and in some cases reassessed, to inform the Plan development (see Figure 6).

Customer/User Survey – Initially, existing conditions at each rest area in Iowa that are open all year were reviewed. 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.

Figure 6. Rest Area Data Collection/Assessment

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 introduced 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.

Public Comment – During the public involvement and comment collection period in 2019 a significant amount of input was received. The Department collected public input through a dedicated rest area management website, an online ArcGIS Storymap public forum, social media, and public polling. A communications campaign to solicit public input on the Draft Implementation Plan was conducted. The Department developed communication for the public and interested parties to more easily learn about the rest area management planning to date. An executive summary overview and a summary video of the Draft Implementation Plan were promoted for over eight months to encourage public input. Figure 7 outlines the analytics input received.

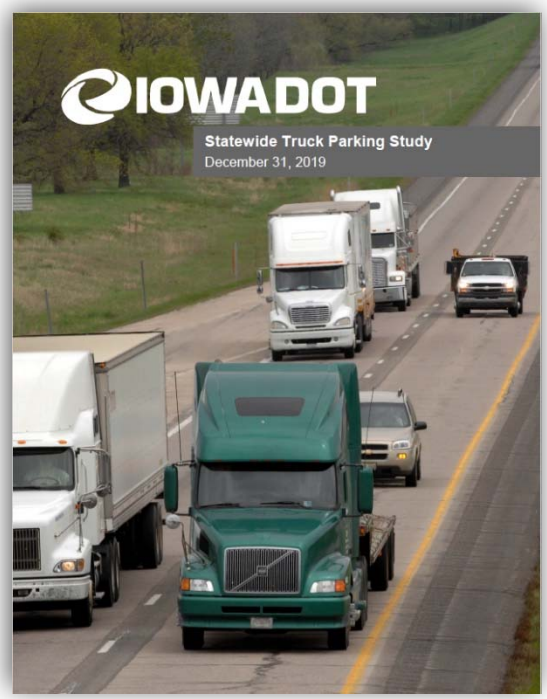
Figure 7. Public Involvement Analytics

ENGAGEMENT TOOLS & ANALYTICS

ArcGIS Storymap	3,424 hits
Comments	742
Website Poll	691 Votes
Web Traffic	7,078 page views 6,073 unique visitors
Social Media	12 posts 80 shares, 83 comments Total Reach: 33,798 avg. 2,817 per post Total Engagement: 2,393 avg. 200 per post
Video	723 views on YouTube

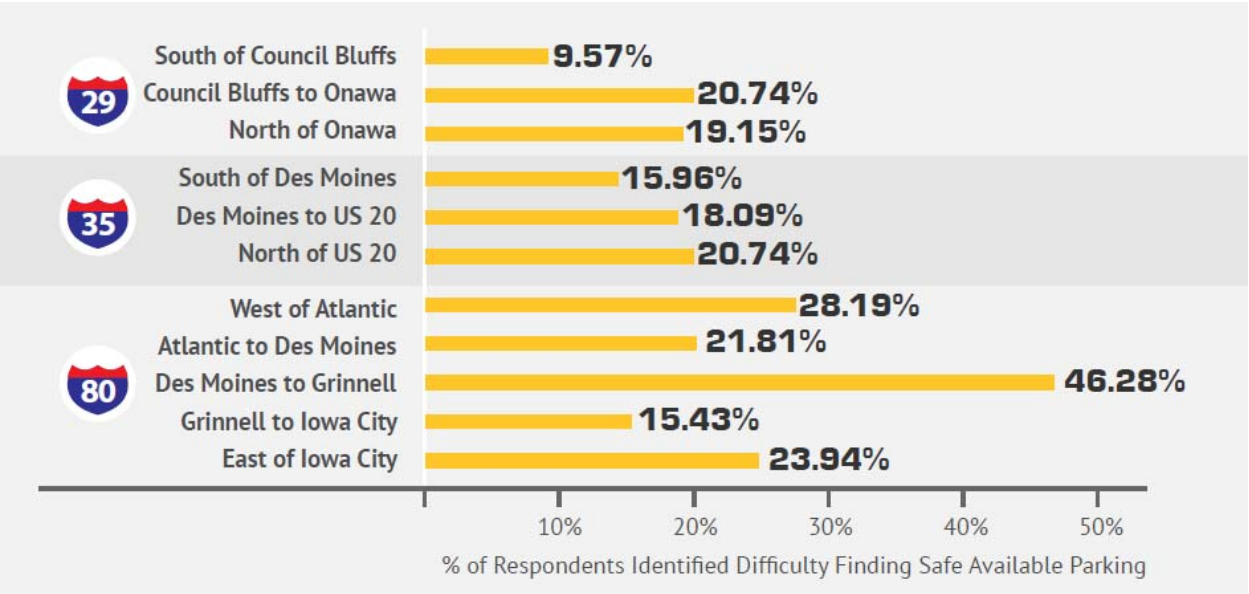
As of November 2019

Freight Truck Parking Study – During Phase 4, the extended comment period also allowed the Department to better evaluate the success of the Truck Parking Information Management System (TPIMS). In 2019, it was concluded that TPIMS strategy had shown some success and that it should be considered and re-evaluated for future implementation.



The Department recognized the need for further evaluation of accommodations throughout the state for freight truck parking. A Freight Truck Parking Study was conducted to assess the current system's parking needs for truck parking. Iowa's central geographic location and abundance of transportation options result in significant movement of freight throughout the state. Recent studies conducted by the Department document truck parking availability as one of the top freight mobility issues in the state, particularly along cross-state interstate routes (I-29, I-35 and I-80). The Statewide Truck Parking Study provided an in-depth analysis of user needs throughout the system. The interstate system was divided into 11 segments that were then ranked based on user need input. Figure 8 illustrates the percentage of users that found it difficult to locate a safe, available parking spot on each of the segments identified in the study.

Figure 8. Interstate Segment Truck Parking Needs – User Identified



The following describes the key issues and needs identified through the Truck Parking Analysis:

- Over half of public and large private truck parking sites along cross-state interstates have more trucks parking at the site than the number of allocated spaces overnight.
- Truck parking utilization is greatest along I-80, where roughly 75% of sites have peak truck parking utilization above 100% of capacity.
- Truck parking availability is expected to be a continued challenge, as truck volumes are forecasted to increase by over 60% for most interstate segments in Iowa by year 2040.
- 47% of user survey respondents say that it takes longer than 30 minutes to find available truck parking in Iowa, and 17% of respondents say that they often or always cannot find parking in Iowa at safe/authorized locations.
- Truck volumes traveling through Des Moines on I-80 are nearly triple the volume traveling through Des Moines on any other interstate route combination.
- Many truck parking facilities are not designed for oversize trucks.
- Rest area closures proposed in the Department's Rest Area Management Plan would results in a loss of 99 truck parking spaces on the State system.

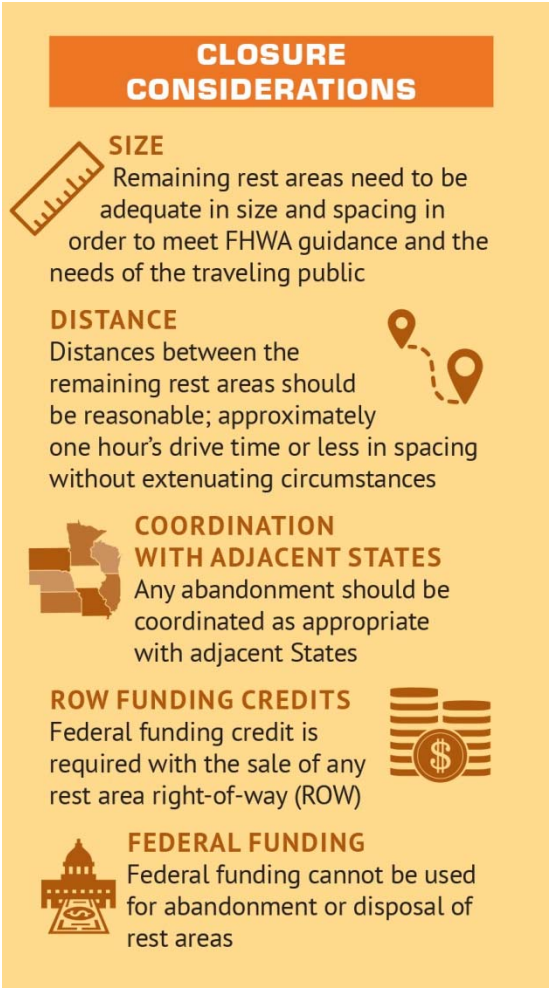
The management of truck parking is a major component of the rest area network and the Dynamic Truck Parking Availability System is being implemented to help better manage freight truck parking needs. Public and stakeholder input, coupled with recommendations from the Truck Parking Study analysis offer the best possible recommendations for implementation of this plan.

Closure Considerations

The Department's decision to close an existing rest area facility needs to be carefully considered. The non-regulatory supplement to Code of Federal Regulation 23 CFR 752 (NRS 752)[3] recommends that five conditions be reviewed and considered when agencies are considering rest area closures (see Figure 9). 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

Figure 9. Criteria Considered for Rest Area Closure



Recommendations

Proposed Closures

The Rest Area Management Plan Implementation Plan 2 proposes closure of only eight full service sites and 10 parking only sites. The new implementation plan also identifies a funding scenario for an additional 247 net truck parking spots throughout the system. With this plan, all 10 parking only rest area site closures and seven of the eight full-service closures will occur before 2028. Southbound Story City has been included in the list of proposed closures, but due to its recent construction, will remain open through 2049 or later and will be re-evaluated for closure at that time. Further evaluation of this rest area location will be considered to determine if longer term investment is warranted. Table 1 illustrates the rest areas the Department is recommending for closure.

[3] https://www.fhwa.dot.gov/real_estate/policy_guidance/0752sup.cfm

Table 1. Rest Area Closure Recommendations

Corridor	Location	Mile Post	Truck Parking Loss
I-29	Missouri Valley NB Rest Area	79	-13
	Missouri Valley SB Rest Area	79	-13
	Mondamin NB Parking Only	92	-5
	Mondamin SB Parking Only	92	-5
	Salix NB Parking Only	132	-8
	Sergeant Bluff NB Rest Area	139	-14
	Sergeant Bluff SB Rest Area	139	-15
I-35	Osceola SB Parking Only	30	-3
	St Charles SB Parking Only	51	-6
	St Charles NB Parking Only	53	-6
	Huxley SB Parking Only[1]	105	-8
	Story City SB Rest Area (Potential Closure)	119	-15
	Story City NB Rest Area	120	-16
	Story County SB Overlook Parking Only	120	0
	Northwood NB Parking Only	211	-5
I-80	Avoca EB Parking Only	44	-8
I-880	Loveland EB Rest Area	16	-10
	Loveland WB Rest Area	18	-15

Source: Iowa DOT Rest Area Management Implementation Plan, 2020

[1] Huxley SB Parking Only site is already removed, consistent with the Iowa DOT Rest Area Management Implementation Plan.

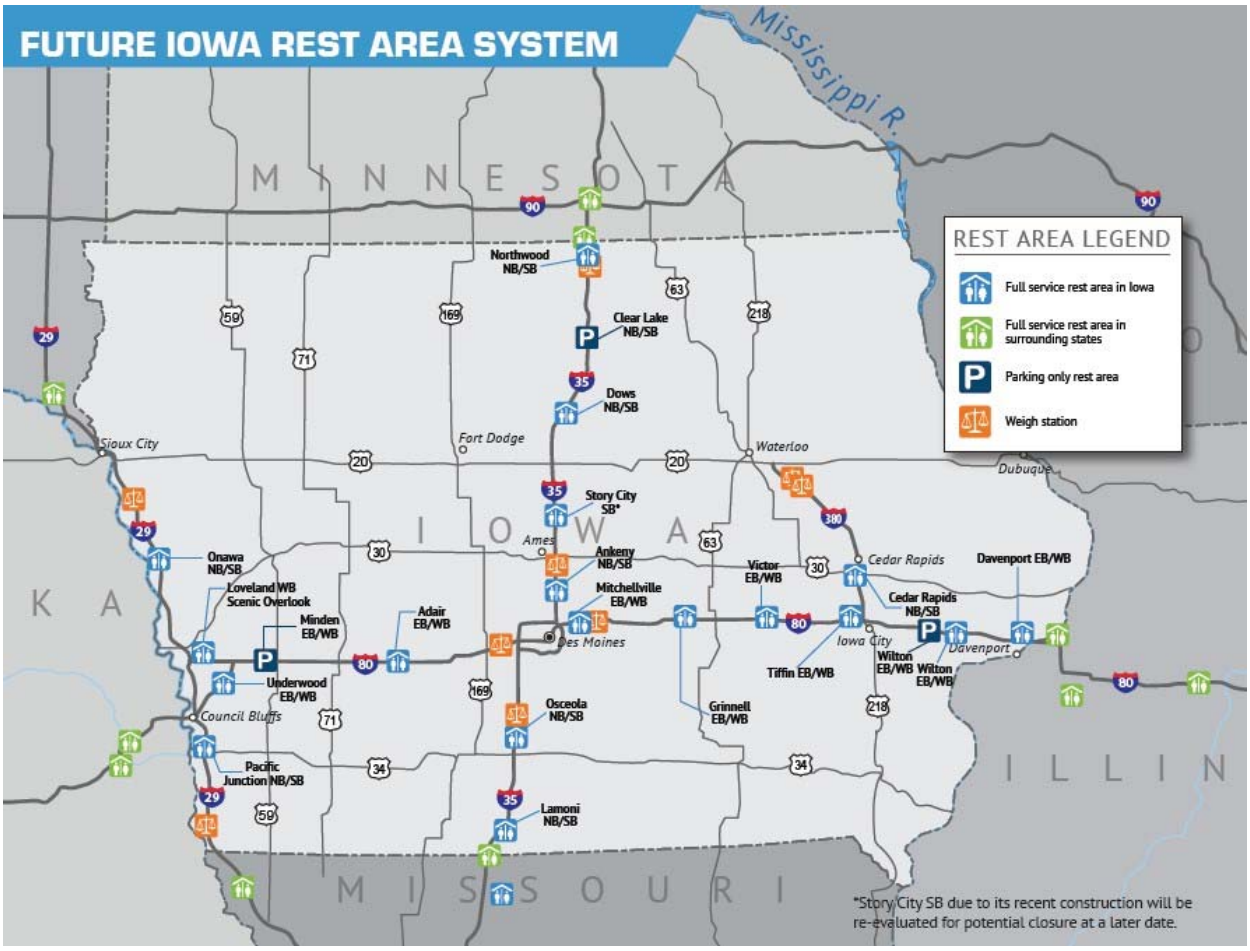
Proposed Rest Area Investment

To accommodate the traveler needs in Iowa, the new Implementation Plan has 30 remaining upgraded full-service sites and 6 upgraded and expanded parking only sites. The plan closes eight full-service sites and 10 parking only sites and identifies a funding scenario for adding 247 truck parking spaces, in addition to the existing 815 spaces currently on the system. See Figure 10 for modifications to existing parking facilities.

Figure 10. Freight Truck Parking Modifications

This leaves twelve (12) rest areas that will require building and parking area reconstruction in the foreseeable future and an additional two (2) newer full service sites where truck parking will also be expanded.

Figure 11. Future Rest Area System – Iowa



Timing

The 12 remaining sites for upgrade are anticipated to be reconstructed between 2022 and 2033. The average 5-Year Program cost is approximately $7.2 million between 2019 and 2033. In 30 years, the total cumulative savings to program and operations (under this implementation plan scenario) for closures is approximately $38.2 million. This will bring the net expenditures across that same timeline for reconstructing the remaining aging sites and augmenting the truck parking at other sites to just under $70 million.

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.

Truck Parking Accommodations

In consideration of rest area closures, as mentioned above, impacts to truck parking are the single largest impact to the traveling public. In consideration of these impacts, the Department is mitigating efforts that will help offset inconveniences that may be experienced by freight travelers. Truck parking accommodations includes:

- Parking cameras and real time parking availability updates
- Augmenting truck parking at adjacent rest areas and weigh stations

Parking cameras & real time updates

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, a Transportation Investment Generating Economic Recovery (TIGER) Grant funded implementation of a Mid America Association of State Transportation Officials (MAASTO) regional Truck Parking Information Management Systems (TPIMS) which collects and broadcasts real-time parking availability to drivers through a variety of media outlets including smart phone applications and traveler information websites. This helps drivers proactively plan their routes and make safer, smarter parking decisions at rest areas as well as private parking areas. TPIMS became operational in January 2019 and provides real time availability along I-80, I-29, I-35, I-235, and I-380.

Augmenting truck parking at adjacent rest areas & weigh stations

Strategies to address truck parking issues and needs in Iowa were developed and refined to include the following recommendations:

- Expand TPIMS solutions with additional sites, educational outreach to drivers and carriers, and integration with other parking apps and Electronic Logging Devices.
- Invest in vehicle-to-infrastructure technology to provide real-time parking information.
- Add a truck parking reservation system, particularly for oversize trucks.
- Use TPIMS historical data and predictive analytics to predict parking availability.
- Expand truck parking at the sites listed in Table 2 to offset parking loss from rest area closures and expand total truck parking by a net of roughly 247 spaces on the State system. See Figure 12 for concept illustration.
- Explore partnerships with public agencies and private companies to supplement truck parking, optimize the locations of truck parking capacity, and maximize DOT investment.
- Update design standards and templates to increase the number of required truck parking and incorporate oversize truck parking.

Table 2. Recommended Expansion at Existing Sites

Corridor	Location	Mile Post	Utilization Segment Rank	Potential Additional Truck Parking Spaces
I-29	Pacific Junction NB Rest Area	38	6	20 [1]
	Pacific Junction SB Rest Area	38	6	20 [1]
	Onawa NB Rest Area	110	10	25 [1]
	Onawa SB Rest Area	110	10	25 [1]
I-35	Osceola NB Rest Area	32	2	19 [1]
	Osceola SB Rest Area	32	2	19 [1]
	Clear Lake NB Parking Only	196	9	20 [1,2]
	Clear Lake SB Parking Only	196	9	20 [1,2]
I-80	Underwood WB Rest Area	19	1	9
	Minden EB Parking Only	32	1	44 [1,2]
	Minden WB Parking Only	32	1	44 [1,2]
	Mitchellville EB Rest Area	148	3	11
	Mitchellville WB Rest Area	148	3	13
	Victor EB Rest Area	208	7	13
	Victor WB Rest Area	208	7	16
	Wilton EB Parking Only	268	4	22 [2]
	Wilton WB Parking Only	268	4	22 [2]
	Davenport EB Rest Area	300	4	21
	Davenport WB Rest Area	300	4	15
I-380	Cedar Rapids SB Rest Area	13	-	14

Source: HDR and Iowa DOT, February 2020.

1 Include parallel parking lane for oversize vehicles.

2 Site converted from parking only for cars and trucks to truck parking only with vault toilets.

Figure 12. Truck Parking Expansion Opportunity – Concept Only

Conclusion

The Department has taken great care to conduct an extensive and thorough analysis of the rest area system in Iowa to determine the most prudent use of future investments. The recommendations offered in this Rest Area Management Implementation Plan are considered to be in the public interest. The Department intends to move forward with the proposed closures and investments on the schedule identified within this Plan.