MINNESOTA IT SERVICES

June 10, 2019

Representative Frank Hornstein
Chair, Transportation Finance Committee
Minnesota House of Representatives
100 Rev. Dr. Martin Luther King Jr. Blvd.
Saint Paul, MN 55155

Senator Scott Newman
Chair, Transportation Committee
Minnesota Senate
95 University Ave W
Saint Paul, MN 55155

Chairs Hornstein and Newman,

Please find attached the sixth MNLARS Steering Committee report, as mandated by Minnesota Laws 2018, Chapter 101. In signing below, we affirm that the statements submitted to the committee in this document are complete and truthful to the best of our knowledge.

Please let us know if you have questions related to this report or would like any additional information.

Sincerely,

Tarek Tomes
Commissioner and State Chief Information Officer
Minnesota IT Services

John Harrington
Commissioner
Minnesota Department of Public Safety

Cc: Senator Scott Dibble
Senator John Jasinski
Representative Paul Torkelson
Representative Dave Baker

658 Cedar Street, St. Paul, MN 55155

MNLARS Quarterly Update

June 2019

Contents

Executive summary

This document serves as the June 10, 2019 update provided by Minnesota IT Services (MNIT) and the Department of Public Safety (DPS) to the members of the MNLARS Steering Committee. Each item in this document responds directly to the performance requirements defined by statute: Minnesota Laws 2018, Chapter 101. This quarterly update also outlines MNLARS benchmarks, describes how those benchmarks have improved since the report submitted in March 2019, and details the work that continues to improve the system and the business processes in release 1.16 for the Department of Public Safety Driver and Vehicle Services division (DVS) and its business partners.

Release 1.15 of MNLARS, which added the ability to transfer specialty plates, continues to perform well in production. Release 1.16 is on track for delivery in late June of 2019. It includes a significant number of Master List stakeholder fixes and retires four workarounds.

Top features in Release 1.16:

- **Ability to search and complete transactions in the unmatched document work queue.** This will allow DVS to effectively manage the documents that are assigned to the unmatched document work queue.
- **Self-service enhancement to DVS website for disclosure of donated and sold vehicles.** This will allow citizens to easily document who they sold or donated their vehicle to.
- **Ability for deputy registrars to search for plates and stickers that were issued from a specific office.** This will allow deputy registrars to research transaction errors that may have occurred when a plate or sticker was issued.

Workarounds that will be retired with Release 1.16:

- **Personalized plates: Seven year replacement.** This functionality will allow the correct fees to be charged when a plate replacement is due.
- **Year of birth.** This will provide a selection option in MNLARS to identify purchasers that are under the age of 18 years old.
- **Ownership by minor.** This will provide a selection option in MNLARS to identify purchasers that are under the age of 18 years old.
- **Donated vehicle.** This will allow citizens to more easily document who they sold or donated their vehicle to.

Pursuant to Laws of Minnesota 2019, Chapter 1, Section 4, the Independent Expert Review team issued its report and recommended replacing MNLARS with a packaged software solution. This approach provides the opportunity to leverage features, functionality and best practices from other states that use the same software. Although this recommendation increases costs in the short-term and creates more change for users with another product launch, the independent expert review team identified that it is the lowest risk solution to meet the long-term needs of stakeholders. The Request for Proposals (RFP) was posted on May 28, 2019. Stakeholders were part of the development of the RFP and will also participate in the evaluation process. As required by this provision, the contract will be awarded by July 1, 2019.

This report is the last one to be filed pursuant to Minnesota Laws 2018, Chapter 101. Pursuant to Minnesota Laws 2019, 1st Special Session, Chapter 3, Section 4, the MNLARS Steering Committee is replaced by the Driver and Vehicle Systems Oversight Committee and future reports will comply with this statute.

Performance measures

Updated data on the performance measures is available for the following areas:

- Performance measures #1 and #2: MNLARS gaps and defects (pg. 9)
- Performance measures #3: Improvements in the ability to edit MNLARS transactions (pg. 11)
- Performance measure #4: Reduction in vehicle title backlog (pg. 12)
- Performance measure #5: Extent of transaction errors (pg. 15)
- Performance measure #6: System performance (pg. 16)
- Performance measure #7: Customer service responsiveness (pg. 26)

Key milestones

The key milestones detailed within this report are measured by the performance requirements outlined in Minnesota Laws 2018, Chapter 101, as follows:

- Subd. 2 (b) (1) - Extent to which MNLARS defects have been resolved
- Subd. 2 (b) (2) - Extent to which gaps have been resolved
- Subd. 2 (b) (3) - Improvements to edit transactions
- Subd. 2 (b) (4) - Reduction in backlog of vehicle titles
- Subd. 2 (b) (5) - Extent of errors in transactions – data fixes
- Subd. 2 (b) (6) - System performance
- Subd. 2 (b) (7) - Customer service responsiveness

Governance

Driver and Vehicle Executive Steering Committee (* = voting member)		
Tony Anderson MNLARS Program Director, DVS	**Amber Backhus*** MN Auto Dealers Association	**Andrea Fasbender*** Driver Services Program Director, DVS
Joe Heider* Deputy Registrar, Hennepin County (Member MDRA)	**Tom Henderson*** Vehicle Services Program Director, DVS	**Scott Lambert*** MN Auto Dealers Association
Laura Laudenbach* Deputy Registrar, Stearns County (Member MDRA)	**Al Lentsch*** Northland Independent Auto Dealer Association	**Tim Lynaugh** Assistant Commissioner, DPS
Beckey Mechtel MNLARS Communication	**Vic Moore*** Minnesota Auto Auctions	**Cassandra O'Hern** Deputy Commissioner, DPS
Dawn Olson Director, DVS	**Joan Redwing** Chief Business Technology Officer, MNIT	**Jeff Schmitz*** Deputy Director, DVS
Jeff Schwiesow* Product Manager, BCA	**Colton Seisler*** Deputy Registrar, Inver Grove Heights (Member MDRA)	**Gaye Smith*** Deputy Registrar, South St. Paul (Member DRBOA)
Dan Stluka* Operations Support Manager, DVS	**Donny Vosen*** Deputy Registrar, Brainerd (Member DRBOA)	**Meagan Weber*** Deputy Registrar, Golden Valley (Member MDRA)

MNLARS Project Management Team

Tony Anderson	**Tami Bartholomew**	**Rayah Barton**
MNLARS Program Director, DVS	Administrative Supervisor, DVS	Management Analyst, MNIT
Thomas DeVita	**Ash Durham**	**Jim Forsell**
MNLARS Project, DPS	Project Architect	Deputy Liaison Supervisor, DPS
Tom Henderson	**Dawn Olson**	**Joan Redwing**
Vehicle Services Program Director, DVS	Director, DVS	Chief Business Technology Officer, MNIT
Jeff Schmitz	**Mike Wright**	
Deputy Director, DVS	Senior Manager of Operations, MNIT	

MNLARS Senior Leadership Team

Jon Eichten	**Justin Kaufman**	**Bruce Gordon**
Deputy Commissioner, MNIT	Assistant Commissioner, MNIT	Communications Director, DPS
Katie Knutson	**Tim Lynaugh**	**Cassandra O'Hern**
Legislative Affairs Director, DPS	Assistant Commissioner, DPS	Deputy Commissioner, DPS
Dawn Olson	**Joan Redwing**	**Emily Shimkus**
Director, DVS	Chief Business Technology Officer, MNIT	Communications Director, MNIT

MNLARS Executive Leadership Team

John Harrington	**Tarek Tomes**	**Jon Eichten**
Commissioner, DPS	Commissioner, MNIT	Deputy Commissioner, MNIT
Cassandra O'Hern		
Deputy Commissioner, DPS		

Quarterly project status summary

MNIT and DPS successfully deployed Release 1.15 to address items from the MNLARS stakeholder Master List. MNIT continues project management efforts to release software based on stakeholder priorities through release 1.16.

Release Schedule		Target Deployment	Current Status
1.13	Duplicate Title Printing	Successfully deployed	▲ (green)
1.14	Majority of Top 5 Tiers of Master List Priorities – Apply for Corrected Title	Successfully deployed	▲ (green)
1.15	Majority of Top 5 Tiers of Master List Priorities – Specialty Plate Transfer	Successfully deployed February 10, 2019	▲ (green)
1.16	22 Items from stakeholder Master List and Retire 4 Workarounds	Target release June of 2019	▲ (green-yellow)

Key:	■ (green) **Green:** Project performing to plan	■ (yellow) **Yellow:** Project viability is at risk	■ (red) **Red:** Project requires corrective action

Status of recent and upcoming releases: Release 1.15 was successfully launched on February 10, 2019. Release 1.15 addressed several top-ranked features and fixes that the Executive Steering Committee requested for inclusion: specialty plate transfer, change of class, and change of class conversion, among other items. Release 1.16 is scheduled for delivery in late June of 2019.

Continued MNLARS progress: After release 1.16, there remain 75 items on the stakeholder Master List – 29 gaps, 28 defects, and 18 new feature requests that are not fully covered in a MNLARS Vehicle release plan. In addition, there remain several legacy systems that have not been migrated to the modern MNLARS Vehicle system, as well as stabilization/optimization features that would allow the system to be maintained most efficiently. Other than system maintenance and support activities, no further progress on the stakeholder Master List is planned after release 1.16 until the new system is launched. Minnesota Laws 2019, 1st Special Session, Chapter 3, Section 35, subd. 4 includes a freeze to MNLARS, stating: "Update 1.16 scheduled to be released in June 2019 is the final update to MNLARS, except that the fee and surcharge changes required by this act must be implemented by August 1, 2019."

MNLARS Vehicle development and implementation timeline

The primary focus of the MNLARS Vehicle project to date has been to remediate high priority defects and gaps while delivering new features that deputy registrars, auto dealers, and other system stakeholders need. Guided by stakeholder prioritization in the Master List development process, the project milestones below reflect a focus on delivering priority fixes for defects and gaps, which MNIT and DPS anticipate completing with Release 1.16, as well as ongoing maintenance until the new vehicle titling and registration system goes live and remaining legacy systems are decommissioned.

Milestones

Delivery deadlines

Deadline	Milestones	Status
Release 1.16	Deliver 22 items from the stakeholder Master List, retire 4 workarounds, and implement new legislative fees	In progress
July 2019	Award contract for Vehicle Title Registration System (VTRS)	In progress
Ongoing until decommission	Provide system operations, systems maintenance, system support, and decommissioning of MNLARS	In progress

High level legacy system decommission deadlines

Deadline	Milestones
New system TBD	Finance: accounting controls, reporting – NSF bad checks
New system TBD	Prorate / IRP / IFTA (commercial trucks) title and registration functions
New system TBD	Dealer management, dealership licensure
New system TBD	HP permits legacy systems support – commercial permitting, temporary 60 days
New system TBD	Document imaging: Stellant
New system TBD	Retire driver and vehicle history in SUPRA database

MNLARS Vehicle performance measures

Performance measures #1 and #2: extent to which MNLARS Vehicle gaps and defects have been resolved

Release 1.15 launched successfully, adding the ability for the system to transfer specialty plates. The release also added other new features and addressed gap items. As of June 1, 2019: 75 defects, gaps, and new feature requests remain, and they have been ranked and prioritized by the Executive Steering Committee for inclusion in future releases. The 75 items remaining on the stakeholder priority Master List are comprised of 29 gaps, 28 defects, and 18 new feature requests. This is down from 110 items in the March report. An additional 13 Master List items were eliminated due to consolidation and coverage in other maintenance items.

Definitions:

- A **gap** refers to functionality that is required by stakeholders but has not yet been developed.
- A **defect** refers to existing functionality that is not working or is incorrectly implemented.
- The **scale** of an individual gap or defect can range from small, simple fixes (such as creating a new fee type) to very large, complex enhancements that include significant system redesign (such as modifying editing functionality across the full MNLARS Vehicle System).
- **Electronic Vehicle Title Registration (EVTR)** allows customers to get plates and registration from a dealer in order to speed up the registration and plate process.
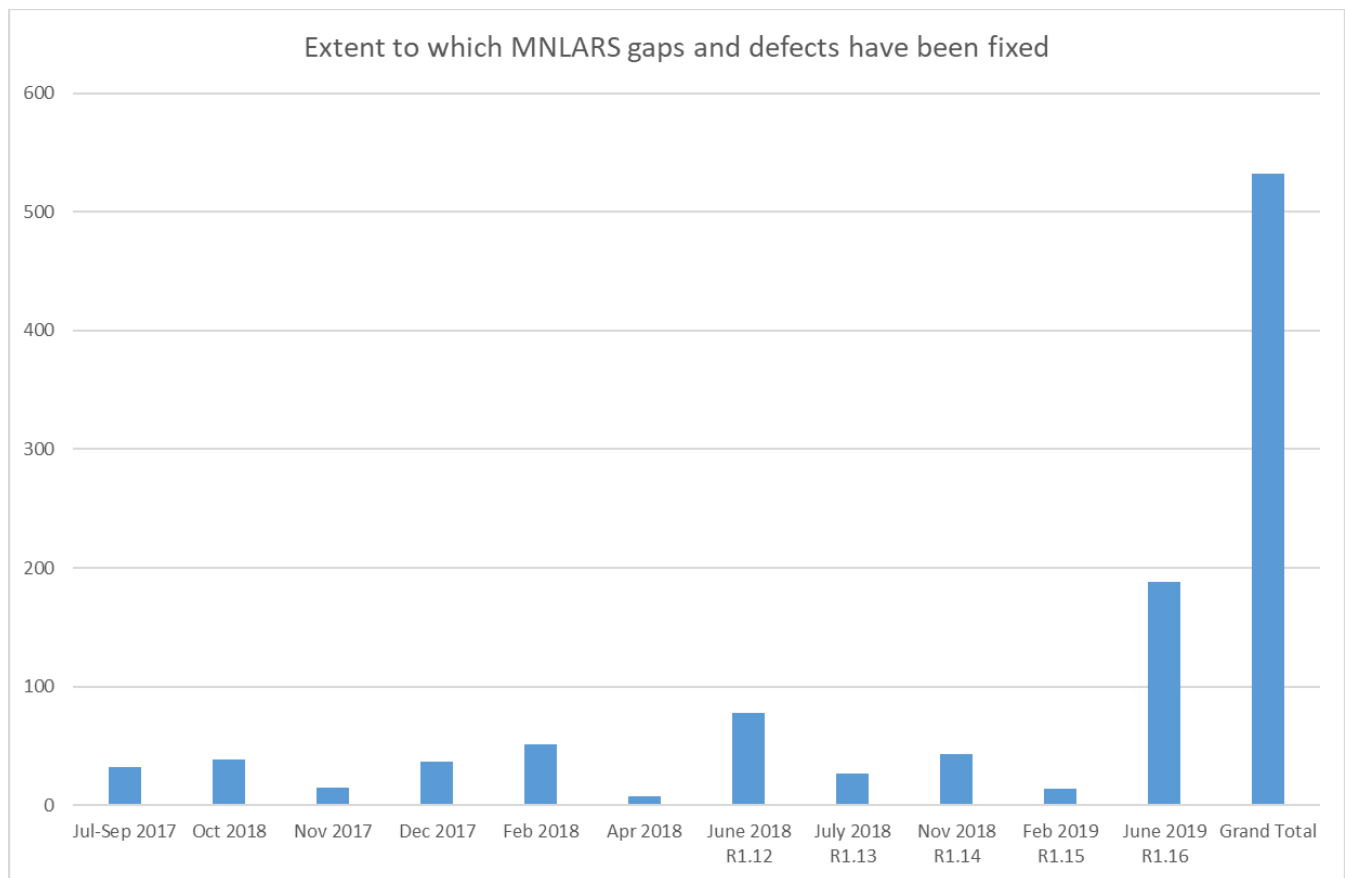
Figure 1 - Extent to which vehicle services gaps and defects have been fixed

It is important to note that the preceding graph (figure 1) does not represent the scale or size of each work item delivered but instead, represents the progress made in resolving the centralized, itemized list of gaps, new feature requests, and defects. Some of these itemized issues are extremely large in scope and impact every workflow in the application – like specialty plates, which was included in Release 1.15.

Remaining gaps and defects

Since December 2017, there have been seven successful releases of the MNLARS Vehicle system. The releases delivered new features, fixed defects, and addressed gaps. These improvements were made in direct response to stakeholder feedback and requests, which were captured and prioritized in a list called the "MNLARS Vehicle Master List." The list tracked gaps, new feature requests and defects. As of today, there are 75 items remaining on the list. Of these, 29 are gaps, 28 are defects, and 18 are new feature requests. Some of the items remaining on the list are quite large in scope (like the addition of editing functionality throughout the application) and others are small (like a request to change the color of the expiration year box – "It's grey and should be bigger").

The MNLARS Vehicle Master List was a living document and required updating to ensure it aligned with current stakeholder priorities. Releases 1.14, 1.15 and 1.16 deliver the majority of the top 5 tiers of defect and gap remediation requests present in the Master List, prior to the application shifting into a maintenance phase that will precede the replacement of the system.

Performance measure #3 - improvements in the ability of MNLARS Vehicle users to edit transactions

Update since March report: As of early May 31, 2019, 25,366 transactions have been updated for users by DVS using the administrative editing tools. The breakdown is as follows:

Updated records count	Type of change
5,234	Change the class, base value, county, and gross weight on a registration.
6,702	Change the start and end date on the registration.
939	Change registered plate type on the registration.
842	Change the plate on a registration to a new plate.
493	Change the status of the sticker to "available."
7,748	Change the status of the plate to "available."
2,113	Delete a range of plates from a particular inventory location.
1,295	Delete a range of stickers from a particular inventory location.
25,366	**Total number of records corrected by DVS**

Included in Release 1.15 was a feature allowing deputy registrars to submit a data entry ticket in MNLARS Vehicle and track its status. This ability to submit known issues quickly and with system-tracked follow-up is a step in the right direction in the much larger effort it takes to build in formal transaction editing features. This feature adds value for the deputy registrars to more easily inform DVS of any title errors. Since the deployment of this feature, there have been 3,271 data entry tickets submitted.

Performance measure #4 – reduction in the backlog of vehicle title applications

Update since March 2019 report: The work queue numbers for vehicle title applications have risen since the March 2019 update as result of an expected seasonal increase that the department typically sees beginning in the spring and lasting through fall. This size necessitates the reassignment of Vehicle Services staff to reduce the backlog of driver license applications.

On March 5, 2019, Governor Walz signed SF 1092, providing the department with $2 million in funding to hire temporary staff to meet customer service needs. As part of this funding, DVS hired a total of 72 temporary employees. Of those, 43 temporary employees began training to review and approve title applications on April 1, 2019. The temporary employees have been trained to review the manufacturer certificate of origin (MCO) title applications, while DVS staff will focus on Minnesota and out of state title applications.

The number of transactions in the work queues represent all title applications that DVS has to work on.

Date	Title applications in work queue
12/1/2017	379,591
1/2/2018	311,312
2/1/2018	222,903
3/1/2018	179,253
4/1/2018	194,949
5/1/2018	204,104
6/1/2018	219,079
7/1/2018	196,247
8/1/2018	141,150
9/1/2018	96,154
10/1/2018	109,291
11/1/2018	125,420
12/1/2018	150,231
1/1/2019	160,849
2/1/2019	134,103
3/1/2019	108,097
4/1/2019	130,425
5/1/2019	150,067
6/1/2019	156,280

DVS measures title turnaround times in three classes: out-of-state (OS) applications, manufacturer certificate of origin (MCO) applications and Minnesota (MN) titles. DVS reports turnaround time by the number of days required to complete an application, beginning when the customer visits the deputy registrar. Weekends and holidays are always included, and a description of the process can be found in the Office of Legislative Auditor report entitled *MNLARS Quarterly Report Verification – Title Backlogs and System Funding* (see page 10 and 11).

Figure 2 shows the title turnaround times for each type of title since February 2018, while figure 3 shows the historical title turnaround times by average since May 2009.

Both figures demonstrate continued improvement in title application turnaround times, as noted in the April 3, 2019 Office of Legislative Auditor report, which described title turnaround time reporting as "reasonably accurate" (see page 14).

The same report recommended that unprocessed title applications, those delayed due to a deficiency, also be reported. A title deficiency is something that prevents DVS from issuing the title because the application does not comply with Minnesota motor vehicle law. Examples of deficiencies include a missing odometer reading, a missing lien release, or the old title not having been surrendered. In all cases, DVS is waiting for the customer to provide the required documents (i.e. the old title or the lien release) before the deficiency can be resolved and the title issued. From March 1, 2019 to May 30, 2019 DVS has received 419,526 title applications with 19,958 total deficiencies; 4.8% of title applications received had one or more deficiencies to be resolved before the title could be issued.

When a deficiency is identified, a letter is sent to the customer describing what is wrong and what must be done for the title to be issued. Once the customer has addressed the deficiency, the title application is returned to the work queues for review with the original application.
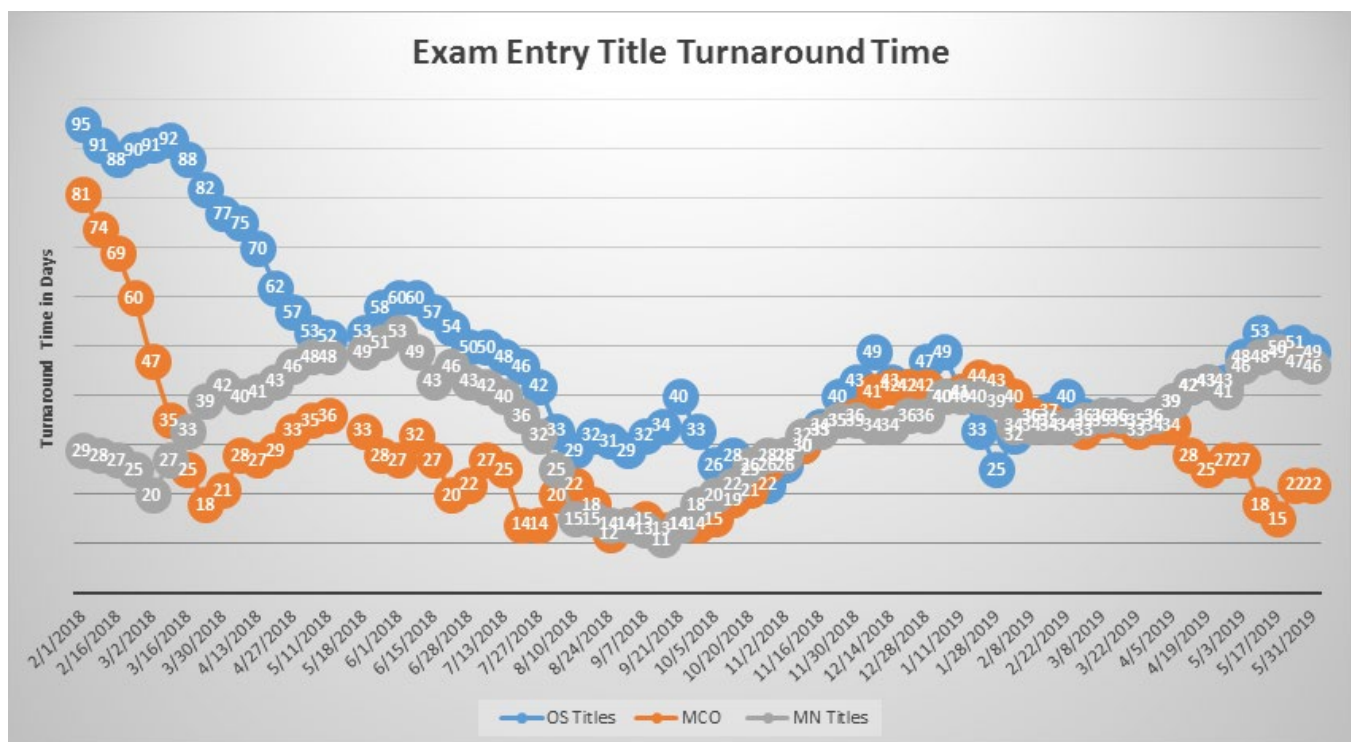

Figure 2 - Exam entry title turnaround time. Note: MCO = 22 days, MN titles = 46 days, Out of State Titles = 49 days.
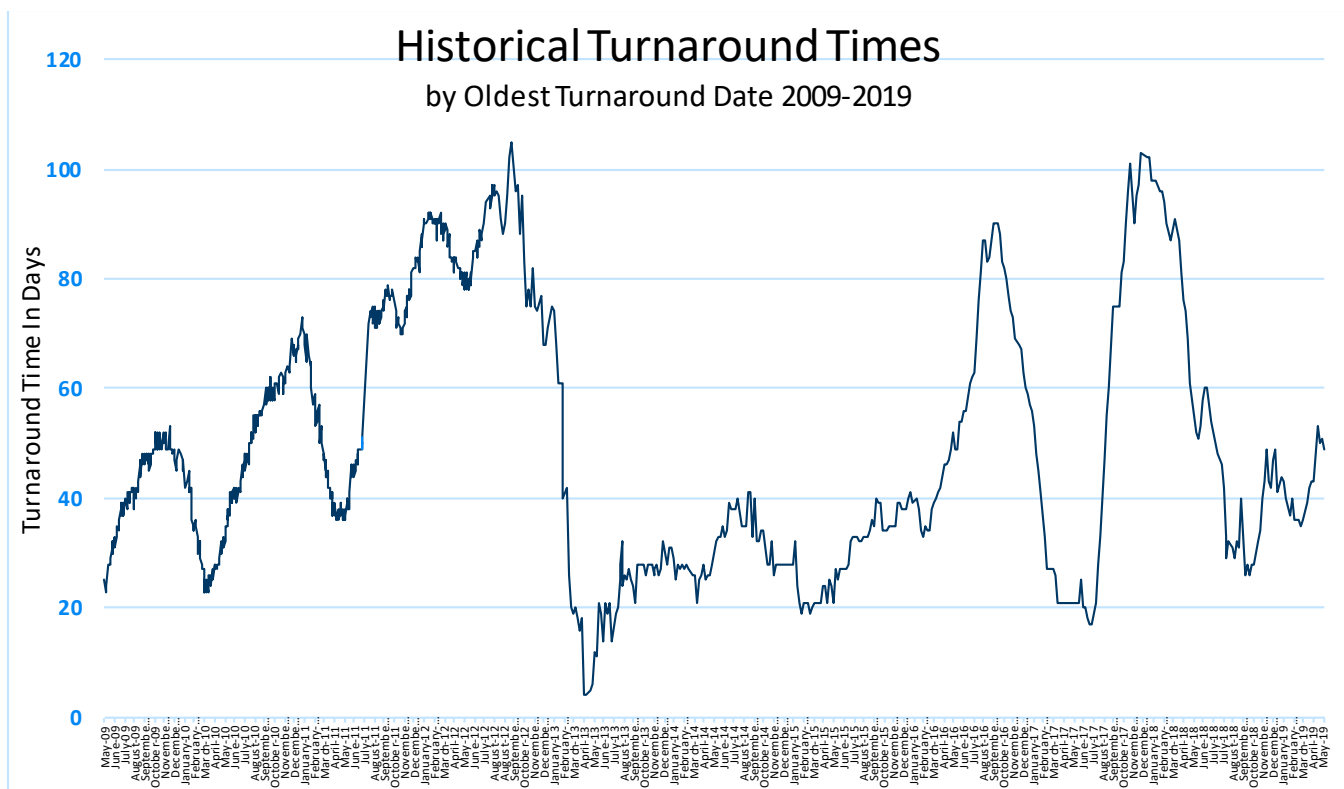
Figure 3 - Historical title turnaround times since May 2009

Performance measure #5 - extent of errors in Driver or Vehicle services transactions

There are two main sources of data errors in the system: data entry errors, and transactions hung up due to an error in the system. The current MNLARS Vehicle system has limited record editing capability due to the complexities of business rules around changing registrations and titles.

Release 1.15 introduced a "data entry ticket" system as part of MNLARS that enables deputy registrars to handle data entry errors and other conditions that are not readily solved via the normal customer service transaction flows. Issues are reported to DVS for resolution at DVS. This new feature supports deputy registrars in resolving edge-case title or registration problems and customer requests, while enabling DVS in its responsibilities to ensure information quality, accurate records, and compliance with policy. For data entry errors, the data entry ticket system is a significant improvement over the previous method of reporting and tracking fix-it requests, and it provides deputy registrars and DVS with visibility of the status of data entry tickets.

The data entry ticket system also satisfies the stakeholder request to edit transactions when it is easier to document an issue, after a deputy registrar has completed the customer transaction within MNLARS, without placing additional burden on the deputy registrar staff. The system enables DVS staff to resolve the reported issue, and it alerts DVS staff quickly, so they can manage potential down-stream effects of the errant data. For example, they can stop an incorrectly-entered VIN from being reported to a national information system such as the National Motor Vehicle Title Information System, or NMVTIS. Since the release of 1.15 there have been 3,271 data entry tickets submitted.

In addition, the MNIT data team can fix motor vehicle transaction errors as they are reported to, or identified by, the data corrections team on the back end. Data corrections are applied to the system by the data team each Tuesday and Thursday after business hours. This includes data issues reported by deputy registrars, DPS, and the public. MNIT also runs a series of programs to search through the data, to discover and correct discrepancies.

A report from the Office of the Legislative Auditor has confirmed that the MNLARS vehicle system calculated fees correctly on over 99% of the transactions.

The new Driver Services system (FAST Driver Services) allows authorized users to correct driver records; in many cases this is available to all users, including driver services liaisons and driver license agents.

Performance measure #6 - system performance including slowdowns, outages or other performance issues

Load testing validates system performance prior to each MNLARS Vehicle release. In the fall of 2017, MNIT enhanced this performance testing discipline to include more tests, greater coverage, and a full copy of the MNLARS Vehicle production environment. Previously, performance testing occurred infrequently, and it did not occur with each release that was put into the MNLARS Vehicle system.

Definitions:

- **Uptime** means the time the system is up and available during business hours.
- A **slowdown** is any system response that returns in less than one second.
- An **outage** is a period of time that a system fails to provide or perform its primary function.
- **Legacy driver** is a legacy system that supports driver services, which was replaced by the FAST Driver system in October of 2018.
- **Mainframe** is a legacy system that supports vehicle services.

Uptime, slowdowns and outages

In addition to load testing, the MNIT operations team tracks uptime for the systems that stakeholders use. Industry standard for a slowdown is to alert technical teams on any transaction that returns in over four seconds, but due to the importance of system performance for MNLARS Vehicle, MNIT and DPS set the bar higher for monitoring and reporting alerts for any potential performance issues. For the purposes of the following graphs, potential performance slowdowns and known performance slowdowns and outages, have been summarized as outages. However, it is important to acknowledge that downtime and slowdowns both have adverse effects on how deputy registrars, auto dealers and other stakeholders conduct business.

System response time test results

Update since March Report: Performance remains stable, and tests between Release 1.14 and 1.15 indicate that the system performs as well as or slightly better than prior MNLARS Vehicle releases. We continue to evaluate system performance with each release to ensure performance does not degrade with subsequent releases.

The following table demonstrates the improved response time since launch and for the last two releases. When the system launched, response time varied by transactions. At launch in July of 2017, the "apply for title" transaction took twenty-five seconds to load, and today the same transaction takes seven seconds. Less complicated transactions, like "sign-in," previously took three seconds to load, and today it takes less than one second.

Definitions:

Sign-In: Measures the time it takes the user's credentials to be authenticated against MNEIAM (registration tracking tool) and successfully log into the system.

Title Queue: This is the backlog of titles that are currently being processed. These transactions represent navigating to and around the queue.

Deputy registrar search: These transactions are the various search transaction/options that deputy registrars use throughout the workday.

Apply for title: "Apply for title" represents one of the most commonly used business transactions in MNLARS.

Registration renewal: "Registration renewal" represents the core transaction of MNLARS. Like "apply for title," it exercises a large part of the system's internal functionality (i.e. vehicle, inventory, finance, third party calls, and online registration.)

Title transfer: "Title transfer" allows users to transfer a title to another party.

Release	MNLARS launch	11.12	1.13	1.14	1.15	1.15.1	Trend
Test Information	90 percent - 7/19 baseline	90 percent - 5/21 baseline	90 percent - 7/10 baseline	90 percent - 11/5 baseline	90 percent - 1/29 baseline	90 percent - 2/15 baseline	
Transaction Name **HTTP Load Scripts**	90%						
Sign-In	3.239	.82	0.755	0.89	.718	.771	
Title Queue	New functionality added	4.6	6.74	5.872	5.405	4.656	
Deputy registrar search	2.61	.609	0.755	0.727	.652	.681	
Apply for title	25.676	6.87	7.5	7.329	6.131	7.158	
Registration renewal	12.52	5.96	6.5	6.175	5.758	5.819	
Title transfer	15.098	5.97	6.88	6.12	4.923	4.574	

Load testing has been successfully utilized prior to each MNLARS Vehicle release for 2017, 2018 and 2019. This performance testing discipline is the most effective way to ensure the following objectives:

1. Identify software or system bottlenecks prior to production release.
2. Determine application configuration issues and provide tuning guidance.
3. Validate that system capacity is sufficient.
4. Ensure system resources scale linearly as workload increases.
5. Find memory leaks and other types of performance constraints that would impact system performance.
6. Mitigate three core risks: speed, scalability and stability.

    a. **Speed:** How fast does the system process the request?
    b. **Scalability:** How well do system resources scale under load and increased concurrency levels?
    c. **Stability:** Measures system uptime under prolonged use and extreme load conditions.

Actual performance results experienced in the field are greatly depend on the consumer's network quality, i.e. bandwidth, packet loss, network congestion, and latency with latency having the greatest impact on end user performance.

Vehicle systems uptime: February - May 2019

Update since last report: The FAST Driver Services system has been added to the report and the MNLARS Driver, Vehicle and legacy systems have stabilized at close to or slightly above 98% uptime. Service Level Agreement (SLA) targets remain at 95% uptime.

Figures 4, 5 and 6 show uptime and slowdowns, measured in hours, for this report. The systems averaged close to or slightly over 99% uptime over this three-month period with all impact to services being caused by third-party incidents or problems. These graphs also show the downtime for each of the vehicle systems, including legacy driver and the mainframe, but system slowdowns cannot be tracked on these older legacy systems.

February 2019 uptime:

- MNLARS Vehicle – greater than 99% uptime
- DVS Permits – 100% uptime
- ESupport – 100% uptime
- Mainframe – 100% uptime
- Driver's System (FAST) – 100% uptime

Figure 4 - Vehicle systems uptime: February 2019

*All system downtime is attributed to third-party vendor outages. See following table for specific issues.

Third-party issues in February 2019

Date	Hrs. of impact	Category	Impact description
2/8/2019	2.98	MNLARS	50% failure rate when making PRISM calls. Issue was found by Dynatrace before business noticed this. Issue was at the DOTgov.gov DNS at the federal level. Critical ticket was opened.
2/13/2019	1.25	MNLARS	This impacted MV2 functionality, so it was very limited in terms of impact – AWS Sophos gateway congestion.

March 2019 uptime:

- MNLARS Vehicle – greater than 99% uptime
- DVS Permits – 100% uptime
- ESupport – 100% uptime
- Mainframe – greater than 99% uptime
- Driver's System (FAST) – greater than 99% uptime

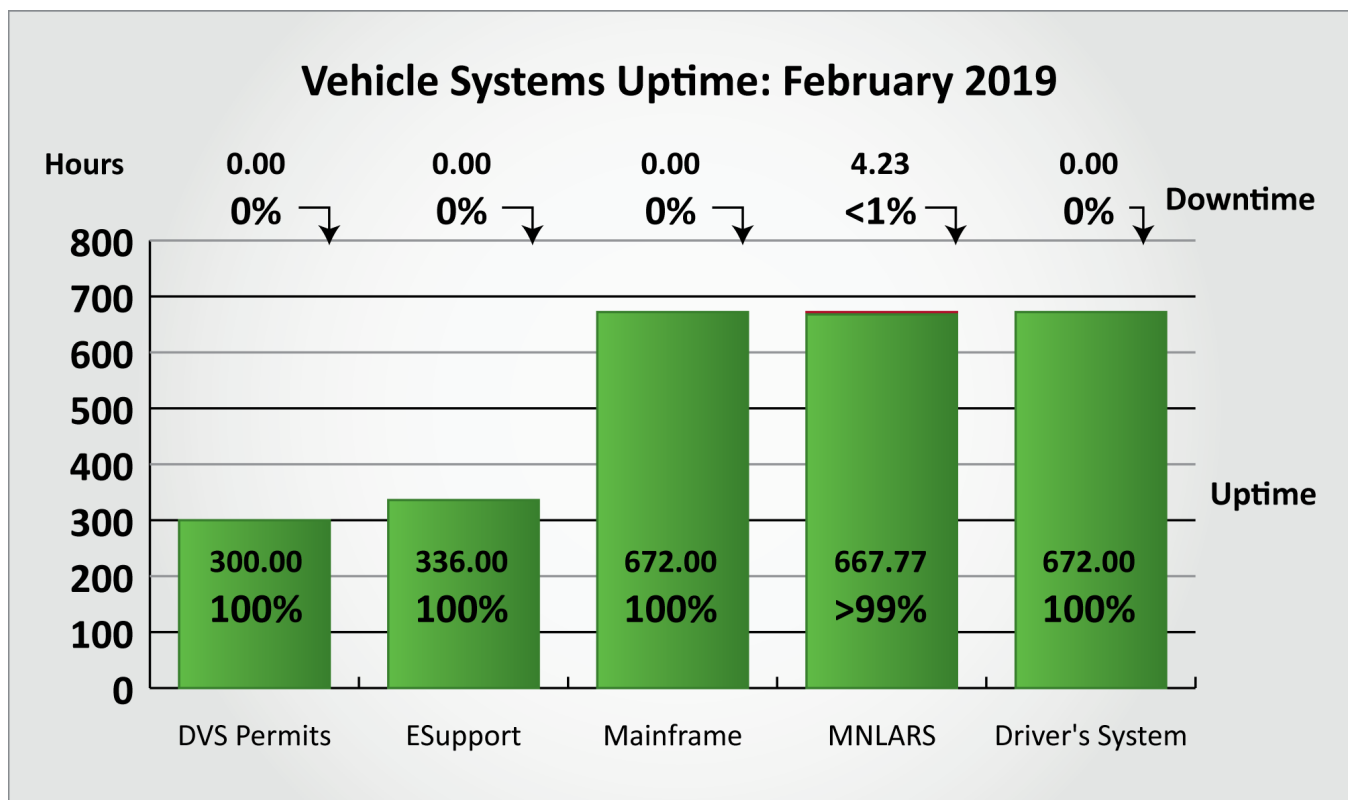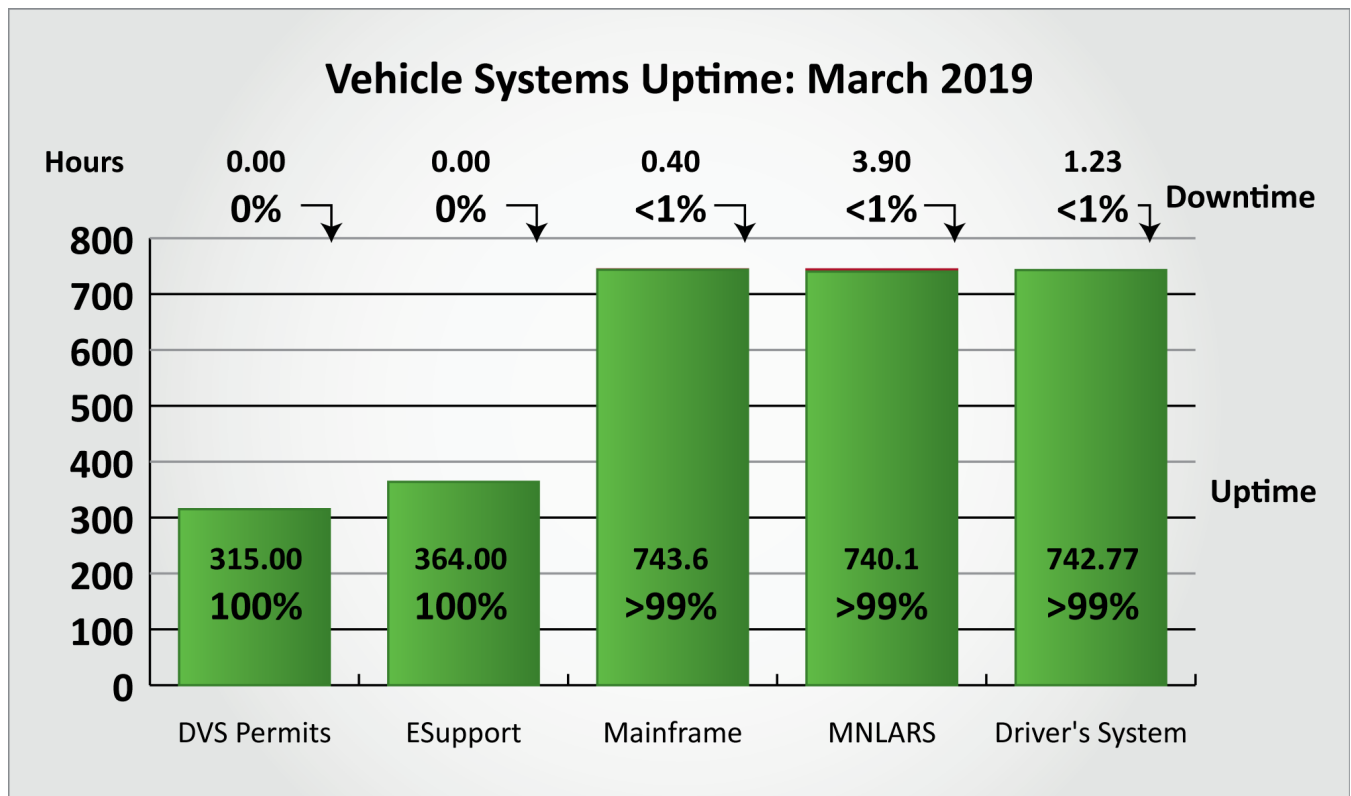*Figure 5 - Vehicle systems uptime: March 2019*

*All system downtime is attributed to third-party vendor outages. See following table for specific issues.

Third-party issues in March 2019

Date	Hrs. of impact	Category	Impact description
3/4/2019	2.72	AAMVA	AAMVA Operations worked to resolve and mitigate the impact of a nationwide system disruption (all states affected).
3/11/2019	1.18	AAMVA	The NMVTIS "theft file" was experiencing intermittent issues.
3/12/2019	N/A	DHS	Intermittent issues with DHS US passport verification.
3/14/2019	N/A	US Bank	U.S. Bank E-Payment Service – Sporadic connectivity issues: Customer payment website was experiencing random failures.
3/18/2019	N/A	AAMVA	AAMVA Operations was working to resolve and mitigate the impact of another nationwide system disruption (all states affected).
3/20/2019	0.4	Mainframe	Bluezone client application issue that had to be addressed by the Bluezone vendor.
3/25/2019	1.23	IDEMIA	IDEMIA VPN Down which affected all camera stations.
3/26/2019	N/A	AAMVA	Experienced intermittent issues with connectivity to AAMVA for verification.

April 2019 uptime:

- MNLARS Vehicle – greater than 99% uptime
- DVS Permits – 100% uptime
- ESupport – 100% uptime
- Mainframe – 100% uptime
- Driver's System (FAST) – greater than 97% uptime
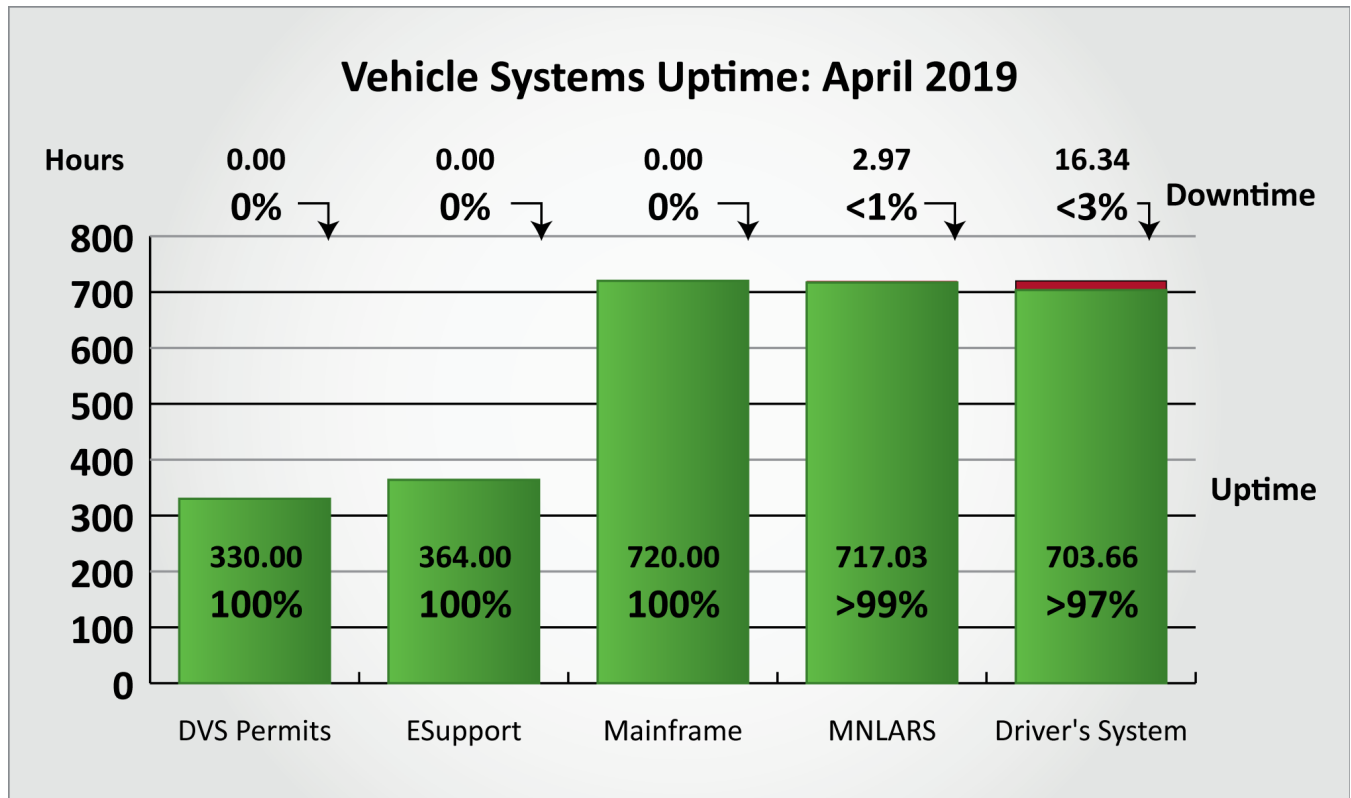
Figure 6 - Vehicle systems uptime: April 2019

*All system downtime is attributed to third-party vendor outages. See following table for specific issues.

Third-party issues in April 2019

Date	Hrs. of impact	Category	Impact description
4/2/2019	0.33	IDEMIA	IDEMIA VPN down.
4/3/2019	0.87	POLK	MNLARS System slowdown due to POLK issues. This was due to a firewall change on the POLK side.
4/11/2019	2	POLK	The VIN Lookup vendor is experiencing an outage which is impacting MNLARS services. POLK (VINtelligence) Nationwide outage.
4/12/2019	0.1	IDEMIA	IDEMIA VPN down.
4/15/2019	15.78	IDEMIA	IDEMIA VPN down due to fiber cable being severed in another state. This was a nationwide outage on the ISP end.
4/17/2019	N/A	IDEMIA	Some cameras (and phones) down in St. Peter. VPN from Idemia also went down for a few seconds. Impact was very brief and was indicative of ISP dropping.
4/18/2019	0.13	IDEMIA	VPN from Idemia went down for 2 minutes.

May 2019 uptime:

- MNLARS Vehicle – greater than 99% uptime
- DVS Permits – 100% uptime
- ESupport – 100% uptime
- Mainframe – 100% uptime
- Driver's System (FAST) – greater than 99% uptime

Figure 7 - Vehicle systems uptime: May 2019
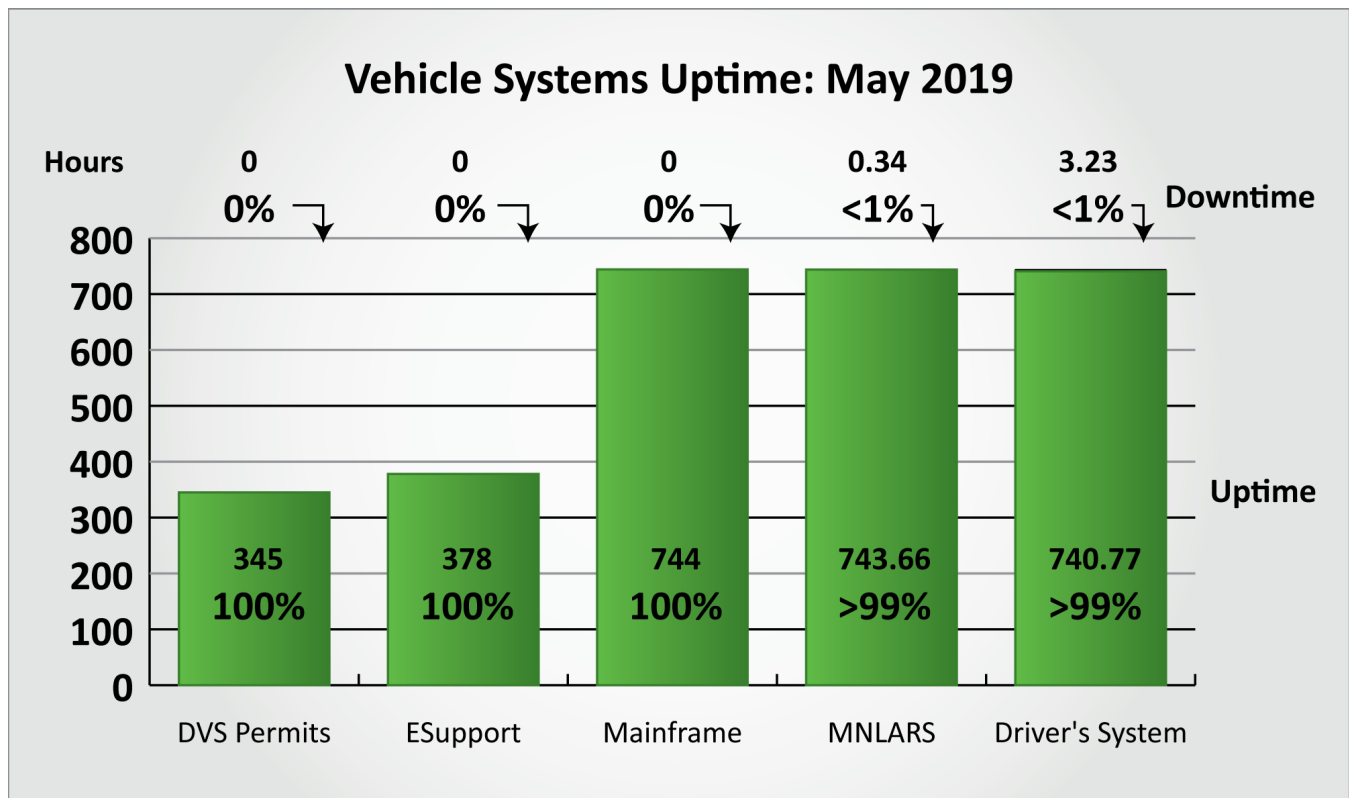
Service level agreement updates

One area of improvement for MNLARS and Driver Services has been the MNIT-wide effort to more clearly define service level agreements on behalf of new systems and our partners' usage of those systems. The following table illustrates the applications, support hours, and additional monitoring in place by MNIT to ensure system availability remains high.

Service availability categorized by customer

MNIT support hours for DVS with a 95% uptime.

Customer	Service	MNIT service desk core business hours	MNIT on-call support	System monitoring hours*
Law enforcement interfaces				
Note: All services provided to law enforcement services are 24x7x365				
	FASTDS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	MNLARS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
Citizen/public facing website				
Note: All services provided to citizens are 24x7x765				
	FASTDS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	MNLARS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
DVS systems				
Note: Services provided to DVS are during core business hours and on-call support hours				
	FASTDS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	MNLARS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	Permits	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	Esupport	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
Deputy registrars				
Note: Services provided DR/DL are during core business hours and on-call support hours				
	FASTDS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	MNLARS	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	Permits	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365
	Esupport	7:30 a.m. to 4:30 p.m. M-F	4:30 p.m. to 9:00 p.m. and 7 a.m. to 9:00 p.m. Sat.	24x7x365

Monitoring hours also include most of our routine maintenance windows, which are communicated in advance.

Performance measure #7 - customer service responsiveness

The DVS contact center encompasses 21 phone lines and several email channels. Unlimited phone servicing is provided to law enforcement and deputy registrars, with priority routing for law enforcement calls in front of general public calls. Unlimited email servicing is provided, with response times based on the capacity of available agents. Public phone lines have limited servicing based on the capacity of available agents and size of the phone network, which causes incoming calls to be rejected when exceeding these capacities. During the March 2019 - May 2019 time period, 638,699 calls were received, of which 213,971 calls (33.5%) were rejected and sent to a busy message. Compared to the preceding quarter (December 2018 to February 2019), call volumes increased 5.84%. In addition, public phone line calls handled by agents during this time period increased by 19.5% from the previous quarter.

To improve customer service, the Public Information Center (PIC) added 22 temporary staff members on April 1, 2019 to reduce the number of unanswered calls and untimely emails. Additionally, in September of 2018, DVS increased the call threshold on all motor vehicle and drivers' license lines, which led to a decrease in rejected calls from previous quarters.

Figure 8 shows the call volume pre and post-MNLARS. The vertical line represents the date of the MNLARS Vehicle rollout.
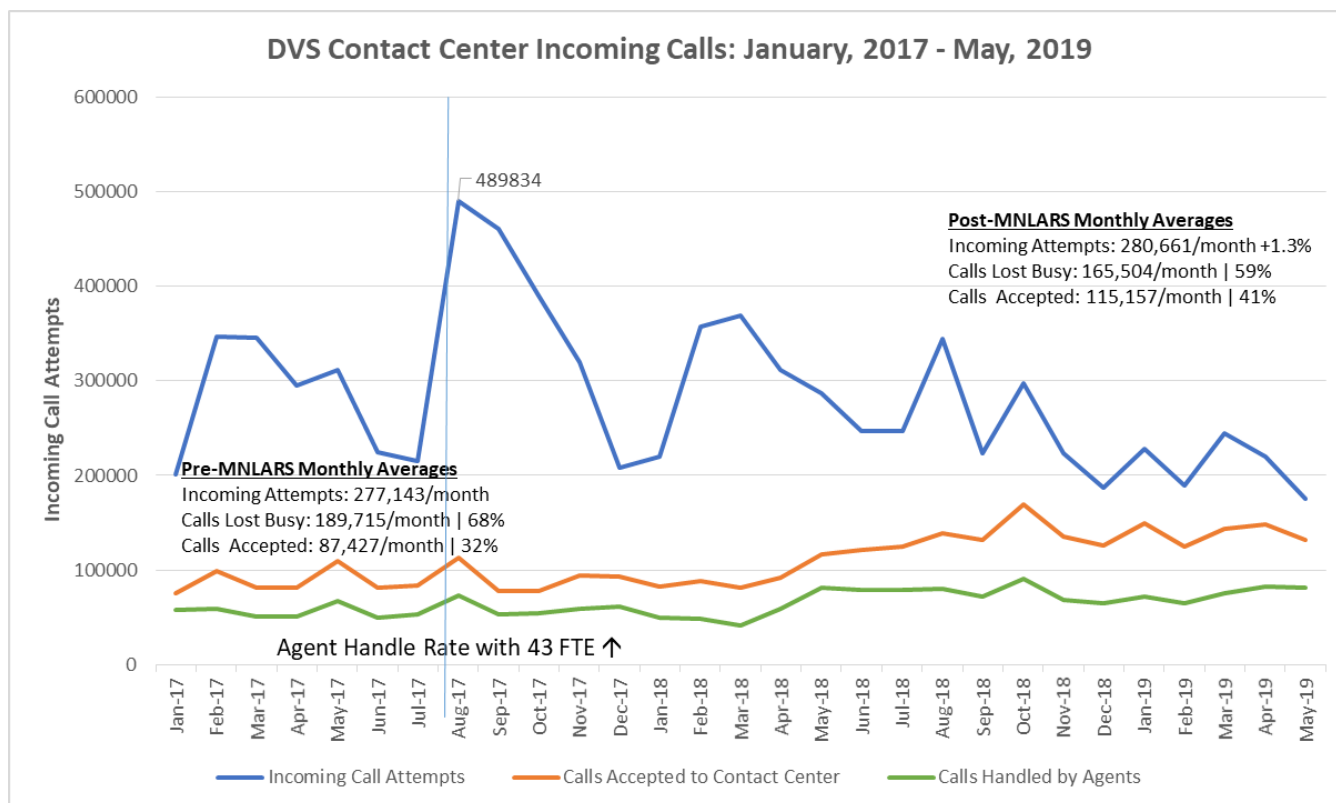
Figure 8 - DVS contact center incoming calls: January 2017 - May 2019

Total calls to DVS contact center from 3/1/2019 to 5/31/2019

The following chart contains specific information about the volume of calls and emails to the Public Information Center (PIC) from March 2019-May 2019.

Phone line	Number of calls
Public phone lines (19)	610,052
Deputy registrar* lines (1)	27,853
Law enforcement line (1)	794
Total calls	638,699

DPS Driver and Vehicle Services registrar lines include deputy registrar and driver's license agents.

All public communication – public phone lines (19)

Call type	Number of calls
Incoming calls	610,052
Accepted calls	396,081
Rejected calls	213,971
Calls offered to agents	266,598
Abandoned calls	42,567
Calls handled by agents	221,363
Average speed to answer	05:11 minutes

Incoming calls are not tracked by call type.

Definitions:

Incoming calls: All attempted calls to the contact center.
Accepted calls: Calls that immediately entered the contact center system upon dial without receiving a busy message.
Rejected calls: Calls rejected due to high volume and sent to a busy message.
Calls offered to agents: Caller has selected a menu option and was placed in queue to speak to a live agent.
Abandoned calls: Queued calls to speak to a live agent that disconnect/hang-up while in the queue.
Calls handled by agents: Queued callers have been connected to speak to a live agent.

All public communication – email

Email type	Number of emails
Vehicle services emails received	14,341 emails
Driver services emails received	15,176 emails
Outgoing responses	31,912 emails
Total unprocessed emails	398 emails – on 05/31/19
Furthest date unprocessed	05/27/2019 (4 days) – on 05/31/19

Deputy registrar communication – deputy registrar phone lines (1)

Call type	Number of calls
Total calls from deputy registrars	27,853
MNLARS Vehicle specific calls*	6,962
Average speed to answer	09:44 minutes

MNLARS Vehicle calls are those selecting option "MNLARS Navigation" or "MNLARS Transaction."

Deputy registrar communication – email

Email type	Number of emails
Total emails from deputy registrars	3,779
Total unprocessed emails	424 emails – on 05/31/2019
Furthest date unprocessed	04/25/2019 (36 days) – on 05/31/2019

Plan for user acceptance testing (UAT)

DVS staff perform user acceptance testing (UAT) to ensure that all business and system requirements are met. DVS staff develops test scenarios and writes test cases based on new functionality, and DVS staff tests these scenarios and cases prior to each release. DVS staff also perform regression testing to ensure existing functionality remains as it was built. This is an ongoing process throughout the development of the MNLARS Vehicle system.

DVS conducts UAT training demonstrations to validate upcoming releases. DVS plans pre-release training demonstrations with stakeholders. DVS also engages stakeholders to do "live" UAT testing, using business test scenarios that cover the functionality that will affect them.

Training demonstrations

DVS has modified the UAT process to host UAT webinar training demonstrations, at the request of stakeholders in the Executive Steering Committee. This provides stakeholders the ability to give more complex feedback about multiple scenarios that could happen under a given transaction. DVS will include this model of UAT for the 1.16 release.

Participating stakeholders are notified five days prior to training demonstrations to make sure they can successfully sign in to WebEx. During UAT training, DVS presents how a fix or functionality will work in the system. Additionally, they collect any feedback or concerns that stakeholders have. DVS hosts the training demonstration before the release goes live.

Stakeholder "live" user acceptance testing

During UAT testing, stakeholders come in person to St. Paul to execute business test scenarios using the MNLARS Vehicle UAT test system. On June 5th DVS hosted a "live" morning session for Release 1.16.

Stakeholders have a choice of which method would give them the most assurance that the release works within the scope of the defects and gaps addressed.

Plan for stakeholder input on code releases to MNLARS Vehicle

Executive Steering Committee

The Executive Steering Committee (ESC) is comprised of staff from the Minnesota Deputy Registrars Association, the Minnesota Deputy Registrar Business Owners Association, the Minnesota Auto Dealers Association, the Northland Auto Dealers Association, Manheim Auto Auctions, and MNIT and DPS personnel. It currently meets at least once a month on Wednesday's from 2-4 p.m. During those meetings, the focus centers on how MNIT and DPS are making the MNLARS system better for end-users and instituting better processes between DVS and their business partners.

In March 2019, the ESC adopted a charter and appointed new members to the committee. The purpose of the committee is to provide oversight and accountability for projects within the Department of Public Safety (DPS), Driver and Vehicle Services (DVS) that impact the information systems used to issue identification cards and motor vehicle titles and registrations. The committee is responsible for ensuring project impacting the information systems align with the strategic vision of DPS, DVS, and business partners and to serve as the subject matter experts for these functions.

The committee also developed workgroups to allocate resources to review business processes and communications for vehicle and driver services. These workgroups provide updates to the ESC on work assignments that have been completed.

Master List process

Members of the ESC completed the reprioritization of the Master List on June 5, 2018.

The items in any given release will rarely be delivered in exact order of ranking. There are many factors that come into the bundling process for each release. While stakeholder priorities are the number one factor in deciding what is included in a release, with a multi-disciplined approach, it will never be the only factor. MNIT also determines the optimal sequence in packaging to address the priority items on the list based on the ability to build any given item into the system.

Once the content of the release is put together, the ESC reviews the list. MNIT and DPS walk through each line item and members have the opportunity to give feedback and ask questions about overall content.

Emergency Master List additions process

MNIT and DPS have established an emergency escalation process. This process allows any member of the ESC to bring an urgent need to the table. MNIT can also bring up critical security-related items that it must act upon immediately to avoid a data or access breach.

The item of concern gets elevated to the ESC. The members of the ESC help decide a plan of action and assist MNIT and DPS in reporting out any decisions made on a particular emergency item at the next ESC meeting the following week.

Post-deployment production testing

Live-in-field release tests occur with each release. Each participating deputy registrar tests the release with actual customer transactions during post deployment check out. With this live testing, MNIT and DPS are able to confirm every transaction the deputy registrars process go through the system successfully, to ensure there is no need to roll back the release.

Prior to the in-field testing, the UAT team sends out identified test scenarios to a number of stakeholders who then make sure that they have real transaction data that can be used to test the scenarios. This data is an actual transaction the stakeholder will process for their customer on the day of testing, since their system will be live.

MNIT and DPS notify volunteer testers 30 minutes in advance of when the test process begins. MNIT and DPS use WebEx for screen sharing and monitoring purposes. Stakeholders perform their transaction while on a conference call with the UAT team and other registrars and auto dealers. This way, testers have the ability to confirm the transaction or share any issues or concerns they have.

After testing each item, the UAT team asks stakeholders to verbally acknowledge that their test was successful. If the stakeholders are unable to do so, someone on the UAT team will get all of the details about what went wrong with the transaction and take that back to the ESC in an immediate conference call. Should something unexpected occur, the ESC, MNIT, and DPS may need to make a go/no-go decision together.

For Release 1.15, Governor Tim Walz added an additional level of scrutiny by joining the release team personally to approve the pre-launch go/no-go decision. Additionally, he joined the DPS and MNIT meeting with deputy registrars to participate in the go/no-go decision post deployment and participated in observing the post deployment testing.

Planning is currently underway for the post-deployment testing for Release 1.16.

Communications plan for transparent MNLARS Vehicle outages and system slowdowns

The communication plan is comprised of a three-part process to keep stakeholders informed and updated as soon as MNIT and DPS become aware that something is wrong with either MNLARS Vehicle or one of the DVS legacy systems (legacy driver, mainframe, motor vehicle permits). This process is also used when an issue arises with an interface partner.

Step 1: Send preliminary notification to stakeholders confirming there is an issue.
Step 2: Identify issue with stakeholders, give approximate timeline for resolution.
Step 3: Send final notification indicating resolution and providing additional details when necessary.

MNLARS Vehicle service interruption - communication procedure

To ensure continuity of operations and service, MNLARS Vehicle, legacy driver, and motor vehicle permits staff will enact the communications procedure outlined below.

0-30 minutes   Determination of impacted applications and services.

< 30 minutes   **First stakeholder notification:**

DPS service desk sends initial communication sent to deputy registrars and dealers, acknowledging that MNIT and DPS know there is an issue with MNLARS Vehicle or one of the legacy systems (legacy driver, mainframe, motor vehicle permits). As soon as possible, DPS service desk sends the generic preliminary notification to system users.

Delivery method:

- DVS staff sent via Outlook
- Deputy registrar and dealers via GovDelivery

30-45 minutes   DPS service desk further escalates and troubleshoots, implements ESC procedures, and participates in technology and management bridge calls.

45-60 minutes   **Second stakeholder notification:**

DPS service desks sends an update to initial communications – includes additional details, resolution, or estimated time to resolution. *Subsequent communications follow every 60 minutes until resolution.*

DVS communications sends the notification within 15-30 minutes of first one.

DVS communications works with DPS service desk and the DPS Office of Communications to craft a more comprehensive message about what system is affected, what the problem may be, and, if possible, the anticipated length of the issue.

Delivery method:

- DVS staff sent via Outlook
- Deputy registrars and dealers via GovDelivery

Resolution   **Resolution notification to stakeholders:**

Notification is sent after the resolution is found and services are confirmed as fully restored.

DVS communications works with DPS service desk and the DPS Office of Communications to craft a resolution notification with root cause analysis, total impact, and any additional information regarding the issue.

Delivery method:

- DVS staff sent via Outlook
- Deputy registrars and dealers via GovDelivery

Proposed plan for post-release reporting on features and fixes to system stakeholders

MNIT and DPS must include three items in communications about all future releases. The first item is to socialize the actual content of the release, making sure that stakeholders are aware of what is changing and that MNIT and DPS can answer any questions they may have. The second item is to share a report once the UAT demonstration is finished, to ensure that stakeholders know that the UAT demo is complete, and to provide any necessary information or feedback received from the process. The third and final item is a post-release follow-up, confirming whether live-in-field testing went well and what, if any, additional feedback MNIT and DPS received since the release went into the system.

Socialize release content

Once the ESC has determined and vetted the content of each release, all stakeholders will receive the itemized release list, along with highlighted priorities, before it goes live in the system. After the content is socialized, MNIT and DPS start the UAT process.

UAT report out

When MNIT and DPS get into the testing phase of each of the releases, the stakeholders will receive an updated report on the status of the UAT.

If there are significant issues during the UAT phase and as a result the release is postponed, the stakeholders will receive a follow-up notification that the release has been postponed. This notification will include the reason for postponement. When possible, the notification will include the rescheduled release date.

It can be difficult to identify this date quickly because the release will still be in the testing phase. MNIT and DPS will not deliver a release until the UAT team has worked out all the issues that made it a "show-stopper" and fixed them.

Post-release reporting

Once a release is deployed into the system and has had three to five business days to run, the stakeholders will receive a follow-up email either notifying them of the success of the release or notifying them of any issues they may experience as a direct result of the release. If there is additional action or notification needed, the DVS Communications team will follow up with all stakeholders.

Plan to create greater efficiencies and streamline title processing to reduce and minimize backlogs

As was noted in earlier reports, DVS continues to use a multi-focused strategy to reduce and minimize backlogs, which includes using overtime for DVS staff, employing seasonal employees, contracting for staff, and temporary staff.

Staffing Changes	Comments
Driver and Vehicle Services title and registration employees	To augment the temporary staff funded by Minnesota Laws 2019, Chapter 1, the title and registration team temporarily reassigned 19 trained employees to assist with driver license issuing.
Department of Revenue seasonal staff (These are seasonal staff who the Dept. of Revenue employs during the tax season.)	Since March 2019, seasonal staff have been recalled to assist during the tax season. There are currently no seasonal staff reviewing titles.
Ally Business Solutions, LLC (A St. Paul non-profit organization that matches the skills and interests of people with disabilities to the needs of private business and governmental agencies.)	An average of 11 contracted staff review the manufacturer certificate of origin (MCO) and Minnesota title transactions.
Temporary Staffing	As part of the $2 million in funding to hire temporary staff through June 30, 2019 to meet customer service levels, 43 temporary staff have been hired and trained to review MCO and Minnesota title applications.

As noted in the Office of the Legislative Auditor report *MNLARS Quarterly Reporting Verification – Title Backlogs and System Funding* (pages 17 to 19), DVS capabilities to reduce title backlogs is highly dependent on the number of staff reviewing title applications, and staff augmentation is required to keep pace. While temporary staff augmentation can help alleviate short-term title processing needs, it does not address the long-term need of trained and experienced staff members to approve title applications necessary to keep turnaround times at reasonable levels that are supportive of DVS stakeholder needs.

Request for information (RFI)

The following companies responded to the April 30, 2018 RFI solicitation in the *State Registrar*.

These companies submitted responses to the RFI by the May 31, 2018 4:00 p.m. deadline:

- Business Information Systems (website: http://www2.bisonline.com/)
- Celtic Systems (website: https://www.celtic.bz/Hub)
- FAST Enterprises (website: https://www.fastenterprises.com/)

The summary of the responses and information received from qualified vendors was submitted to the committee and the information technology auditor by August 1, 2018, as required by 2018 Minnesota Session Laws, Chapter 101, Section 2, Subd.5 (e). Recently, each of the RFI respondents were contacted to determine their continuing interest in providing information. Each agreed to continue their participation in the RFI and each were provided with additional questions. In addition, they attended RFI panel discussions on March 4, 2019. After the respondents provide additional information, it will be summarized and provided to the committee members.

Request for Proposal (RFP)

Minnesota Laws 2019, 1st Special Session, Chapter 3, Section 35 requires an expedited procurement process which is open, competitive and evaluated based on proscribed criteria. The RFP was posted on May 28, 2019. Stakeholders were part of the development of the RFP and will also participate in the evaluation process. As required by this provision, the contract will be awarded by July 1, 2019.

MNLARS Vehicle budget update

Provided below is the MNLARS Vehicle budget for fiscal year 2019.

The budget is in a number of tables, including a budget summary (Table 1) and a special rider budget (Table 2). Please note that due to budget restrictions during FY 2018, the MNLARS project experienced a period of several months where spending was slowed due to ramp-down of the project and contractor uncertainty. As a result, some of the funding provided last session will be spent in FY 2019, rather than as expected in Q4 FY 2018.

Table 1 – budget summary

Table 1, the budget summary, includes a breakdown of revenues and costs rolled-up to a summary-level similar to that previously provided to the legislature as part of the full funding budget from the governor's recommendations in January 2018. It includes revenues, expenditures, encumbrances, and forecasted spend for the reporting period ending May 31, 2019. "Expenditures" are monies paid subject to an invoice or expense incurred. "Encumbrances" are monies set aside for payment after an obligation for payment has been established, but no invoice has yet been approved or paid. "Forecasted spend" includes planned expenditures and encumbrances that are anticipated but have yet to be either paid-out or set-aside.

Financial reporting for vehicle & driver for reporting period ending May 31, 2019 ($000)	FY18	FY19		
Revenues	**Total**	**YTD Revenue**	**Forecast Revenue**	**Total**
Special revenue	3,738	5,912	-	5,912
Carryforward	12,632	14,080	-	14,080
Receipts	2,130	1,878	22	1,900
Transfers in	2,130	8,000	-	8,000
MNLARS deficiency	-	11,200	-	11,200
Total revenue	20,630	41,070	22	41,092
Expenditures - Driver	**Total**	**YTD spend**	**Encumbered & forecast**	**Total**
FAST contract	8,250	8,500	6,500	15,000
FAST DVS staff	-	522	310	832
MNIT Drivers staff	41	546	106	652
FAST contractors	834	1,135	-	1,135
Technology costs	659	612	684	1,296
Other spent	32	85	8	93
Total Driver	9,816	11,400	7,608	19,008
Expenditures - Vehicle	**Total**	**YTD spend**	**Encumbered & forecast**	**Total**
Contractors	11,020	8,383	2,634	11,016
Data migration	-	-	393	393
DVS staff	416	595	174	769
MNIT staff	2,740	1,763	521	2,284
Technology costs	2,287	2,995	1,041	4,037
Other spent	221	108	14	122
Total vehicle	16,684	13,844	4,777	18,621
Total Driver and Vehicle	**$26,500**	**$25,244**	**$12,385**	**$37,629**

Table 2 – special rider budget

Table 2, the special rider budget, contains an accounting of the use of fund provided under MN Laws 2018, ch. 101, including $7,051,000 for contracting to perform software development on the vehicle services component of MNLARS and $2,599,000 for technology costs. The numbers contained in this table are contained in the data provided in Table 1 but are addressed separately here.

Special rider budget for reporting period ending May 31, 2019 ($000)	FY19						
Rider	Carry forward from FY18	Transfers	Total FY19 budget	YTD	Encumbered & forecast	Total forecast	Remaining amount
Contracting	3,626	93	**3,719**	3,699	20	3,719	-
User authentication & access control management	83	(23)	**60**	41	10	51	**9**
Testing environment, hardware, server & data storage	2	(2)	**0**	-	-	-	**0**
Partial relocation of data center	650	-	**650**	622	14	636	**14**
Disaster recovery & preparedness	667	-	**667**	556	83	639	**28**
Contracted software review & software development Support	884	(68)	**816**	218	478	696	**120**
Total	**$5,912**	-	**$5,912**	**$5,136**	**$605**	**$5,741**	**$171**

Table 3 – deficiency technology budget

Table 3, the deficiency technology budget, contains an accounting of the use of funds provided under MN Laws of 2019, chapter 1, section 1, including $5,500,000 for Phase 2 of the driver's license system development and implementation and, $5,700,000 for Minnesota Licensing and Registration System development, technology costs, contracts, MNLARS development contractors, MNLARS data and tools contractors, business analysts, and user acceptance testers. The numbers shown below are also shown in the budget summary in table 1.

Deficiency	Budget	YTD	Encumbered & forecast	Total forecast	Balance
FAST contract	5,500	-	5,500	5,500	-
Development, technology, contractors	5,700	66	3,200	3,266	2,434
Total	**$11,200**	**$66**	**$8,700**	**$8,766**	**$2,434**

Spend for employees and contractors

Spend for MNIT and DPS employees is shown for the reporting period ending May 31, 2019. Tables 4 and 5 contain staff charges allocated to the MNLARS Vehicle project for each position, as well as an indication for each position of the number of dedicated staff and non-dedicated staff (those that spend part of their time supporting MNLARS Vehicle, but not assigned to the project).

Table 4 – amount spent for MNIT employees

Position	Dedicated staff	Non-dedicated staff	FY19 Spend ($000)
Managers/supervisors	2	3	351
Project managers/admin support	5	1	180
Technical/software architects	-	-	-
Software developers	9	-	773
Operations	12	4	927
Technical support	5	1	77
Total	**33**	**9**	**$2,308**

Table 5 – amount spent for DPS employees

Position	Dedicated staff	Non-dedicated staff	Vehicle ($000)	Driver ($000)	FY19 Spend ($000)
Program Director	2	-	65	92	157
Business Analyst	15	-	476	395	871
Information Officer	1	-	35	35	70
Project Consultant	1	-	19	-	19
Total	**19**	**-**	**$595**	**$522**	**$1,117**

Table 6 – amount spent (in thousands) for contractors

Spend for MNIT contractors is shown for the reporting period ending May 31, 2019. Table 5 contains the amount (in thousands) paid by the MNLARS Vehicle project for each contractor. Each contractor may have one or more billed resources placed on the project or may be paid upon completion of deliverables without regard to the number of resources engaged.

Contractor	FY19 Spend ($000)
American Association of Motor Vehicles	16
American Cybersystems Inc	197
American Databank	1
Basswood Consulting Group LLC	140
Charter Solutions Inc	481
Dahl Consulting	192
Elegant Enterprise Wide Solutions Inc	105
FAST Enterprise LLC	8,500
Iceberg Tech Group	115
International Projects	355
Intertech Inc	65
Janus Software Inc	16
Knowledge It A Cooperative	634
Lighthouse Software Solutions	1,146
Logisolve LLC	19
Sdk Technical Services	-
Software Engineering Services	50
Sogeti/Capgemini America Inc	5,352
Systems Advantage Inc	326
Talent Software Services Inc	160
Zinncorp Inc It Doctors	148
Total	**$18,018**