



Motor Vehicle Automated Transaction System
MATRX System
Requirements

Version 1.0
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This document was prepared with input from the MVC MATRX System Steering Committee and User Groups.

1. Introduction

The New Jersey Motor Vehicle Commission (MVC) has begun a process to modernize its primary computer systems and overall technology infrastructure. Over the past eight months, the staff and management at MVC have developed a vision and set of requirements for a set of new computer systems. They will replace the current system and provide the capabilities necessary for MVC to reach its goals and operate effectively in the coming years. These goals include:

- ▶ Simplify and properly support complex and ever-changing business processes,
- ▶ Quickly react to changes in legislation or policy,
- ▶ Provide high quality customer service,
- ▶ Implement security procedures that maintain the highest integrity in all transactions and documents produced.

1.1 *Replacing the MVC Comprehensive System*

The MVC supports most of its operations with a collection of computer subsystems that are known as the Comprehensive System. The foundation of this system is over fifteen years old and it is primarily a COBOL based system accessing a CA-Datcom database hosted on the State's IBM mainframe platform. In addition to the Comprehensive System, MVC relies upon a Bull-HVX COBOL system that is known as the Agency System. This system is installed at each of the forty-five local MVC Agency sites and provides local functions and direct access to the Comprehensive System for agency staff.

Relative to modern technology, these systems are difficult to maintain and lack flexibility. In general, they no longer properly support MVC's mission.

1.2 *MVC's Vision for Using Technology and Building a New System*

MVC has worked over the past eight months to evaluate current business operations, opportunities for using technology, and best practices from the public and private sector to develop an overall guiding vision for MVC's use of technology and plans for new computer systems.

A vision has been developed including concepts for

- ▶ enhancing MVC through better use of technology,
- ▶ new services, and
- ▶ new processes for working with businesses, individuals and partners.

In addition, the vision outlines a technical roadmap for moving forward and creating a flexible, modular system that can be implemented in phases.

MVC envisions that the new Motor Vehicle Automated Transaction System (MATRX System) will be a collection of subsystems that are architected to work together and support MVC's most critical operational needs.

1.3 MVC Vision and Business Requirements

While the vision introduces concepts that are generally applied to MVC operations, this requirements document also discusses the implications of applying those concepts to the primary operational areas within MVC. This document also addresses the business requirements that these operations have of the new system.

This document divides MVC into six operational areas as follows:

- ▶ **Business Licensing** – All functions associated with the issuance of business licenses including applications, inspections, approvals, tracking of requirements, and follow-up activities.
- ▶ **Driver History** – All activities associated with events on an individual's driving record and the result of those events including surcharges, suspensions and restorations.
- ▶ **Driver Licensing** – All activities associated with the acceptance of applications, issuance of permits, testing and granting of personal and commercial driving privileges.
- ▶ **Vehicle Title & Registration** – All activities associated with the processing of vehicles of commercial and personal vehicles including inspections and leases.
- ▶ **Third Party Interaction** – All activities associated with information sharing that occurs with numerous third parties including insurance companies, transportation companies and the public sector.
- ▶ **Financial Management** – All activities associated with finance and accounting operations.

1.4 MVC Subsystem Requirements

In addition to developing a general vision and set of business requirements, MVC has developed a preliminary architecture that includes a description of various subsystems that will be required in the MATRX system. This includes systems that will be custom developed and other that will be commercial software. Examples include:

- ▶ Customer Information Management
- ▶ Privilege Management
- ▶ Customer Interaction Management
- ▶ Rules Engine
- ▶ Financial Management
- ▶ Printing Management
- ▶ Interfacing & ETL
- ▶ Image Processing
- ▶ Reporting & Analysis

These systems will be described later in the document.

1.5 MVC Preliminary Data Model

MVC has assessed its data management requirements by evaluating the data structures of the Comprehensive System and by working with each business area to define additional areas of information that need to be included. These requirements have been developed into a logical data model. MVC intends to use this data model to guide the development of a central database that will coordinate all subsystems and to guide the development of databases for custom systems.

The data model introduces concepts for managing information for individuals and businesses, contact information, information about privileges that have been licensed to any entity, driver history and many other functions.

This data model is described later in this document and in a separate document.

MVC plans to implement a phased approach to implementing the various subsystems of the new MATRX system. To support this approach, an Interim “next generation” database will be developed that is synchronized with the current comprehensive system database. This approach will allow the existing system to co-exist with new systems as they are phased in. The exact approach to the phased implementation will depend upon the selection of COTS and custom packages and the development schedule.

2. Vision

MVC staff and leadership have worked to develop a vision for how the commission will operate and serve its customers. Leveraging the latest technologies will allow for new procedures and services to our customers in a manner not currently possible.

This section presents the guiding “Vision” that has been developed for using technology to improve MVC’s operations and for moving forward with the project.

2.1 Our Primary Functions & Operational Goals

MVC has four primary functions that are fundamental to all operations. The vision for the new computer system is based on supporting these functions. They are:

▶ Promote Public Safety

- Licensing
- Education
- Enforcement
- Vehicle Inspection & Titling

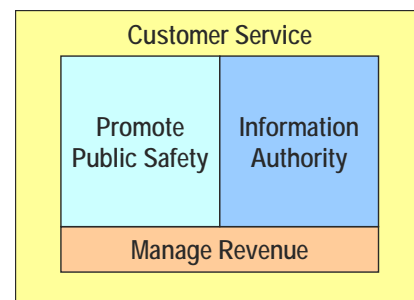
▶ Manage Revenue

- Fee Collection
- Supplementary Services

▶ Serve as an Information Authority

- Provider of Critical Information to Public Sector Partners
- Provider and Steward of the Private Sector’s Premier Identification Card

▶ Customer Service



- MVC must serve its customers in a professional manner. This approach fosters cooperation and allows MVC to better execute its operations.

The MVC staff and leadership have further outlined operational goals that define how these functions should be executed. The new systems must enhance and increase the effectiveness of MVC staff. When planning operations and prioritizing subsystems the vision emphasizes further progress on the following goals:

- ▶ **Timely** – Customers should experience no unnecessary waiting for service to start or complete and service is available when and where possible
- ▶ **Well Documented** – Our records must be complete, clear and auditable. We must know the history of our interactions with our customers and document our actions
- ▶ **Accurate** – Errors must be minimized as inaccurate records cause problems for all parties. Financial transactions must be fully auditable.
- ▶ **Efficient** – Our processes should have no wasted or unnecessary effort.
- ▶ **Secure** – Fraud must be minimized. Sensitive systems and transactions must be protected.
- ▶ **Easily Communicated** – Our partners & customers must understand the process for working with us and have access to appropriate information.

2.2 ***Approaches for Leveraging Technology to Support our Business***

In many cases, existing technology has limited the services that MVC could offer or the processes that were most desired. The following concepts exemplify opportunities for enhancing MVC business operations and services through the use of technology. As part of MVC's vision, each of these approaches has been applied to all business areas.

Empower Business Partners to Participate In Our Processes

MVC has many partners who could use our systems to expedite and simplify common processes. This includes municipalities, schools, law enforcement, and courts. New systems must be created that allow our partners to securely interact with MVC's staff and systems. Internet based technologies will allow various portals and systems to be offered to our partners. These systems will reduce the flow of paper, and increase efficiency, accuracy, and timeliness.

For example, municipalities currently submit a significant amount of forms and paperwork related to processes such as the authorization of emergency lights and the processing of abandoned vehicles. While these processes currently require numerous manual checks and steps, the process could be automated by providing municipalities with systems that eliminates paper and forms.

Allow Customers to Preprocess Transactions

While many customer transactions are simple, a significant number of them are complicated and include a variety of documents and information, in addition to payment method. Customers with complex transactions often spend longer amounts of time processing their transaction because they are simply waiting for information to be

reviewed, checked and entered into the computer system. New systems must allow the customer to initiate or preprocess their transaction by using a secure customer web site to start the process and enter necessary information including payment method. When the customer arrives at MVC for a transaction that requires some form of in-person interaction, both MVC and the customer will save time by referencing the “preprocessed” transaction. This approach also provides immediate feedback to the customer and informs them of problems or constraints with their intended transaction that they may not have realized, saving the customer time and frustration.

Encourage Self-Service Completion of Appropriate Transactions by Customers

With the appropriate security procedures in place, many typical transactions can be performed in a self-service manner using the Internet or Interactive Voice Response telephone systems. While MVC currently supports a number of self-service transactions, a new system, coupled with MVC’s new Digitized Driver License, will allow many more transactions to be completed in this manner. Businesses and individuals will be able to manage their business with MVC using on-line facilities and complete transactions from the home or office without visiting an MVC location.

Minimize Forms & Paperwork

MVC maintains an overwhelming number of forms that support an equal number of important business processes. Many forms support or are designed for a very specific need that in some cases include only the need to document a customer’s signature. MVC will deploy systems that are accessible to customers and business partners and include the capability to capture a handwritten signature or use another authentication method. As these systems are implemented, MVC will reduce the number of paper forms that are needed. In many cases this will also reduce the need to scan final paperwork.

Streamline Approval Processes with Automated Systems

Automating or partially automating approval processes allows for greater efficiency, security and accuracy. As processes are supported with on-line systems and steps become automated the opportunity to automate and facilitate the approval process becomes much greater.

Automated approvals work in conjunction with “preprocessing” and other self-service functions. Business rules will be implemented in a rules engine and automated checks will be developed including interfaces with AAMVA, state and federal agencies. Some transactions may be eligible for approval in a completely automated manner and others will require a combination of automated and manual reviews. Both cases offer significant advantages and improvements to the process.

Reduce Fraud with System Assistance

MVC and other state motor vehicle agencies are increasingly becoming information authorities, critical links to citizen and criminal identification, and venues for attempted fraud and other illegal activities. MVC has a history of fighting criminal activity and the vision for using technology includes implementing tools to identify and fight fraud.

New computer systems can be programmed to identify suspicious patterns and alert users and management. Patterns may include attempted transactions at multiple agencies that identify suspicious customers. Patterns may also include usage patterns and actions typical of staff wrong-doing. The scanning of documents will deter first-time offenders and staff from passing counterfeit or insufficient supporting documentation. Additionally, an inventory tracking system with tighter controls will reduce the opportunity for theft.

Customer Centric Systems

The current MVC systems are “single transaction oriented”. Currently, a customer requests a specific transaction, the staff enters the required information and the transaction is completed. In this case, the staff never has an opportunity to see the customer’s complete profile or understand their other needs.

A “customer centric” system would show the staff all licenses, vehicles and information associated with a customer and advise them of all pending renewals, fines and other necessary actions. This would allow the staff to better and more quickly serve the customer.

Strong Management of Revenue Collection

In the past two years MVC has converted itself from an internal agency to a stand-alone commission. As part of that process, MVC continues to implement a strong revenue management function. As part of this vision, technology will be used to further strengthen and expand revenue collection management from the point of service and end of day reconciliation to the allocation and accounting of funds.

A financial management capability and point-of-sale function will support this part of the vision.

2.3 System Flexibility & Modularity

Our current systems exemplify legacy technology. Developed as a large collection of interrelated COBOL programs, they are naturally lacking the flexibility and modularity of new systems and technology.

Our vision and approach for developing the MATRX System will leverage current technologies and system development techniques and standards. The overall MATRX system will be developed as a set of subsystems that support and interact with each other, rather than one large system. This approach provides the benefit of a phased implementation and allows subsystems to be enhanced or modernized independently without having to rework the entire system.

This approach also requires the design of facilities that allow for central coordination. Subsystems such as a tiered database that coordinates and manages common information, a rules engine that implements common business rules and a financial engine that coordinates all financial activities will allow the other subsystems to properly interact.

2.4 **Leverage COTS**

Many of MVC functions are not typical to the private or public sector and some subsystems are expected to be developed as custom software. However, many functions are typical and MVC's approach will be to include Commercial "off-the-shelf" (COTS) software packages as integral components of the MATRX system. Financial management and inventory tracking systems are two examples of necessary COTS systems. Case management and customer interaction tracking are also examples. These systems must be capable of maintaining their own data while interacting with a master customer database that coordinates them.

The current generation of COTS software is significantly configurable and supports numerous Application Program Interfaces (APIs) that allow them to interact with other systems. This approach will benefit the project by delivering significant "out-of-the-box" functionality without the need for the type of development and testing that custom software requires. In addition, MVC will leverage the ability to have software upgrades that enhance functionality without initiating new internal or external development efforts.

3. **MATRX Subsystems**

MVC has developed an overall architecture and approach for implementing the MATRX System. A "matrix" of key subsystems will be the core of the system. As described, some of these modules will be developed using custom programming and others will leverage commercial off-the-shelf software. All will be coordinated and use one central database and data model.

The following is a description of the core subsystems that are required by MVC for the MATRX System. In some cases, these subsystems are Commercial Off-the-Shelf (COTS) software packages that act as MATRX subsystems. In other cases, these subsystems will be custom developed. All of the custom developed MATRX software will not constitute one subsystem. Custom code will be used to develop many different subsystems that range from customer information and privilege management to various web-based interfaces.

3.1 **Customer Information Management**

MVC works with individuals and businesses through licensing, inspections and other services. All of these services are managed and delivered based upon the particular details of the customer. Additionally, the tracking and results of these services need to be recorded and associated with these customers. The Customer Information Management (CIM) System is the MATRX subsystem that tracks core information about our customers.

Each customer in the MATRX system needs to be assigned a unique LEID (Legal Entity Identification) number and the system must assist in managing unique numbers and not issuing duplicates to the same entity. This will allow the MVC to properly track and serve each unique business and individual.

MVC customers will be divided into two distinct but similarly managed categories, businesses and individuals. While specific information will be managed for each type of customer, the same basic functions and services will apply consistently to both.

The CIM will also track other information such as contact information, financial information, business locations, DBA (Doing Business As) and AKAs (Also Known As), and link registered owners and operators as individuals to a business.

The CIM must also support MVC's 6-Point identification process and similar functions where identifying documents are collected and tracked. Such documents and other related documents will be scanned and stored in a document management system.

This subsystem, as most, must support a full transaction and history log that allows all updates to be tracked.

This subsystem is primarily accessed by authorized MVC staff but some functions may be accessed by other subsystems, such as those that would provide limited self-service functions for customers.

3.2 ***Privilege Management***

One of MVC's primary functions is the licensing of privileges to individuals and businesses. These include personal and commercial driving privileges, boat operator privileges, driving instructor and vehicle inspector privileges. For businesses, these privileges allow for a variety of operations including Automobile Dealership, Inspection Facility, or Driving School.

The Privilege Management system is the MATRX subsystem that tracks core information about privileges that are licensed or denied to any individual customer.

Primary functions of the Privilege Management system include the following.

Managing Privilege Descriptions and Requirements – The system must track “master” information about the types of privileges offered and their requirements which may include skill and knowledge tests, background checks, site inspections and submission of certifications or other information.

Managing Customer Applications for Privileges – The system must track all applications for privileges and track if requirements have been met and proper fees paid. The system should assist in the application process by identifying missing requirements and privileges that may be available based on existing requirements. As requirements are met, the system should support the process of authorizing the privilege, generating necessary documents and notifying appropriate parties.

Managing Privilege Changes & Maintenance – The system should allow MVC staff to process and authorize status changes including renewals, suspensions and restorations. The system should review and check all active privileges as some commercial privileges require interim refresh of some requirements to maintain the privilege. The system should notify customers of necessary actions and enforce the requirements by scheduling suspensions or other appropriate status changes.

Managing Fees and Fines – The system should track associated fees and fines that are part of the application, approval and maintenance process. The fees are noted in the system and posted to MVC financial system. MVC staff may add fines if appropriated. Non-payment of fees or fines due may trigger or schedule a status change such as suspension. Payment may also result in a status change.

Reporting and Printing – The system must provide appropriate printing of documents as appropriate to support the licensing process. MVC users must be able to query the system and generated standard and customized reports.

This subsystem, as most, must support a full transaction and history log that allows all updates to be tracked.

This subsystem is primarily accessed by authorized MVC staff but some functions may be accessed by other subsystems, such as those that would provide limited self-service functions for customers.

3.3 ***Customer Interaction Management***

MVC staff spends a considerable amount of time interacting with customers to answer questions, resolve disputes, process applications and to otherwise notify, respond and conduct business. The staff needs a system for tracking all interactions which will include email, paper & scanned documents, electronic documents and voice conversations

The system must also track required follow-up task actions as a result of these conversations and interactions.

MVC staff should be able to view and recall all or a filtered subset of such information to assist them in conducting business and documenting situations.

This facility should link to other subsystems and identify which interactions are associated with a particular privilege, case or particular process as appropriate.

3.4 ***Case Management***

Through the course of conducting business, MVC staff open and resolve a significant number of cases that support disputes, information discovery, legal case preparation, violations and other situations.

Each of these cases are created and managed to resolution. The case management process may include the collection of documents, tracking of all interactions, issuance of orders and other actions involving a customer and their privileges.

The Case Management System must work with the Customer Interaction Management system to track communications. It must also be capable of logging decisions and other actions which may trigger actions in the Privilege Management system.

3.5 ***Vehicle Management***

MVC manages information for millions of motor vehicles including personal automobiles, trucks, and busses. MVC must track the owners of these vehicles and issue a Title certifying ownership. Titles may be linked to a lien when another entity has a

financial claim to the vehicle. In addition, MVC tracks the registration of each vehicle and issues license plates for display on the vehicle while being operated on public roads. While MVC currently distinguishes the owner of a vehicle from the registered operator for commercial vehicles, it does not do so for personal vehicles. Leased vehicles require MVC to distinguish the lessor/owner from the lessee/operator.

The MATRX system will include a Vehicle Management Subsystem that tracks this information and links it to the relevant legal entities in the customer information management subsystem.

All vehicles must be inspected and MVC must track the completion and progress of the inspections. The Vehicle Management System must manage the inspection process which includes private agents, subcontractors and MVC staff. Functions include:

- ▶ Track Inspection Cycles & Requirements
- ▶ Track & Collect Inspection Data
- ▶ Track & Enforce Inspection Completion
- ▶ Support Specialty, Evaluation & Heavy Duty Diesel Inspections
- ▶ Inspection Sticker Management

3.6 Web-Based Transaction Center

MVC customers conduct millions of transactions each year. Most of these transactions are completed in-person at an MVC location or through the U.S. Mail using paper documents. MVC will open much of these basic transactions to a facility on the Internet that will allow customers to securely conduct business. A web-based transaction center will allow businesses and individuals to securely identify themselves and process transactions. These may include:

- ▶ Apply for privilege
- ▶ Submit required documents & Information
- ▶ Check the status of a process or application
- ▶ Make payments
- ▶ Schedule business license inspection
- ▶ Request & schedule hearings
- ▶ File a complaint

These processes will be completely integrated with the customer interaction & case management systems as well as the privilege management system.

3.7 Web-Based Public Information Center

MVC's effectiveness depends upon getting proper information to its customers. A web-based information center will allow anyone to view a variety of publicly available and important information. No User ID or authentication will be required for this system. The information available will include the following.

- ▶ **Valid Business Licenses** – The public will be able to view the status of business licenses for dealerships, inspections stations, and other entities with whom they may attempt to conduct business.
- ▶ **License Requirements** – The public will be able to view the requirements and process for obtaining various personal, commercial and business licenses.
- ▶ **Consumer Reference Materials** – Driving manuals, tutorials and other references will be available for viewing and downloading
- ▶ **Business Reference Materials** – Information for businesses that will allow them to more easily reference procedure guide, understand their responsibilities and easily conduct business with the MVC.
- ▶ **How-To Guide** – Simple guides for completing transactions and conducting business with the MVC.

3.8 **Web-Based Query Center**

MVC provides real-time query of information to a variety of authorized businesses. This includes insurance companies who check the driving records of their customers and transportation companies who check the status of their drivers. MVC will provide a web-based system that is secure and easy to use. This system must allow authorized businesses to identify staff, conduct queries, track usage and submit payment for services. The system will track all queries, and access to the system.

3.9 **Web-Based Storefront**

MVC provides physical inventory and stock to certain operations such as inspection facilities which need to purchase inspection stickers used on a daily basis. The purchase and distribution of such items will be made available to authorized businesses using a web-based storefront.

This storefront will allow customers to place orders, pay for, and track transactions. The system will interface with MVC's inventory management system and track the distribution and usage of controlled stock items which are serialized and valuable.

Using this system, businesses will be able to check the inventory MVC believes they have available.

3.10 **Document Management**

MVC staff receives and generates a considerable amount of documents across all business operations. Most documents are associated with a particular customer and application, case or other situation. The MATRX system will interface with a document management system to capture, organize, track and retrieve these documents.

Documents will be captured and retrieved at a variety of locations within MVC's central office and at approximately 50 locations around the state. The document management system must allow for quick scanning of documents while the customer is present as some documents will be returned after being scanned.

MVC staff should be able to track the versions of documents, annotate documents and set retention schedules.

3.11 ***Business Inspection Management***

MVC conducts a significant number of inspections in support of many of the business licenses that are granted. For example, the licensing process for Private Inspection Facilities and Car Dealerships requires initial and periodic inspections of the business premises. The Business Inspection Management system will be a subsystem of the MATRX system that tracks and manages these inspections. The system will include the following functions.

Managing Inspection Descriptions and Requirements – The system must track “master” information about the types of inspections offered and their requirements which may include staff knowledge, equipment inspections, proper notifications, etc. The system must also track MVC staff that are authorized to create, conduct and approve an inspection.

Manage Inspection Process and Follow-up – The system must allow users to create an inspection file, update it and manage the process to completion. This may include follow-up tasks resulting from an incomplete or failed inspection.

Auto Generate & Schedule Inspections – The system must review existing privileges (licenses) and automatically generated records for required re-inspections. Additionally, the system must allow users to manually schedule an inspection for a particular customer and license.

Create Inspection Complete Certificate – The system must provide capabilities for printing an inspection certificate. This certificate may be printed and mailed or may be printed in a self-service manner by the business using proper authentication.

Management Reports – The system must print our appropriate reports so that management and staff can track and plan the inspection process.

3.12 ***Financial Management***

MVC manages over \$1 billion in revenue each year. These funds are allocated to different accounts based upon the source of the revenue and legislative rules that have created additional funds and purposes. Additionally, many operational areas interact with and collect payments from the same business customers. An “off-the-shelf” Financial Management system include General Ledger, A/P, A/R, Budgeting, Grants management and reporting will be a subsystem of the overall MATRX. This system will interact with the NJ State Treasury and other MATRX systems that collect or distribute payments.

As each MATRX subsystem is designed and implemented it will include interfaces to the Financial Management System.

3.13 ***Inventory***

MVC maintains a significant amount of inventory stock. Some stock is serialized and considered controlled items because of its intrinsic “street value”. Such items include inspection stickers, Vehicle Title stock, and License Plates. MVC distributes this stock to over 50 MVC locations on a regular basis in addition to a much larger number of

business locations around the State. MVC must track stock levels at all locations and manage the shipments of all controlled and non-controlled items.

An “off-the-shelf” Inventory Management System will be a subsystem of the MATRX System. All systems which track the usage of inventory stock will interface with the Inventory System to update stock levels at the points of use.

The Inventory System must allow MVC staff to manage the entire inventory process including the ability to track and trend usage of stock, transfer items from one location to another, allocate stock, replenish or otherwise adjust stock levels. It must support periodic reconciliation and track all controlled items by serial number.

3.14 Rules Engine

The overall operation of the MVC and the process by which the MATRX system must perform calculations and enforce business rules is significantly complex and subject to continual change. This change is caused by new legislation, an ever increasing focus on security, operational improvements, and the addition of new services. The MATRX System requires a facility to change business rules and calculations in a manner that is fast, efficient and does not require a significant amount of system reprogramming. This system should allow MVC staff to focus on the definition of the rules and calculations and not be overburdened with technical implementation issues.

The MATRX System will contain a Rules Engine that will allow staff to manage the logic of business rules, calculations and fees. The Rules Engine will be accessible to all MATRX subsystem and these subsystems will be designed to leverage its functionality. Such rules may include the determination of eligibility for a new license, requirements having been met, fees due, or the requirements necessary to have a privilege restored. Such decision making code will reside in the Rules Engine so that multiple subsystems can access it and so that it can remain consistent across all subsystems.

3.15 Printing Subsystem

The MVC generates a significant amount of documents and notices which are used for both in-person transactions and batch transactions. These forms include many legal documents such as Vehicle Titles, Registrations, Business Licenses, and notifications.

The MATRX System will include a printing subsystem that will merge document design and layout with appropriate document data to produce a finished document. This system will allow MVC to better manage the layout and consistency of documents. It will also allow MVC to manage production of documents to multiple media including paper, PDF, HTML, email, and fax.

The printing subsystem will support all other MATRX subsystems that generate documents and provide a common infrastructure for printing at all locations.

3.16 Reporting & Analysis

The MATRX System will be built around a common data model and database infrastructure. This consistency will allow MVC to utilize a common set of reporting tools for reporting and analysis. These tools will support:

Standard Reporting – These reports are designed to meet the regular needs of MVC operations. The reports are run and distributed on a regular basis and used to manage MVC operations. The tools will allow these reports to be developed using primarily graphically means and scheduled to process automatically.

Ad-hoc Report – These reports are designed to meet special purpose needs. While similar to standard reports, they may not be scheduled or run repeatedly. The system should allow analysts to copy logic and designs from other reports to create new ones.

Analysis – Analytical “number crunching” focuses on accessing and performing unique calculations. Data must be manipulated by the reporting tools and available for extract into desktop tools such as Excel.

Data Dictionary – A comprehensive data dictionary must be available that allows analysts to quickly understand and use the data that is in the system. The MATRX System database will contain hundreds of database tables and thousands of fields, many of which will have complex definitions.

Report Library – The Reporting and Analysis tools must have a function for documenting the library of reports, their purpose and current usage.

Scheduler and Distribution – The subsystem must be capable of scheduling reports to be run either one time or on a regular basis. In addition, it must have a facility for storing, managing and distributing completed reports electronically for access by authorized staff around the state.

3.17 Identity Management

The MATRX System will include many subsystems, some of which will be custom developed while others will be “off-the-shelf” software packages. In addition, a variety of users including MVC staff and management as well as other state agencies, the public and businesses will have some form of access to the system or a limited number of subsystems.

The MATRX System will use an Identity Management software package to coordinate the identity and access rights of each user and the mechanism for providing access to the right software subsystems. In addition to centralizing security management, this subsystem will simplify user access by allowing for a single sign-on to access all authorized systems. This subsystem will also track and audit usage.

3.18 Point of Service Cash Management

MVC operates over fifty operations that collect payments on a daily basis. In the MVC Agencies and Regional Service Centers (RSC) operations include complete retail functions. The MATRX system must support a complete “cash register” function that allows staff to offer and process services and collect appropriate payments for those services. The system must support multiple payment types and mixed types for a single transaction.

In addition to supporting the actual customer transaction, the system must be able to reconcile and report on all of the day’s receipts and provide appropriate close out and

audit reports for all registers and cashiers. This system would be used by the staff working directly with customers as well as the staff working with payments and process that are conducted through the mail.

The system must interface with the other MATRX subsystems that actually process the transactions and with the financial system that records and allocates all funds.

3.19 External Interfaces & ETL

MVC MATRX system will exchange data with a variety of other computer systems including other state agencies, other states, the federal government, and private businesses. This data must be formatted and loaded or extracted on a variety of schedules working with data that may arrive or be requested in varying volumes.

The MATRX system will include an (data extraction transformation and Load) ETL subsystem that allows such external interfaces to be automated and implemented in a consistent manner.

The ETL subsystem must also manage a data dictionary that is used to support the definition of the field and table in the MVC MATRX data model.

4. Business Requirements

This section introduces the primary functional areas within MVC. Each area has a unique operation, serves a specific set of customers, and has developed a vision for the use of technology and opportunities to enhance service.

Each area will be generally described followed by a description of MVC expectations and goals for using new technology. The last section for each business area will reference the subsystems described earlier and discussion of how they apply to the business area.

4.1 Business Licensing

Functional Overview

MVC's Business Licensing operation oversees the licensing of approximately 50 "privilege types" to businesses and professionals. Examples include New Car Dealership licenses, Inspection Facility License, and Driving Instructor License. Primary functions include:

- ▶ Issue & Maintain Business Licenses
- ▶ Issue & Track Dealer Plates
- ▶ Issue & Track Inspection Stickers

Issue & Maintain Business Licenses

The various business licensing groups at MVC perform all functions necessary to issue and maintain business licenses including:

- ▶ Issuance
 - Maintain Business Information (Site, Principal, Profile, General Info.)
 - Issue Business License (Handle Requests for Business Licenses)

- Renew Business License
- ▶ Site Investigations & Inspections
 - Communications
 - Log Contact information
 - Generate Mailing for Business Licenses (Individual or Corporation)
 - Standard and Ad-Hoc mailings
- ▶ Enforce
 - Audit Facilities
 - Compliance Tracking
 - Suspend Business License Privileges
 - Administrative Hearing Process
 - Levy Fines Against Business
 - Maintain Case Information
- ▶ Collect Money
 - Collect Money – Initial & Renewal Fees, Penalties
 - Track Partial Payments
 - Payments for Inspection Stickers

Issue & Track Dealer Plates

All dealers are eligible to receive “dealer plates” which allow them to demonstrate and operate vehicles. These plates are not linked to any one vehicle. The function of tracking and distributing these plates is a component of the business licensing process. Some of the primary functions include:

- ▶ Track & Distribute Dealer Plates and Dealer Specialty Plates
- ▶ Manage Re-Issuance of expired plate numbers
- ▶ Track Boat Dealer Registrations & Decals
- ▶ Collect Fees

Issue & Track Inspection Stickers

Inspection stickers are distributed to private inspection facilities in support of the inspection process. These stickers are only distributed to authorized agents of the facilities at a standard fee per sticker. Inspection facilities are required to keep a minimum inventory available and the need exists to track and audit every individual sticker distributed and issued. In addition to the stickers issued at inspection facilities, a special sticker is distributed to new car dealers in support of the sales and inspection process.

Overview of Business Vision

MVC has a number of objectives and approaches for improving the licensing process. These improvements will leverage new technologies and include enhancements to the business process.

Leveraging Enhanced Identification

MVC deals with a variety of business owners, operators and staff and it is imperative that these individuals be properly identified when conducting business. MVC will develop approaches to use the new computer system to better track and identify individual by

creating or leveraging secure ID cards for these individuals. In addition, professionals who are licensed by MVC will also be issued ID cards that offer additional security features.

Simplifying Licensing System

The legacy system is built around a license number scheme that is unnecessarily complex and will likely be retired. As the new system introduces a singular numbering system for all legal entities, the issuance of licenses numbers will be coordinated resulting in one numbering system for all entities and licenses. This will simplify the issuance and tracking process. Legacy numbers that have been issued will remain valid for some period of time.

Enhanced Security and Public Information

Most businesses display an MVC issued wall license to demonstrate their ability to conduct business. With the availability of new systems, MVC will provide a mechanism for customers to validate the status of such licenses and to obtain information about the operator and other available operators. Given the sophistication and proliferation of technology, this move both combats fraud and provides greater service to the public. Such a system could also support the submission of complaints and allow users better understand resolution options that are available.

Better, Faster Communications with Businesses

MVC routinely communicates with all businesses as part of the licensing, inspection and renewal process. In addition, MVC oversees a number of businesses that will encounter fraud and other unlawful activities. MVC will enhance service to these businesses, increase security and fight fraud by improving communications with licensed businesses. Such communications will include a shift to secure electronic messaging that will significantly increase efficiency and reduce costs.

Enhanced Services to Businesses

MVC's business community regularly participates in many processes that include applying for licenses, submitting information, registering staff and scheduling on-site inspections. In order to reduce the effort necessary on the part of businesses and to increase the efficiency with which service and information can be made available, MVC will use new computer systems to develop on-line facilities that support these processes and reduce the amount of necessary paperwork. Examples may include:

- ▶ On-line license application process supported by paper documents, as necessary
- ▶ On-line status check and email updates
- ▶ Automated insurance verification
- ▶ On-site issuance of operating license – an on-line system could confirm that all requirements have been met. Dealer could print license off the web and system would confirm license status.
- ▶ On-line scheduling of processes – inspections, visits, meetings
- ▶ Better communications of audit and investigation status

Automated Integration with Other State Agencies

MVC regularly shares information with other State Agencies. Often, the MVC licensing process is used to check and enforce other business and individual requirements. As such, the licensing process often must check with and receive confirmation from other agencies. The licensing process is often delayed because these checks are performed manually. By integrating MVC systems with the computer systems of other agencies, MVC can increase efficiency, accuracy, and provide more timely service to its customers.

Enhanced Support for Private Inspection Facilities (PIFs)

MVC's mission includes supporting PIFs and preventing fraud. The current systems do not allow MVC to offer as many modern services to PIFS as is desired and do not allow MVC to track and audit all of the information necessary to identify and fight fraud.

MVC would like to provide a secure facility for authorized PIF representatives to order and manage inspection sticker purchases. In a secure manner, MVC sees significant benefit in offering on-line sticker sales tied to an inventory management and tracking system. Such a system could also provide low stock warnings to PIFs and provide an automatic re-order function. The on-line system could also offer reference materials and a help center to support PIF staff.

Support for Municipalities

MVC's mission includes working with municipalities and coordinating the use of emergency lights on authorized vehicles. This process requires a significant amount of paperwork and the participation of many parties. MVC could provide emergency related operations and municipal leadership with the secure tools to register operators of emergency lights. The efficiency, timeliness, and accuracy of the process could be significantly improved.

4.2 Driver History

Functional Overview

MVC functions that have been grouped into the category of Driver History include those that deal with a driver's performance, insurance problems and other situations relating to suspension and restoration of the driving privilege and associated fines. Driver History also includes the tracking of events related to the use of a business licenses.

Specific functions include:

- ▶ **Driver History Maintenance** – Acting on violations which trigger scheduled suspensions and other events that become part of a driver's history and may result in suspensions, hearings, fees due, school assignments and restorations.
- ▶ **Physical and Medical Qualification Reviews** – The process of receiving and reviewing medical information from doctors to determine the fitness and eligibility of drivers. Some reviews are procedural and part of every application while others are mandated because of special conditions.
- ▶ **Business History Maintenance** – Similar to the tracking of a driver's driving history, MVC also tracks and manages the history of events related to a business's operation

including violations and other actions that may result in suspensions, hearings, fees due, and restorations of operating privilege.

- ▶ **Driver Education & Improvement** – Remedial actions, fee collection, assignment and scheduling to classroom programs for novice and experienced drivers and commercial vehicle operators. Attendance is typically mandated as a condition of restoration after serious violations and suspension.
- ▶ **Insurance, Uninsured Motorist & Insurance Company Management** – MVC tracks the insurance coverage of all motorists through the exchange of information with insurance companies and vehicle owners. Owners with registered vehicles who do not have coverage are subject to action including fines and MVC will initiate a case to resolve the situation.
- ▶ **Surcharge Administration** – Drivers with poor driving records are subject to a surcharge. The process of tracking violation, determining, administering and collecting fees is managed by MVC.
- ▶ **MDR (Multiple Driver Resolution)** – Cases where driving records have become split over multiple “driver licenses” must be resolved through review of each record. Such situations are typically the result of fraudulent misrepresentation and occasionally due to improper or mistaken paperwork and applications.
- ▶ **Maintain Accident Record Information** – MVC maintains records for all accidents. This data is received from the Department of Transportation. Accidents are reviewed and depending upon the severity and nature of the accident MVC will initiate action or create a case to resolve necessary situations.
- ▶ **General Functions** – The above operations are supported by general functions. These general functions are consistent across all operations and include:
 - Fee Collection
 - Scheduling
 - Interaction Tracking (correspondence, voice, email, etc)
 - Case Management

Overview of Business Vision

MVC has a number of objectives and approaches for improving the driver history and event management process. These improvements will leverage new technologies and include enhancements to the business process.

Enhanced Event Monitoring and Triggers

MVC must continually watch for poor driving activities and enforce applicable statutes. Additionally, proper enforcement is critical to public safety. The current statutes, new legislation, and administrative judgment result in a set of rules and conditions that must be applied to driving events and acted on. These rules and conditions frequently change over time and must be implemented quickly and in a maintainable manner. The new MATRX system must be able to monitor Driver History events and, as appropriate, the system should take necessary actions. The system must be flexible so that it can support standard enforcement rules and actions and be easily updated to support new rules.

The system should be able to initiate or schedule suspension and restoration actions and alert MVC staff as necessary.

In addition to tracking violations and accumulated events that may require action, the system should also support rules that watch for suspicious activity. Such events may include continuous change of address or duplicate license requests. A system that can document appropriate rules and trigger notification to the appropriate MVC party could significantly enhance both fraud detection and public safety.

Improved Contact Management

MVC's ability to service customers and conduct business is dependant upon the ability to have correct contact information for all parties. In many cases, routine processes and services break down because of inaccurate address information. While some parties will conscientiously inform MVC of an address change others do not. MVC seeks to provide additional services to facilitate easy update of address information while balancing security and fraud concerns.

MVC will implement a secure facility for customers to implement address changes including an on-line function. In addition, MVC will develop a system for tracking and collecting address change information. Sources will include the U.S. Post Office and other agencies or systems as appropriate. This will allow MVC to track customers and verify changes with their approval. The resulting system will provide MVC will more accurate information and allow business to continue – ranging from common renewals of licenses and registrations to regulation enforcement.

The system will also provide mechanisms for validating and standardizing addresses and for identify fraud where appropriate. This system will also be linked to MVC's printing and production facilities. Any returned mail will be quickly scanned and recognized so that the contact database can be updated. Moving forward, the system will not only track U.S. Postal addresses but will maintain email and telephone information in the same manner if provided by the customer.

Total Chronology Analysis & Reporting

MVC can better manage a driver, case or situation when they can see all MVC activity relating to a particular driver or legal entity. MVC staff needs an easy access chronological view across all of a legal entity's history and actions. The system should access all appropriate areas of the MVC system and prepare a chronology of all events that could be sorted and filtered.

Events to be included are:

- Driver History Events
- Vehicle Registration Events
- Correspondence, phone calls and other interactions
- Visit to agencies
- Hearings and other meetings
- Information should include location
- License Types and related privileges

On-Line Doctor Certification

Doctor certifications for drivers are typically required for many types of commercial licenses and in other special cases. MVC can significantly increase efficiency and improve customer service if this process is automated. MVC currently receives all certification in a paper format. Moving forward, MVC will work with all parties to develop a system where doctors can securely submit on-line medical certification.

This on-line certification process could be used to support CDL applications, handicap applications for placards and special plates.

The MVC Medical Advisory Panel could access records and provide feedback electronically which would significantly improve efficiency and turnaround.

Easy Guidance and Restoration Wizard

MVC knows that many drivers want a simple, accurate and consistent answer to one question: “How do I get my driving privileges restored?” Often the complexities of the statutes and process can be overwhelming. MVC envisions developing a component to the new system that will, in a secure manner, provide drivers with an analysis of their driving record and document the steps and conditions necessary to have a driving privilege restored. The system will have to review the driving history and status and answer questions such as these for the customer:

- ▶ What payments are necessary?
- ▶ What remedial actions are necessary?
- ▶ What other actions are necessary?
- ▶ What processing steps are necessary?
- ▶ What is the deadline for action?

The system should provide this information to MVC staff and to drivers as part of an on-line system. Once this information is provided, the system will record the information that was determined. This system should provide value to customers as well as MVC staff.

On-Line Information Center for Customers

Many of MVC’s customers interact very infrequently with MVC, needing only to renew a vehicle registration and periodically renew a driver’s license. A much smaller portion of the population deal with MVC much more frequently because of poor driving records, to satisfy commercial driving requirements, or for other reasons. Modern tools for managing these situations would significantly benefit both MVC and the customers. MVC envisions developing an on-line, 24-hour customer information center where a customer could securely log-in and access a variety of information. Information and services would include:

- ▶ Restoration Instructions for the driver’s specific situation
- ▶ Electronic assistant to answer questions about hearings, suspensions, surcharges, fee payments, etc.
- ▶ Current status of driving privileges

- ▶ Current status of case information
- ▶ Customer hearing requests (currently has to be in writing)
- ▶ Access to correspondence
- ▶ Payment System including fees, surcharges and payment refund requests
- ▶ Scheduling for driver testing, hearings, road tests, inspections, etc.
- ▶ Instructions for general procedures

On-Line Information Center for Businesses

Insurances & transportation companies need a comprehensive access point for service and information. MVC envisions an on-line information center that could serve business needs and automate many manual processes. While many types of businesses have regular interaction with MVC and could also use the information center, insurance and transportation companies have specific needs and must participate in processes unique to their business. Some of the services available would include:

- ▶ Check status of employees' driving privileges
- ▶ Submit driver information as required for transportation companies
- ▶ Submit driver medical information (employee/doctor submission)
- ▶ Submit school bus inspection information
- ▶ Commercial Driver Notification for Employers
- ▶ On-Line Payment System for fees and fines.

MVC could also implement a valuable new service that would notify employers when employee drivers receive violations are their record. While employees are typically required to report such relevant information, this service could automate the process and facilitate necessary action.

Enhanced Interface with Courts

While MVC currently receives daily updates from the courts, a real-time system would allow MVC system to quickly provide up-to-date information to customers. In addition, if the system is going to provide real-time guidance to customers and staff, up-to-date information improves the quality of the service. Updated data would include:

- ▶ Real-time updating of dispositions from ATS to MVC of all cases adjudicated in the municipal courts.
- ▶ Real-time updating of MVC records for court ordered license suspensions.

In addition, allowing the courts to collect the requisite MVC restoration fee would significantly minimize the burden on customers allowing them to conclude their business while visiting one less location.

4.3 Driver Licensing

Functional Overview

MVC's Driver Licensing operation oversees the core processes of identifying individuals, testing them and granting personal and commercial driving privileges. Primary functions include:

- ▶ **License & Maintain Driving Privileges** – MVC must track all required information for applicants and the requirements of the driving privileges for which they are applying. Transactions necessary to change and renew those privileges are also supported.
- ▶ **Customer Communications** – MVC frequently communicates with customers and must track all interactions with customers. Communications include letters, emails, faxes and voice conversations.
- ▶ **Driver Testing & Requirements Tracking** – All drivers must apply for driving privileges and the system must track their progress in meeting the requirements which will include knowledge tests, skill tests, physical requirements, and background checks. MVC staff must also schedule drivers for various tests.
- ▶ **Financial Management** – The licensing process includes multiple aspects of financial management include the collection of fees, end of day reconciliation, and preparation of a daily deposit.
- ▶ **Issuance of DDL/Secure Document** – As part of the licensing process, all drivers are issued a Digitized Driver License. MVC has developed a secure identification document and the system which produces the document must be linked to new system.
- ▶ **Enforcement of Security Procedures** – Proper identification of all drivers and customers is critical given the importance of the driver license as the preferred form of identification. MVC has developed and implemented a 6-Point identification process that requires various forms of identification for a customer to prove their identity and allow them to be issued a New Jersey Drivers License.

Overview of Business Vision

MVC has a number of objectives and approaches for improving the driver licensing process. These improvements will leverage new technologies and include enhancements to the business process.

Enhance Monitoring for Suspicious Activity

As MVC continues to fight fraud and protect the public, the new system must watch for suspicious activities on the part of all applicants, drivers and companies associated with those individuals. It must also make more information available to the clerk so that the complete situation can be evaluated and acted upon. Examples of activities that would be tracked would include

- ▶ Visit to multiple agencies on the same day
- ▶ Lack of sufficient ID documents
- ▶ Unusual volume of activity

As the system audits and track actions, it should also give staff the ability to flag individuals considered related to such activities.

MVC needs to develop a process for capturing and noting information and photos of applicants who commit fraud ID attempts.

Secure Permit Process and Document

MVC's paper learner's permit is obviously not as secure as the Digitized Driver's License. MVC recognizes that the security of the process can be enhanced by introducing the photo capture step early into the learner's permit process, ideally, as soon as the individual is registered in the system and at least before the skill test.

A secure photo-based permit would allow law enforcement and testing staff to more easily identify the driver, whether they are taking a test or driving on the public roads. Additionally, the new system should provide greater ability to check the status of a learner's permits and more control over the learner's privileges.

Internet Based Knowledge Tests

MVC continually looks for new opportunities to conduct knowledge tests efficiently and securely. In the past years, third parties including driving schools and public schools have been authorized to administer knowledge tests. Knowledge tests conducted outside of an MVC facility are not automated and more difficult to audit. MVC sees an opportunity to automate these tests using an Internet based testing system. Such a system would have many advantages.

- ▶ Tests could randomize questions to enhance authenticity
- ▶ Test statistics could include time to complete
- ▶ Tests could be coordinated with Computer Based Instruction that incorporates test questions and other mechanisms for ensuring that the material was reviewed.
- ▶ Test proctor should sign off on test
- ▶ Results would be automatically scored and analyzed

Automated Verification of Supplied Data

MVC needs to verify documents and data that are supplied as part of the 6-point process and other privilege requirements. As an Information Authority, MVC needs to make every effort to ensure that the data it receives is valid. In addition, data that is incorrect or fraudulent is often an indicator of unlawful activity.

The approaches for validating data will range from automated interfaces between the computer systems of government agencies to automated generation of letters to small authorities that request a confirmation via paper on on-line form. Sources to check include:

- ▶ Vital Statistics for Birth Certificate and Death Certificate information
- ▶ Passport Verification
- ▶ Immigration Lookup
- ▶ Fingerprint verification – interface with police
- ▶ Other States' Driver Licenses
- ▶ Periodic checks against SSA (for deceased drivers)

Scan Important Customer Documents

In many cases, customers provide important documentation that is part of the 6-Point Identification process or in support of other transactions. These processes need the support of document scanning to improve reliability and deter fraud. Better

documentation would improve auditability and allow MVC to verify the validity of documents post issuance. MVC would have the address, picture and driver license number of any individual who was found to have committed fraud once documents are verified.

As a design consideration, document scanning must be completed quickly and efficiently and not significantly impact the time to process. MVC envisions that most every workstation at the agencies and regional service centers would have dedicated or quick access to scanning resources and the resulting scans would automatically be linked to the individual and transaction.

On-Line Doctor Certification & Automated Business Processes

As described in the Driver History business vision, it is important to automate the submission of certifications by doctors. These are part of many licensing procedures. These procedures can also be part of larger processes and workflows. For example, when a driver submits an on-line application for handicapped placards and special plates, the system could allow them to specify a doctor who could provide the certification on-line. Alternately, the driver could provide the application or case number from the on-line application and allow the doctor to sign-on with secure credentials and provide the required medical certifications.

Automated Submission of Bus Driver Information

Bus companies are required to submit and maintain driver information. MVC envisions better supporting this process with improved accuracy and reduced paperwork by providing an automated system for transportation companies to submit and maintain driver information. An automated system could:

- ▶ Eliminate paperwork for MVC
- ▶ Increase the auditability and accuracy of required data
- ▶ Provide better information for bus companies
- ▶ Improve safety by keeping un-safe drivers out of commercial driving positions.

Bus companies and school districts could enter information on an on-line system that was integrated with MVC's database, rules engine and on-line interfaces with other authorities.

On-line Information Center for Drivers

As described in the Driver History vision, a complete, secure system for drivers to access general information and information specific to their license would support many types of transactions and allow customers to better maintain their own account and manage their privileges. Features would include:

- ▶ Commercial manuals, available endorsements
- ▶ Instructions for procedures
- ▶ Electronic assistant to answer questions about upgrades, downgrades, available actions and the requirements of each
- ▶ Interactive tutorials for driving knowledge
- ▶ Current status of driving privileges

4.4 Financial Management

Functional Overview

MVC's Financial Operations staff is responsible for properly accounting for funds and accurately determining the Commission's financial position. Primary function must be supported by MVC's new computers systems. Those functions are:

- ▶ **Financial Accounting** including the tracking of all income and expenses. Activities include:
 - Allocation and tracking of fees, fines and surcharges
 - Disbursement of funds collected on behalf of other agencies back to their home agency with sufficient information to be properly allocated
 - Receipt of funds collected on MVC's behalf by other agencies and their proper internal allocation
 - Vendor payables and receivables management
- ▶ **Analysis, Budgeting & Forecasting** activities and making available the tools necessary for various staff to analyze and understand MVC financials on a regular and ad-hoc basis
- ▶ **Capital Expenditure Management** including the tracking of capital equipment life, depreciation & salvage value and the financial management of real estate and program capitalization.
- ▶ **Grant & Bond Management** including expense identification and categorization, capitol resource tracking and expense reimbursement.

Overview of Business Vision

MVC conversion to an autonomous agency includes goals for strong financial management. MVC requires systems that provide the flexibility needed to capture, allocate, report and audit for an ever changing environment. This includes:

- ▶ Properly allocate all revenue and expenses relating to MVC in an automated fashion
- ▶ Provide accurate, timely data to operational and commission management
- ▶ Transfer all data & funds we collect on behalf of other agencies in an automated fashion
- ▶ Receive all data & funds collected on our behalf from other agencies in an automated fashion and be able to properly allocate the data
- ▶ Reduce financial closing timeline to 3 days
- ▶ Provide consistent, simple operational analysis, forecasting and budgeting

MVC systems will implement a full suite of financial functionality including:

- ▶ General Ledger
- ▶ Accounts Payable and Accounts Receivable
- ▶ Ad-hoc and Standard Reporting
- ▶ Budgeting and Forecasting

► Point-of-Service “Cash Register” system

MVC’s plan for financial systems includes using technology to enhance financial processes.

Automated Interfaces

MVC will automate all possible transactions to speed & simplify funds collection. As new systems are implemented, no fee-based transactions will be handled with a manual process. Each should have an internal transaction type identifying its revenue or expense allocation and reporting categories.

Automatic allocation of incoming funds will allow for more accurate and efficient distribution of funds. Each transaction will be allocated so that it can be mapped to multiple management views including MVC Financial, MVC Operational and OMB Budgetary views.

Additionally, MVC will automate the collection and transfer of funds we collect on behalf of other agencies. The systems need the ability to manage and track payments that cross operational and other agency boundaries. Examples include:

- Sales Tax Collection
- Special Plates – Partial payments to assigned interests
- Alcohol countermeasure – Health Department
- Marine – State Police
- Commercial Vehicle Enforcement Fees
- IRP Fees
- IFTA

Reduce Month End Closing Cycle

MVC envisions that the use of automated transaction processing and newer systems will allow it to close monthly account records in as little as three days, which will be a substantial improvement over the current process.

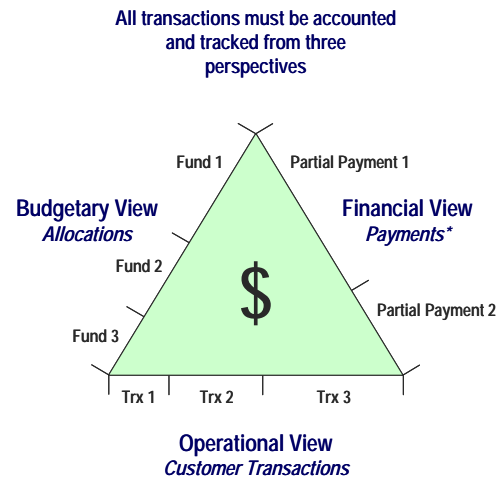
Improved Analytical Tools

With a consistent database for financial information, MVC will establish a new suite of reporting, analysis and budgeting tools. These tools will enhance the ability of staff to assess and plan MVC financial operations.

Consolidated Management of Customer Receivables

MVC needs standard Accounts Receivable and Account Management functionality that covers a business customer across any MVC business area. Benefits and new services will include:

- **Pre-payment accounts** – Businesses should be able to pre-pay or pay via credit or debit cards to pay for repetitive services such as driver abstract requests.



- ▶ **Penalty tracking** – MVC Operational groups should be able to track all fees and fines of a business or individual.
- ▶ **Vendor Multi-Purpose Payment Accounts** – Customers would benefit from a single MVC account, not individual accounts with each MVC operational unit as we have now.

4.5 Vehicle Title & Registration

Functional Overview

One of MVC's primary functions is the oversight of motor vehicles operating on the roads. This includes titling, registration and inspection of these vehicles. Vehicles include cars, trucks, motorcycles and busses as well as boats and trailers. The MVC regularly works with and serves individual owners and businesses including those in construction, leasing and transportation functions. Primary functions include:

- ▶ **Issue & Maintain Titles** – This includes all operations and transactions associated with creating, updating, transferring and changing the status of a vehicle Title of ownership.
 - Duplicate and Replacement Title
 - Add Spouse to Title or Transfer Title
 - Manage Lease Information
 - Manage Lien Information
 - Supporting Car Dealer Reassignment and Transactions
 - Security Stops and Investigations
 - Salvage & Junk Title
 - Maintain Historical Records and provide certified copies to interested parties
- ▶ **Issue & Maintain Registrations** – Any vehicle which is operated on the public infrastructure must be registered with MVC. Upon registration a document is issued and license plates are provided that are attached to the vehicle. Some license plates are not assigned to a specific car if they are registered to a car dealership for the purposes of demonstrating and selling cars. The following functions are typical:
 - Update Registration Codes and Weight Information
 - Duplicate and Replacement Registration
 - Registration Transfer
 - Replace Plates
 - Temporary Registration
 - Specialty & Personalized Plate Management
 - Tracking of Insurance Information
- ▶ **Track Inspection Information** – Any vehicle on the public roads must be inspected regularly. Different types of vehicles have different cycles. The MVC conducts inspections of many commercial vehicles including busses and heavy duty diesel trucks. Inspections are conducted for personal vehicles through state inspection facilities and private inspection facilities. Inspection activities include:
 - Track Inspection Cycle & Requirements
 - Track & Collect Inspection Data

- Track Inspection Completion
- Enforce Inspection Completion (No notification process implemented)
- Conduct Inspections (Specialty Vehicle, Commercial Bus, School Bus, ...)
- HDD Inspections (roadside & annual)
- Evaluation Roadside Inspections
- ▶ **IRP – International Registration Plan** – The International Registration Plan (IRP) is a U.S.-based plan that allows for the distribution of registration fees for commercial motor vehicles traveling inter-jurisdictionally through member states and provinces. MVC is responsible for managing the participation of all NJ registered vehicles. Activities and responsibilities include:
 - Registrant only process where title held by another entity.
 - Jurisdiction Tracking by State
 - Weight Limits by State
 - Issue Cab Cards
 - Issue IRP plates & stickers
 - Mileage Tracking
 - Maintenance of Registration Codes
 - Revenue collection and distribution
 - Temporary Trip Permits to states not identified for trip
- ▶ **General Functions** – The above operations are supported by general functions. These general functions are consistent across all operations and include:
 - Fee & Sales Tax Collection
 - Scheduling
 - Interaction Tracking (correspondence, voice, email, etc)
 - Case Management
 - Support Dealers & Dealer Support Businesses
 - Reporting and Analysis
 - Inventory Control
 - Special Plate and Specialty Plate Management

Overview of Business Vision

MVC has a number of objectives and approaches for improving the vehicle management process. These improvements will leverage new technologies and include enhancements to the business process.

Enhancement to Temporary Registration Process

New cars and other vehicles are often issued a temporary registration and temporary plate. The current process does not sufficiently track the issuance of these documents which can partially inhibit law enforcement and other activities. A new system and process will improve the process to provide a very high degree of tacking and auditability. Enhancements may include:

- ▶ Upgrade tracking and possibly eliminate pre-printed temporary plates & registrations.
- ▶ Dealers may process temporary registrations on-line and print a temporary plate & registration for the buyer.
- ▶ Payments could be pre-paid or other options.

- ▶ Prevention or tracking of multiple temporary registrations for the same vehicle

Title and Lien Improvements

Titles are the foundation for managing vehicles. MVC envisions leveraging all external systems and new technologies to enhance the titling process and improve efficiency and service and fight fraud. Through the use of new systems and processes, enhancements will include:

- ▶ Conversion to Electronic Liens
 - Electronic lien checks better prevent issuance of titles when a lien exists
 - Paperless title – Paper titles will not be generated until a lien is cleared.
 - On-Line release of lien by lien holders when a loan is paid-off.
- ▶ Enhanced Background Checks for Titles to fight fraud. Automated check could include:
 - NJ MVC vehicle & title history
 - NCIC
 - NICB
 - NMVTIS
 - Third Party Data Aggregators – when supplemental research is necessary.
- ▶ Pre-Process of Transactions by Dealers – would improve efficiency, reduce delays and assist with accuracy
- ▶ Title Transfer Tracking Improvements – Use system rules to enforce the tacking and issuance of new titles include the requirement that old titles are received and fully processed. Information from other state titling processes would also be included in our tracking database.

Privilege Management

A small number of businesses do not comply with MVC and other state regulations. These situations require a significant amount of effort on the part of MVC staff. MVC staff needs a system that can better track, manage, and block a legal entities privilege to register vehicles.

- ▶ Companies or individuals that don't pay fees (or for other reasons) will have their "Register Vehicle" privilege suspended or blocked.
- ▶ Track privileges of principals across multiple businesses to prevent abuse as they attempt to hide behind different business operations.

Registration Process Improvements

MVC envisions enhancements to the current registration document. A primary upgrade includes the inclusion of more information which may require a redesign of the document. Additional information may include:

- ▶ Addition of more than one name.
- ▶ System tracking of legal owner and registered operator. This information specifically applies to vehicle that are leased and commercial vehicles that are operated by a commercial driver but owned by another entity.

MVC envision supporting variable registration periods. This has already been implemented with certain leased vehicles. This service would require mechanisms to

capture insurance information which is typically captured during registration renewal. Considerations include:

- ▶ Variable periods by month, not less than one year generally
- ▶ IRP variations limited to federal regulations
- ▶ “Equity” in the registration could be transferred to a new registration, even personal to commercial.

As the new system is developed, MVC envisions a tighter linkage between commercial motor carrier systems that support IFTA and IRP programs for information validation and sharing.

Leasing Improvements

The leasing of vehicles has become increasingly popular and the volume of registration transactions associated with leasing companies and lessees has significantly increased. Enhancement to the support of leased vehicles will likely include the following items.

- ▶ Allow leasing companies to maintain fleet & lease information on-line. This system would allow companies to authorize operator/registrant information for registration purposes. They could also view plate information for vehicles they own but are registered to a lessee/operator. This would significantly assist these companies and reduce paperwork for MVC when violations are issued against the vehicle.
- ▶ Expanded tracking of vehicle owner and registered operator. The system must track both legal entities and direct appropriate documents and processes to each as some are important to the vehicle owner and some are related to the registered operator and driver. Registration documents must accommodate information for the owner and operator.
- ▶ As appropriate, registered operators could be responsible for violations if only vehicle information is available. This is often the case with parking violation, ez-pass violation, and traffic camera captured violations. Currently, these violations are sent to the leasing company, not the operator or lessee.

The approach that separates the vehicle owner from the registered operator is implemented for commercial vehicles in the IRP program. In many cases, violations or disregard for state regulations may result in a suspension of registration privileges. These enforcement efforts can be more accurately applied to system that distinguishes the two entities.

Inspection Management System

MVC conducts many types of inspections on vehicles and this process is currently manual in some areas. MVC envisions a new system would include features to better track and manage inspections, compliance and fee collection. Features of this subsystem would allow MVC staff to:

- ▶ Track Inspection Cycles & Requirements
- ▶ Track & Collect Inspection Data
- ▶ Track & Enforce Inspection Completion
- ▶ Support Specialty, Evaluation & Heavy Duty Diesel Inspections

- ▶ Inspection Sticker Management
- ▶ General Reporting

Enhance Monitoring for Suspicious Activity

As MVC continues to fight fraud and protect the public, the new system must watch for suspicious activities on the part of all owners and registrants. It must also make more information available to the clerk so that the complete situation can be evaluated and acted upon. Examples of activities that would be tracked would include

- ▶ Titles moving quickly back into the state
- ▶ Titles going to charities with out-of-state re-assignment
- ▶ Individuals appearing to act as dealers
- ▶ Multiple duplicate titles and re-assignments on the same vehicle
- ▶ Multiple duplicate handicap placards

As the system audits and track actions, it should also give staff the ability to flag individuals considered related to such activities.

On-line Information Center for Vehicle Owners

As described in the other vision sections, a complete, secure system for drivers/owners to access general information and information specific to their license or vehicle would support many types of transactions and allow customers to better maintain their own account and manage their title and registrations. Features would include:

- ▶ Vehicle Registration renewal
- ▶ Print e-ticket for inspection
- ▶ Notify MVC of car sale
- ▶ Let insurance companies update flood status, and other appropriate information for a vehicle that affects the title.
- ▶ Access to view applicable fee tables
- ▶ Advisory notices
- ▶ Electronic assistant to answer questions about fees, processes, etc.
- ▶ Current status of vehicle registration, title and other information
- ▶ Access to correspondence
- ▶ Filing for salvage inspection
- ▶ On-line Payment System capabilities and ability to file for refunds as appropriate
- ▶ Should be able to pay fees on-line;
- ▶ Scheduling for inspections and other activities.

Fleet Management

MVC requires apply to all entities, small and large. Large companies in the state have a unique challenge in that they must register and track a significant number of vehicles and participate in all required MVC processes. It is to the company's and the state's advantage that the process is proper facilitated and conducted in an accurate and timely manner. MVC sees benefit in providing businesses with a system that would support that goal. Some of the features that this system could offer include:

- ▶ Schedule and Track Inspections
- ▶ Pay Fees and manage payments
- ▶ Update vehicle status
- ▶ Address & location maintenance
- ▶ Such as system would maintain historical information and be subject to audit controls.

4.6 ***Third Party Information Sharing***

Functional Overview

Any information managed by MVC is typically of interest to and requested by some public or private sector entity. Requests come in the form of single queries, bulk transfers of data or summarized analysis and may come from any entity to serve a variety of purposes.

Request Types

Requests are of the following types.

- ▶ Public Sector Share & Support Requests – MVC continually shares information with the public sector to support their mission. Most of these requests are supported by system-to-system interfaces. MVC does not necessarily limit or typically charge a fee for such access. Typical requestors include law enforcement, public services, other states' DMVs.
- ▶ Routine/Regular Requests – MVC maintains authorized relationships with third parties allowing them to query MVC data in a controlled manner for a specific business purpose. This is typically done for private sector business for a fee. Customers include:
 - Insurance Companies validating driving privileges,
 - Data Aggregators fulfilling the needs of their customers,
 - Transportation Companies checking on the qualifications of their drivers
- ▶ Special Requests – MVC fulfills a significant number of special requests by organizations that may need detail or summary information. Requests may or may not be processed for a fee. Requestors include:
 - Research
 - Legislative Support
 - Legal Support
 - Vehicle Recalls
 - Investigations

Request Management Functions

Any request that is made of MVC for information is handled by a process that evaluates the requestor and the nature of the request. The primary functions are as follows:

- ▶ Registration of Legal Entities requesting access to data including managing profile information, customer list and confirmation of business registration.
- ▶ Review and authorization of requesting parties

- ▶ Review and authorization of each information request
- ▶ Evaluate cost of information preparation so appropriate fees can be charged
- ▶ Audit of information requestors and brokers including periodic reviews and covert audits
- ▶ Collection of fees
- ▶ Monitoring of information access and usage patterns

Evaluation of Information Requests

Every request for information must be reviewed and approved. Considerations include the following.

- ▶ What is the nature of the request
 - What type of information (Driver History, Licensed Privileges, Address Info.)?
 - How much history is requested (1 year, 3 years, 10 years)?
 - What volume of information (1 record, 1000 records, 1M records)?
 - What is the purpose of the information (Insurance Verification, Solicitations)?
 - Is the information in summary or detailed form?
 - One-time request or continual access – and for how long?
- ▶ Who is requesting it
 - What is the business of the requestor?
 - What is the background of the requestor?
 - What is the background of the business principals?
 - What businesses are partners with the requesting business?
 - Who are the customers of the business?
- ▶ What reasonable privacy concerns need to be enforced?
 - MVC is committed to respecting the privacy of individuals and businesses and information that is not necessary or appropriate will not be made available.

Overview of Business Vision

MVC has a number of objectives and approaches for improving the sharing of information with third parties. These improvements will leverage new technologies and include enhancements to the business process.

Enhanced Audit Tools

MVC manages an every increasing need to evaluate, audit and manage information requestors. MVC envisions that a new computer system would provide enhanced auditing and management tools.

- ▶ Query and access logging – Access to MVC records will be tracked by user and time including internal staff and outside requestors.
- ▶ Request logging and response tracking – All queries will be tracked including the information requested and the records provided. This tracking will apply to single queries and batch transactions.
- ▶ Review Tools – The new systems should provide tracking mechanism and alert triggers to support covert and other audit procedures

Requestor On-line Portal

MVC envisions an on-line portal for authorized information requestors. This would standardize the service and enforcement of policy and procedures. The portal will be easy-to-use and support the entire process of information sharing. The system must be implemented using a low maintenance technology that will be easy for customers to implement and support in their own operations. This will minimize the support required by MVC staff. Every user will require a unique user ID, even if they are from the same organization.

Primary Functions available on the portal will include

- ▶ Information Requestor Application & Registration
- ▶ Submit Information Requests & Check Approval Status
- ▶ View Access Privileges
- ▶ Management of user IDs
- ▶ Submit single and batch queries
- ▶ Report Printing Capabilities
- ▶ Transaction Log and Fee Charge Log
- ▶ Payment Facilities
- ▶ On-Line Help

Automated Workflow & Approval Process for Information Retrieval

The process of approving requestors and approving individual requests needs to be further automated. Both processes include a number of steps, approvals by different operations and other checks. The process could be completed more quickly and thoroughly with automated workflow. The new system would include the following capabilities.

- ▶ Integration with Requestor On-line Portal so that applicants could apply on-line and additional data entry is eliminated
- ▶ Background checks could be partially automated
- ▶ Business licenses checks with other agencies could be automated
- ▶ Submission, collection and review of information and documents could be automated
- ▶ Approval notifications and requests would be routed to appropriate staff electronically for approval.

Improved Access for Public Sector Partners

MVC envisions a new level of support for public sector partners by implementing flexible interfaces that provide secure information access. Better interfaces and access to authorized partners and systems will provide better service and reduce our manual support efforts. Access to information will be limited to each agencies needs.

5. MVC Use Cases

As described, the MATRX system will consist of multiple subsystems that interact together providing numerous coordinated functions. The following sections describe functions (use cases) which must be available in the new system. They may be implemented through the support of one or more subsystems.

5.1 Customer Information Management

- ▶ **Legal Entity ID (LEID) Management** – The system must assign, track, and support the unique identification of each business or individual with a Legal Entity ID number.
- ▶ **Status Tracking** – The system must track all status flags associated with a customer/legal entity in the system.
- ▶ **Preliminary Legal Entity Creation** – The system must allow an application to be processed and stored in a temporary state before finalizing an LEID. This will allow data to be collected while all checks are being completed.
- ▶ **Individual Profile** – create and update information related to an individual.
- ▶ **Business Profile** – create and update information related to a business.
- ▶ **Contact Information Management** – create and update addresses, phone numbers, and emails.
- ▶ **Financial Profile** – create and update financial information, returned checks, etc. about a customer.
- ▶ **Partner Profile** – create and update information related to a business or government entities relationship with MVC.
- ▶ **Business Location Profile** – create and update all business locations for a business.
- ▶ **Business Staff Tracking** – create and update principals, operators, instructors and other individuals that are linked to a business.
- ▶ **Individual AKA Management** – tracks AKA or aliases for an individual.
- ▶ **Identification & Verification Tracking** – tracks all documents presented by a customer to identify themselves and the verification steps performed by other subsystems, includes scanning of documents at an appropriate phase.
- ▶ **Code Maintenance** – maintenance screens for setting of codes, lookup tables and other parameters that affect the system.
- ▶ **Multiple LEID Resolution** – ability to merge two or more profiles together when they represent the same entity. Identifying tags must be kept so that the profiles can be unmerged.
- ▶ **Reporting** – ability to create reports and analyze information in the Customer Profile system.
- ▶ **Search** – ability to find a customer by presenting various unique identifiers or non-unique data. Data may be supplied by keyboard entry or other input mechanisms.
- ▶ **Address Relationship Finder** – allows user to find other legal entities at the same address.

- ▶ **Address linkage to OIT** – allows system to link customer supplied address information to OIT master address database for reference and cleanup.
- ▶ **History Log** – Any profile information that is updated will be recorded in a history log for the legal entity. Some information in the customer profile can be updated upon the proper request of the customer while other updates require a service charge and are considered a transaction.
- ▶ **Accept Scanned Documents** – All documents submitted by a business or individual must be capable of being identified and scanned into the MATRX system for reference in the future.
- ▶ **Transaction Log of all Updates** – The system must log all transactions including no-fee transactions and note the changes that were made to any data in the system
- ▶ **Printing** – The system must be able to print appropriate forms and documents that are used in the system based upon a standard set of templates that can be created
- ▶ **Legal Entity Customer Tracker** – Allows MVC staff to enter and track the customers of a Business Legal Entity. Used specifically for Third Party Information Sharing customers
- ▶ **Legal Entity Creation Supporting Submitted Privilege Application** – Allows a customer on-line or an MVC staff member to submit and application for a privilege and have a Legal Entity created or linked to the privilege request. System must check for duplicates or existing records.
- ▶ **Automated Background Checks** – Allows the system to collect information from on-line authorities and verify appropriate status or lack of violation or relevant incident. Example organizations would include AAMVA, U.S. Immigration, NCIC, SSA, etc.
- ▶ **Automated State Agency Certifications** – Allows the system to collect information from other state agencies that need to approve or sign-off on a particular business. May include clearance for child support payments, taxes, business registrations, etc. The Agency may provide an automated system response or need to manually enter data into the system or interface.

5.2 Customer Interaction Management

- ▶ **Log Phone Call** – date, time, user stamps, text for notes, link to follow-up actions.
- ▶ **Log Incoming Correspondence** – email, fax or document sent to MVC from customer must be logged, acknowledge and categorized and may be linked to or trigger follow up actions or be reviewed for meeting requirements. Links to document management system.
- ▶ **Log Outgoing Correspondence** – email, fax or document sent by MVC to customer must be logged, categorized and may trigger follow up actions or be reviewed for meeting requirements or fulfilling Follow-up Actions. Links to document management system.
- ▶ **Manage Follow up Actions** – Create or edit “to do” items, assigned user or group, date due, status.
- ▶ **Review & Sort Log** – Allow user to sort and view Interaction Log.

- ▶ **Create Log Report** – Allow user to create a stand-alone formatted document that includes the contents or filtered and sorted contents of the Interaction Log.

5.3 Case Management

- ▶ **Create Case** – A case is created to document and follow a particular situation to resolution. Specify Legal Entities, Privileges and Vehicles that are linked to the case. Document the purpose and type of case, due dates, persons or groups assigned, priorities, etc.
- ▶ **Update and Close Case** – manage the status of a case and close when all conditions are met.
- ▶ **Log Incoming Correspondence** – email, fax or document sent to MVC from customer must be logged, acknowledge and categorized and may trigger follow up actions or be reviewed for meeting requirements. Links to document management system.
- ▶ **Log Outgoing Correspondence** – email, fax or document sent by MVC to customer must be logged, categorized and may trigger follow up actions or be reviewed for meeting requirements or fulfilling Follow-up Actions. Links to document management system.
- ▶ **Log Decisions** – decisions made by State representatives including MVC, Courts, other.
- ▶ **Log Privilege Actions** – actions taken by MVC to suspend, restore, or otherwise modify privileges, points, etc.
- ▶ **Manage Follow up Actions** – Create or edit “to do” items, assigned user or group, date due, status.
- ▶ **Review & Sort Case History** – Allow user to sort and view Case History.
- ▶ **Create Log Report** – Allow user to create a stand-alone formatted document that includes the contents or filtered and sorted contents of the Case History.
- ▶ **Case Management Reporting** – Reports must be generated that allow the MVC to manage cases include reports on case that are outstanding, resolved, sorted by age, topic, category, staff assignment, etc.

5.4 Privilege Manager

The privilege manager processes all transactions associated with the granting of privileges include personal and commercial driving privileges and business privileges.

- ▶ **Manage Privileges** – Names, Codes, Available combinations, possible Restrictions and endorsements
- ▶ **Manage Privilege Requirements** – Create, update or delete the requirements for a particular privilege or endorsement. May include skill tests, knowledge tests, physical test, inspections, fees, background checks, audits, or other.
- ▶ **Manage Privilege Request** – Create, update or delete official request or application by Legal Entity for a particular privileged or endorsement.

- ▶ **Check Privilege Requirements Met** – Check that a particular Legal Entity has met all of the requirements for a privilege.
- ▶ **Identify Available Privileges** – identify all privileges for which a Legal Entity has met the requirements.
- ▶ **Identify Missing Requirements** – Identify the requirements that need to be met for a Legal Entity to obtain a particular privilege.
- ▶ **Update Privilege Requirements Met** – add, update, delete privileges that the legal entity as met.
- ▶ **Grant Privilege** – Grant a privilege to a Legal Entity if all requirements including fees have been met.
- ▶ **Terminate/Revoke Privilege** – Terminate a particular privilege before its natural end date.
- ▶ **Renew Privilege/Endorsement** – Allow for payment of fees and renew a privilege by extending the expiration date.
- ▶ **Suspend Privilege/Endorsement** – Change the status of a privilege to Suspended. May trigger possible notifications and suspension of other privileges if appropriate.
- ▶ **OnHold Privilege/Endorsement** – Change the status of a privilege to “On Hold”. This status has no legal implications or impact on driving records but is used in cases of immediate concern where processes or use of a privilege should be more closely reviewed.
- ▶ **Review and Post Renewal/Maintenance Requirements for Licensed Privileges** – review the upcoming interim or renewal requirements for a privilege and post to requirements tracking. May include need to pay a fee, take a class or meet other requirements
- ▶ **Display/Print Privileges** – Through on screen display or printed document, print the status, endorsements, restrictions and other related information for the privileges of a legal entity. May be filtered or sorted.
- ▶ **Privilege History Report** – Prepare a report of privilege history for one or more privileges for a Legal Entity
- ▶ **Levy Fine against Privilege** – allow user to enter a fine/payment requirement for a particular Legal Entity and privilege. Non-payment will result in suspension or onhold action.
- ▶ **Levy Requirement against Privilege** – allow user to enter a requirement such as test, inspection or other for a particular Legal Entity and privilege. Non-fulfillment will result in suspension or onhold action.
- ▶ **Collect Privilege Fee** – allow user to collect and process the payment of an initial or renewal fee.
- ▶ **Issue Duplicate/Replacement Document** – Customers who have lost their driver or business license or permit may be issued a duplicate or replacement as appropriate. All necessary procedures must be followed.

- ▶ **Issue/Update Permit** – A learner’s permit may be issued to an authorized legal entity if that person has met all necessary requirements including submission of information, passing of tests and payment of fees.
- ▶ **Transfer of Privileges from Out-of-State** – A person may move into the state of New Jersey and use their existing out-of-state privileges as the basis for applying for in-state privileges. This includes personal and commercial driving privileges. This process will change the requirements that must be met for the granting of the privilege.

5.5 Web-Based Transaction Center

- ▶ **Apply for Privilege** – Persons and businesses may initiate a transaction to apply for a new privilege ranging from basic driver’s privilege or possible endorsements to business privileges for an individual such as “driving instructor” or business operation such as “new car dealership”. The system will provide mechanisms for linking the application to an existing Legal Entity ID or creating a new one if one does not exist. By linking to the core systems, a user will not be allowed to create a duplicate or secondary LEID for an existing entity. The submission will initiate other processes which may require the applicant to submit additional information now or at a later date and may require a visit to an MVC facility for testing or other task. Payments may also be linked to the process and facilitated on-line.
- ▶ **Submit Information** – As part of a new application or of an existing process, the customer may need to submit information to the MVC. The function will allow the customer to submit such information and link it to the necessary transaction. Submission of data through on-line forms as well as the submission of scanned documents or photographs will be supported.
- ▶ **Submit Document** – As part of a new application or of an existing process, the customer may need to submit original documents to the MVC. The function will allow the customer to submit such information and link it to the necessary transaction. Submission of actual documents for which scanning is not permissible may include the completion of a submission form that will print a cover sheet to accompany the document when it is mailed to the MVC. The cover sheet will identify the document, its purpose and the transaction to which it is linked.
- ▶ **Check Status** – This function will allow an authorized user to check in the status of a process or application and as appropriate, communicate with a case manager responsible.
- ▶ **Make Payment** – This function will allow the user or business to make a payment as necessary on a pending transaction. Payment may be for a fee or fine as appropriate. Customer may also pay funds into an account that maintains a balance and is drawn against for business transactions. All possible payment type should be supported including credit and debit cards as well as EFT.
- ▶ **Schedule Business License Inspection** – Allow a business to schedule and inspection with MVC staff when one MVC has requested one.
- ▶ **Schedule Hearing** – Allow customer to schedule a hearing when the need for one has been determined or approved by MVC and the customer has been so notified.

- ▶ **Request Hearing** – Allows the customer to request one of many hearing types as appropriate for review by MVC.
- ▶ **Setup Automated Payment Method** – Allow a customer to set up a preauthorized automated payment method that will support MVC services. May include Information Retrievals, Inspections, Registrations, etc. Credit Card and EFT payments should be allowed. Eligible transactions that are generated by the customer will automatically generate a payment transaction.

5.6 Document Management

- ▶ **Scan Document** – image a document and identify document type. Assign it to a Legal Entity, Privilege or vehicle, case, define other parameters
- ▶ **Retrieve Document** – for viewing on screen
- ▶ **Annotate Document** – with signature or other information
- ▶ **Browse Documents** – view documents
- ▶ **Document Report** – list of documents available
- ▶ **Print Documents** – to Printer
- ▶ **Send Documents** – via email or Fax
- ▶ **Track Document Version** – if the document is updated, all versions will be kept
- ▶ **Manage Archive and Retention Schedule** – determine how and when documents are archived or become unnecessary.

5.7 Business Inspection Management

- ▶ **Manage Inspection Types and Requirements** – Update list of inspections and inspection items. For Legal Entities applying for Information retrieval privileges, the inspection information may include checking on background of legal entity, check on customers and other less traditional “inspection” items.
- ▶ **Manage Inspection User Authorizations** – Update list of MVC users authorized to create, access, update and approve inspections
- ▶ **Manage Inspection Record** – Create, update and manage inspections records, status and information.
- ▶ **Manage Inspection Follow-up Task** – Assign tasks and inspection activities including due dates and other information to inspectors or groups
- ▶ **Schedule Inspections** – Review unscheduled inspections and schedule them. May allow Legal Entity to request a particular time
- ▶ **Auto Generate Inspection Records** – Create inspection records based on privilege applications
- ▶ **Link Inspection to Case** – Create a case or link inspection to an existing case for reference purposes. Passing Inspection may be used as a requirement for a privilege renewal, restoration, or initial granting.
- ▶ **Create Inspection Review Documents for Field Inspectors or Internal Staff** – Print appropriate data collection and review documents to support a field inspector while conducting an inspection.

- ▶ **Create Inspection Complete Certificate** – Print authorization that inspection was completed successfully. May be self service by legal entity.
- ▶ **Management Reports** – Allow reports to be generated and sorted that assist field staff and managers in tracking and managing the inspection process.
- ▶ **Manage Background Check** – Allow reports to be generated and sorted that assist field staff and managers in tracking and managing the necessary background check.

5.8 Web-Based Storefront – Controlled Item Request

The following use cases are used to describe the purchase and distribution of inspection stickers. These same processes will apply for other types of controlled items, for example, temporary plates

- ▶ **Enter Inspection Sticker Purchase** – an Authorized PIF representative, once logged on to the system, can make a purchase. The system must allow the customer to specify the different types of stickers to be purchased. During some periods, stickers for different months or years will be available. The customer will also select delivery/shipment method and confirm payment options. Once the transaction is completed, a pdf invoice will be emailed to the customer. Any new payment information that is provided can be saved as a payment profile.
- ▶ **View Purchase History** – A customer, once logged on, will be able to view the history of all purchases and the status of pending purchases. The customer will be given the option to view a “printer friendly” version of the information.
- ▶ **Cancel Purchase** – A customer can cancel an order for Inspection Stickers if the order has not yet been shipped. Appropriate credit to the customer’s credit card or pre-paid account will be automatic.
- ▶ **View Sticker Inventory** – A customer may view the MATRX System’s tracking of inspection stickers on-hand. The customer may reconcile his know inventory with the system’s record. If a discrepancy exists, the customer may contact, via phone or email, an MVC representative to correct the situation.
- ▶ **Create Monthly Automated Order** – An MVC representative will initiate this process around the middle of each month. This procedure will analyze the monthly usage of Inspections Stickers by each PIF and generate an appropriate order for the coming month. The procedure will email a message to each PIF indicating that the auto-generated order will be processed on the 20th of the month and their account will be charged unless they take action. The dates and messages will be configurable by MVC staff.
- ▶ **Setup Automated Payment Method** – Allow a customer to set up a preauthorized automated payment method that will support MVC services. May include Information Retrievals, Inspections, Registrations, etc. Credit Card and EFT payments should be allowed. Eligible transactions that are generated by the customer will automatically generate a payment transaction.

5.9 Web-Based Query Center – Information Retrieval Requests

- ▶ **Submit Information Request** – Allow an authorized Legal Entity to submit a request for information from MVC. The request will be submitted on-line and routed to the appropriate manual and automated approval process. The status of the request will be available to the submitter as the approval process continues and email updates may be an option. Information contained in the request will include the following:
 - What type of information (Driver History, Licensed Privileges, Address Info.)
 - How much history is requested (1 year, 3 years, 10 years)
 - What volume of information (1 record, 1000 records, 1M records)
 - What is the purpose of the information (Insurance Verification, Solicitations)
 - Is the information in summary or detailed form
 - One-time request or continual access – and for how long)
- ▶ **Information Request Review & Approval** – Allow electronic requests for Information Retrieval to be forwarded to the appropriate parties for approval. The system may complete some background checks automatically and check to see if the request is consistent with a privilege that has been granted. Reviewers at MVC, OIT and other agencies may be notified as appropriate so that they can review and approve the request. The system will sequentially request approval from various parties as part of a specified workflow chain. Once all approvals are made the requestor will be notified. The approval chain may include the determination of the fee to be charged or other limitations on the query requested. Any denials will halt the process and notify the requestor.
- ▶ **Information Request Cost Evaluation** – Any query that is not standard or does not have a predetermined fee structured will be routed to pre-determined parties for cost evaluation. This may include an OIT representative who will calculate the cost of technical time and an MVC representative who will evaluate the value of the information requested. This pricing determination will be part of the approval process. The system will not calculate the cost but may provide a template for pricing. The objective is to allow the reviewers or approvers to set the query price.
- ▶ **Preparation of Special Request Queries** – The system must allow technical staff to prepare a SQL query that is loaded into the Query Request system as a newly available query for use by authorized users.
- ▶ **Cost Tracking** – The system must allow MVC users to log notes and hours or time spent with any particular query. This will aid in the long term determination of the fee structure.
- ▶ **Information Request Fee Processing** – The system will charge a Legal Entity for all services provided and queries executed against a preauthorized payment account. Staff must have the ability to refund fees as appropriate and as authorized. This payment system will be integrated with the MVC Financial System and customer account maintenance.
- ▶ **Information Retrieval Request Notices** – As users submit requests, obtain approvals and retrieve information, appropriate notices will be generated to inform the user of appropriate information and statuses. All information will be stored as part of the customer interaction log.

5.10 *Web-Based Query Center – Information Retrieval*

- ▶ **Information Retrieval** – User may use batch processes or on-line action to execute an approved query. The time and details of the request as well as the information provided will be logged. For example, any Driver License Numbers or VINs that are submitted will be logged, and headers or keys for any information provided will be logged. The system will not log all data transmitted as a matter of practicality. Execution of the request will require a unique, authorized user ID that will be logged. Appropriate events will be triggered and confirmed prior to information be provided, as possible.
- ▶ **Owner Notification** – As appropriate, an authorized and registered public entity may request notification of any retrievals of their personal information. The service would only be provided to registered users who may pay a fee for the service.
- ▶ **Usage Monitoring** – Records may be flagged for usage monitoring to aid in the audit of requests.
- ▶ **View Request & Response Log** – Reporting tools will allow an MVC user to view the particular requests and information provided for any requestor.

5.11 *Web-Based Query Center – Information Retrieval Support Functions*

- ▶ **View Transaction Log** – Customers must be able to designate which users can view the on-line transaction log which describes their activity and billing information.
- ▶ **Information Request Status Check** – Customers must be able to check the status of requested retrievals and be notified of status changes using the on-line portal.
- ▶ **User ID Management** – Customers will have a master ID which they can use to create User IDs for each staff members using the on-line portal. Customers will be required to have a unique ID for each user and the system will inform the user that they should be using a unique ID. The master ID will allow various privileges to be assigned to each user such as the type of queries available, times of day, access to transaction log, etc.
- ▶ **Contract Privilege Review** – Customers will be able to review standard components of their contract and the query privileged for which they are authorized.
- ▶ **Payment Authorization and Update** – Customers will be able to update their payment information and authorize payments for services provided using the on-line portal.
- ▶ **On-Line Help** – Customers who have questions can access the on-line help system which will allow them to search for solutions and view tutorials to assist them in using the Information Retrieval System.
- ▶ **Cost Tracking Reports** – MVC and OIT staff must be able to review and analyze data collected for support cost for various queries.
- ▶ **Fee Management** – OIT and MVC staff must be able to manage the fee structure for standard queries so that typical requests can be processed automatically and payment accounts can be charged appropriately.

5.12 Driver History & Event Management

- ▶ **Out Of State Suspensions** – Checks are performed to prevent applicants from obtaining a NJ driver license if their driving privileges are under suspension in another state. Checks are also performed to invoke reciprocity suspensions of NJ licensed drivers if they become suspended out of state, pursuant to the terms of interstate licensing compact agreements.
- ▶ **Maintain Accident Record Information** – Maintain accident record information for compulsory insurance enforcement and to monitor for evidence of operating while suspended that triggers scheduled suspension and other events that become part of the driver history (DH) record.
- ▶ **Appeals** – Representatives in Driver Management and Data Entry process and update the status of Appeals, indicating when a conviction is stayed pending an appeal, won on appeal, or lost on appeal. Working with the 3 levels of courts, MVC receives the results on paper and updates the record accordingly. Furthermore, MVC reviews a quarterly report of all convictions in a Pending appeal status and researches the outcome of those cases with the assistance of the courts and the Administrative Office of the Courts (AOC).
- ▶ **Certified Information and Abstracts** – Staff provide such information which is used by a Court, Insurance Company, Attorney/Investigator, Employer or Customer/Driver to review the Driver History and/or related documents for sentencing, rating, civil investigations, hiring purposes or personal information (to investigate for suspicious activity), respectively. Information is often retrieved from microfilm or imaging system.
- ▶ **Compulsory Insurance Enforcement** – Purpose is to verify insurance on vehicles involved in accidents.
- ▶ **Parking Offenses Adjudication Act (POAA)** – License suspensions ordered per the Parking Offenses Adjudication Act (POAA) are court indefinite suspensions. When legal entity/registered owner pays court fines, provides MVC court receipt(s), and pays \$100 restoration fee to MVC the legal entity/registered owner is restored.
- ▶ **Driver History Maintenance/Court Fixed Term Suspensions/DUI** – DH maintenance includes acting on violations, suspensions, and other events which become part of the DH record and may suspend privileges and result in fees and surcharges due, customer-MVC interactions, and restorations.
- ▶ **Suspension Actions – Dishonored Checks** – Initiate suspension action against the driver license and/or registration privilege of drivers who submit dishonored checks to the Commission.
- ▶ **Alcohol Program Suspensions** – Suspensions and restorations of the driver license privileges of violators, convicted of DUI and/or refusal of breath chemical test, who fail to comply with their education and rehabilitation program sentence requirements.
- ▶ **Boating DUI Violations And Suspensions** – Violations, suspensions and restorations of driving and boat/vessel operating privileges of persons convicted of operating boats/vessels while under the influence or, having been arrested for boating DUI refusing to submit to breath chemical tests to determine their BAC.

- ▶ **Driving While Suspended or Revoked** – Updates and actions taken against drivers while driving while suspended or revoked. Accident/violations as evidence of drivers charged by police.
- ▶ **Fatal Accident Review** – Take appropriate action under NJSA 39:5-30 as required against responsible parties involved in a fatal accident. Sanctions may include suspensions, Driving Improvement Schools, Alcohol programs, Medical Reviews and Driver Reexaminations.
- ▶ **Entries to Driver History/Fee Unit in Regional Service Centers (RSCs)** – RSC staff must be able to collect and log fee payments and update DH records to reflect fee payments.
- ▶ **Medical Review Cases** – Medical review cases are generated for auto and Commercial Driver's License (CDL) when information is received that a driver has a medical or physical condition that may affect their ability to operate a motor vehicle safely or does not meet the statutory/regulatory qualifications to hold license. Medical forms are sent to driver to be completed by their doctor(s). Additional information (specific test results, narratives, lab data, etc.) may be necessary so the Medical unit will request this information as needed. A driver may be medically cleared, suspended (direct orders involving seizures) or the case may be referred to the Medical Advisory Panel. Panel doctors may recommend that driver submit additional information or interval report with MVC, take a New Jersey Re-examination or suspend particular driving privilege. When suspension action is initiated, driver may appeal scheduled suspension action, driver will then be scheduled for a pre-hearing conference to be held at the MVC headquarters only. If at the time of pre-hearing conference a settlement cannot be reached, driver may pursue appeal through the Office of Administrative Law.
- ▶ **Request for Action** – Generated by MVC Internal Investigations Unit when a person gives fictitious information on application for driver license or vehicle registration. The goal is to suspend those individuals who intentionally falsified information to MVC. Each case is judged on its own merit and severity is measured by the nature of the information that is withheld or falsified and its impact on the licensing and registration process.
- ▶ **Misstatement, Misuse, Fraud** – Generated by our own investigation when a person gives fictitious information or makes any other intentional misstatement of fact. The goal is to suspend those individuals who intentionally falsified info to MVC. Each case is judge on its own merit- severity is measured by the nature of the information that is withheld /falsified and its impact on the regulations written. Minimum term of suspension is 6 month, maximum term is 2 years.
- ▶ **Point System Suspensions** – Suspensions are triggered based on the laws and regulations governing point assessments, point reduction credits, driver improvement and probationary driver school programs, and suspensions, including point accumulations at levels A, B, and C, and of probation violators (so-called “persistent violators”).

- ▶ **Driver Education and Improvement** – Includes remedial actions for errant drivers; fee collections; assignment and scheduling to classroom programs for novice and experienced drivers and commercial vehicle operators.
- ▶ **Re-examinations** – Schedule New Jersey Re-examinations at Driver Testing Centers state wide for illegally/fraudulently obtained auto or commercial driver's license, fatal accidents, medical review cases, restrictions and/or modified vehicles or 2 accidents with violations within a 6-month period.
- ▶ **Security Responsibility & Judgments** – Driving and/or registration privileges to be suspended due to receipt of Certification of Unsatisfied Judgment (form SR-38 or Out of State Judgment suspensions or Unsatisfied Claim & Judgment Fund (PLIGA/OSI)). Also, restores or cancel suspensions when appropriate
- ▶ **Surrender Driver Licenses and Registrations and Plates** – Customer no longer utilizing either license or plates. Examples: illness, death, transfer of ownership, moved and obtained DL from another state. Return must be logged and registration and privileges must be updated accordingly.
- ▶ **Uninsured Motorist Management** – Uninsured motorist identification and notification system (UMIS) is used to identify vehicle owners who do not carry insurance on their vehicle. Such cases are identified and processed first by notifying owner and attempting to verify that insurance does exist or has been obtained and then through suspensions and fines if the situation is not rectified.
- ▶ **Violations** – Staff and systems monitor for violations reported by courts, other states' motor vehicle departments, data entry and corrections. All violations are logged and evaluated for their effect on privilege status and driver history records. Events may trigger suspensions, notifications, inquiries and other actions.
- ▶ **Scheduled Pre-Hearing Conferences** – Hearing requests, pre-screening of contested cases, and conference scheduling as requested by MVC or customer. Conferences are scheduled as a preliminary part of the adjudication process.
- ▶ **Determine Fees Due** – MVC collects various fees from individuals and businesses to restore their driving and registration privileges, or to enroll drivers in educational programs. Fees must be logged and privileges updated as appropriate.
- ▶ **Message and Text Annotation to Driver History File** – Any time MVC staff answer inquiries on driver history concerns involving status of driving privileges or restoration requirements, or otherwise as appropriate the driver history records are updated with a message noting the interaction and information provided.
- ▶ **Advisory Notices** – Issue advisory notices to drivers in accord with statute N.J.S.A. 39:5-30.9.
- ▶ **Orders of Suspension** – Enter court-ordered and MVC administrative orders of suspension for a fixed period of time. Calculate restoration dates for several term suspensions active on the record. Enter court-ordered and MVC administrative indefinite suspensions and determine restoration requirements for same. Determine restoration requirements for any of finite and indefinite suspensions.
- ▶ **Warnings** – Official warnings are authorized by the point system regulations, are verbal (issued at conclusion of DIP and PDP classes, or, after a scheduled pre-hearing

conference) or written (issued separately or as part of text of restoration notices), and place driver on probation for a one year period and explain consequences of additional violations during probation in terms of new scheduled license suspensions.

- ▶ **Point Reduction Credits** – Reduce points for violations in accord with statute N.J.S.A. 39:5-30.9 and regulation N.J.A.C. 13:19-10.5. Retract previously awarded point reduction credits based on new violation and/or suspension input not on record when credits were awarded.
- ▶ **Commercial Drivers License Review** – Verify all federally mandated penalties are correctly accessed.
- ▶ **Bus Driver Review** – Review applicants for Passenger (P) endorsement disqualification in three areas 1. Physical examination form for any medical or physical impediments, 2. Driver history for disqualifying operation of a motor vehicle while under the influence of drugs/alcohol within a 10 year period and for accumulation of 12 or more points, and 3. Criminal history background checks provided by the NJ State Bureau of Identification for disqualifying arrests/convictions. Disqualifications result in Scheduled Notices of Suspension.
- ▶ **HDD Violations - Second Offense – Tracking of** a second offense or subsequent violation of a Heavy Duty Diesel Exhaust Emission violation. Fines must be calculated and assessed against the appropriate party. Follow-up actions are appropriate if fines and other required actions are not completed.
- ▶ **Multiple Number Resolution** – Generated by MVC, Courts or Law Enforcement (based on motor vehicle stop). The goal is to determine correct driver license number and combine all numbers and related history and information to the correct one.
- ▶ **Office of Administrative Law Transmittals** – Prepare contested cases and support OAL hearings and decisions.
- ▶ **Hazmat Endorsement Background Review** – Receive HME background check results from the Transportation Security Administration. Update compliance date and whether applicant is qualified or disqualified on Driver History. Disqualification triggers suspension of HME.
- ▶ **School Bus Inspection Fee Collection** – Maintain billing for school bus inspections and enforce suspension procedures for delinquent accounts.
- ▶ **School Bus Insurance Verification** – Each school bus contractor is required to furnish liability insurance for bodily injury and property damage in the amount of \$1,000,000 combined single limit per occurrence for all vehicles transporting school age children to and from school or school related activities for hire.
- ▶ **School Bus – Refusal to Inspect** – Complaints are received of non-conforming vehicles being used for the purpose to transport for hire; school age children to and from school or any school related activities.
- ▶ **HDD Reinspection Request and Suspension Warning** – Smoke complaints received on diesel-powered trucks that are observed emitting excessive smoke from the exhaust are reported to MVC. These trucks are scheduled for reinspection at a Specialty site. Failure to comply results in revocation of the registration privileges.

- ▶ **School Bus Co. Maintenance Inspection Certification and Related Suspension** – Every school bus operator shall certify to the director, on a form prescribed by the director, that he or she has inspected and maintained his or her school buses. Such certification shall be made once every twelve (12) months. Systems must track and support the enforcement of this process.
- ▶ **Limo Driver Background Review** – Receive criminal background check results from the State Police and FBI. Driver Improvement analysts review results and make determination if driver is qualified to drive a limousine. Employer is notified of outcome by letter. No suspension is made for disqualified drivers.

5.13 Vehicle Management – Titling

- ▶ **Initial Title** – An initial title may be issued to a customer who needs a certificate of ownership for his new or used boat or vehicle.
- ▶ **Manage Lien Information** – A title may be updated when a customer needs to add a lien holder to an existing vehicle or boat. Additionally, this lien information must be updated and cleared at the appropriate time.
- ▶ **Title Maintenance** – A title may be updated if there is a correction to the VIN/HIN, year, make, model or other information including the branding.
- ▶ **Duplicate/Replacement Title** – A duplicate title may be issued to a customer who has lost his original certificate of ownership. Replacement Titles are issued when the existing title has been damaged or is otherwise unacceptable.
- ▶ **Transfer Title to Survivor** – A title may be transferred to another legal entity as appropriate upon owner's death.
- ▶ **Add Entity to Title** – As appropriate another legal entity may be added to a title – typically a spouse as co-owner.
- ▶ **Sales Tax Collection** – A title may be issued if the existing title was issued without collecting sales tax and the current title is so marked.
- ▶ **Dealer Transfer** – Dealers must be able to provide information as to the current ownership and change of ownership for vehicles as they are transferred from one NJ dealer to another.

5.14 Vehicle Management – Registrations

- ▶ **Initial Registration** – An initial registration may be issued to a customer who needs to register a vehicle or boat which they own or are authorized to operate. Commercial vehicles and leased vehicles must include authorization by the owner if the registrant is not the owner.
- ▶ **Registration Update** – An update to a customer's existing vehicle or boat registration may be completed as appropriate to updates codes, weights, usage information, or other information.
- ▶ **Lease Information Update** – Any vehicle that is leased must be designated so in the Vehicle Management System. Lease information identifies the owner and allows the owner to designate an authorized registrant.

- ▶ **Registration Renewal** – A registration renewal may be issued to a customer whose NJ registered vehicle or boat registration has expired or will expire within the allowable time period.
- ▶ **Registration Transfer** – License plates may be transferred to another vehicle of the same owner by transferring the registration and plates.
- ▶ **Dealer Temporary Registration** – an authorized car dealer in New Jersey may provide a temporary registration and plate to a new owner of a vehicle. This registration will be completed in a “real-time” manner that updates the MVC computer system before the plates are attached and the vehicle is permitted onto the public roads.
- ▶ **Temporary Registration** – A temporary registration may be issued to a customer for a determined period of time if their vehicle was purchased in NJ but will be registered in another state.
- ▶ **Collector Vehicle Voucher** – a Collector Vehicle Voucher may be issued to a customer who has a registered vehicle that does not qualify as a historic vehicle or a street rod, is driven less than 3,000 miles per year and is insured as a limited use collector vehicle. This voucher may be renewed, reissued, and a duplicate may be provided as appropriate.
- ▶ **Reissuance of Decals or Plates** – a license plate or decal may be reissued to a customer if that item is deemed lost or in need of replacement.
- ▶ **Duplicate/Replacement Registration** – A duplicate registration may be issued to a customer who has lost his original document. Replacement registrations are issued when the existing document has been damaged or is otherwise unacceptable.
- ▶ **Transfer Registration to Survivor** – A registration may be transferred to another legal entity as appropriate upon owner’s death.
- ▶ **Transfer Boat Registration to New Owner** – Registration information remains with a boat and must be transferred to a new owner upon sale.

6. Data Model

As part of the design and analysis process, MVC has developed a logical data model that defines the data management requirements of MVC and presents an approach for organizing the data in a manageable and flexible manner.

The data model is divided into subject areas. Each subject area represents a specific area of MVC operation or data management needs. The overall model is presented as a series of subject areas or submodels so that each can be described.

6.1 Approach

From the beginning of the data architecture/modeling process one goal was kept in mind; creatively design a new interim model to begin to meet MVC Next Generation applications requirements while maintaining the ability to accommodate existing data.

In order to allow data portability, the modeling process was performed in stages. The first stage was to extrapolate a “relational” model from the non-relational MVC tables used

throughout the MVC DATACOM database. During this step new tables were created to represent all table data fields which contained pre-defined lists of values. In the new model these types of fields are now represented as foreign key constraints. The second stage was to investigate new means of representing the existing data, and make modifications to the model as appropriate. The third stage was to research the existing tables and fields and make appropriate enhancements.

Consolidation of Common Elements

A fundamental approach in the modeling process was to analyze the entire scope of MVC data and identify common data elements. Therefore, all operations were considered including Business Licensing, Driver Licensing, Driver History, Vehicle Title & Registration, and Vehicle Inspection. Commonalities between data were identified and where appropriate they were merged in the model to represent these commonalities. As such the previously distinct business processes, with their separate supporting databases, have now been modeled together. For example, Business Licensing and Driver Licensing can now be thought of as Licensing within the data architecture realm. These previously disparate processes now share a single data architecture.

Legal Entity

The approach toward standardization of data was further utilized by bringing businesses and individuals together within a single data architecture. In the MVC Next Generation data model all individuals and businesses that interact with MVC are represented with a unique entry in the LegalEntity table and assigned a unique Legal Entity ID number. Once this record is created, additional information is entered into either PersonProfile or BusinessProfile, depending upon whether the entity is a person or business. This approach allows MVC to manage all legal entities and maintain additional information. Other profiles, such as FinancialProfile, maintain financial information for the legal entity and link directly to the legal entity table.

Privileges

Another central component of the Next Generation architecture is the creation of “Privileges.” Privileges can refer to personal and commercial driving privileges (licenses) or business licenses such as the privilege to operate a new car dealership or inspection facility. Privileges could also refer to the privilege to register a vehicle, which can typically be revoked under certain situations. The use of Privileges to define individual or business licenses that have or can be granted helps to create a flexible data model that will be able to support future concepts as well as existing ones.

6.2 Data Model Subject Areas

The central subject areas in the MVC Next Generation Data Model are:

Licensing – the joint capture of Driver Licensing and Business Licensing into a single cohesive model

Privilege Configuration – the flexible architecture created to generally support driver and business licensing types, which will also support future concepts

Contact Processing – the flexible and extensive architecture which can be utilized to store contact information for all MVC customers, partners, agencies, etc.

Vehicle Processing – the updated approach to handling all matters concerning vehicles, vehicle ownership, vehicle accidents, vehicle insurance, vehicle inspection, etc.

Event Tracking – derived from the DATACOM Driver History model; then expanded and improved the organization and storage of data

The Data Model is described in more detail in a separate MATRX System Data Model document.