Department of Homeland Security

Regulatory Evaluation

Final Rulemaking

6 CFR Part 37

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EXTENDED **T**ABLE OF **C**ONTENTS

LIST OF ACRONYMS

AAMVA	American Association of Motor Vehicle Administrators
BLS	U.S. Bureau of Labor Statistics
CCD	Consolidated Consular Database
CDLIS	Commercial Driver License Information System
CHRC	Criminal History Records Check
COTS	Commercial Off The Shelf
CRBA	Consular Report of Birth Abroad
CSC	Customer Service Center
DHS	U.S. Department of Homeland Security
DL/ID	Driver's License and/or Identification card
DMV	Department of Motor Vehicles
DOS	U.S. Department of State
DOT	U.S. Department of Transportation
ECI	Employment Cost Index
EVVE	Electronic Verification of Vital Events
EVVER	Electronic Verification of Vital Event Records
FBI	Federal Bureau of Investigation
FPS	Federal Protective Service
FR	Final Rule
FTE	Full Time Equivalent
GDP	Gross Domestic Product
ICE	Immigration and Customs Enforcement
MRT	Machine Readable Technology
MRZ	Machine Readable Zone
NAPHSIS	National Association for Public Health Statistics and Information Systems
NCSL	National Conference of State Legislatures
NGA	National Governors Association
NPRM	Notice of Proposed Rulemaking
OHPI	Office of Highway Policy Information, DOT
OMB	Office of Management and Budget
OTC	Over-The-Counter issuance
PDDDI	Program Design, Development, Demonstration and Implementation
PDPS	Problem Driver Pointer System
PMO	Program Management Office
RFID	Radio Frequency Identification
SAVE	Systematic Alien Verification for Entitlements
SBA	Small Business Administration
SEVIS	Student and Exchange Visitor Information System
SOC	Standard Occupational Classification
SSOLV	Social Security Online Verification
TSA	Transportation Security Administration
USCIS	United States Citizenship and Immigration Services
USPS	United States Postal Service

EXECUTIVE SUMMARY

The Department of Homeland Security (DHS) has conducted a comprehensive, rigorous, and exhaustive Regulatory Evaluation of the benefits and costs of the final minimum standards for State-issued drivers' licenses and non-driver identification cards pursuant to the REAL ID Act of 2005. These standards will impact the lives of approximately 240 million people and the operations of all 56 State and territorial jurisdictions. This Regulatory Evaluation reflects a joint State, Federal, and public effort to improve the security and trustworthiness of drivers' licenses and identification cards.

DHS estimates that the undiscounted eleven-year cost of the final rule is less than $10 billion, of which less than $4 billion are States costs. This results in an average marginal cost of $8.31 per card issuance to States. The final regulation will strengthen the security and integrity of State issued drivers' licenses and identification cards.

Overview

This Regulatory Evaluation covers the eleven-year costs of REAL ID Program deployment and operations. This includes:

- Years One through Four – the three and one-half year period from January 2008 to May 11, 2011 during which States will have time to make the business process changes and investments to meet the standards of REAL ID. In addition, States meeting the interim standards of Material Compliance with the rule may begin enrolling their populations in REAL ID beginning no later than January 1, 2010.
- Years Four through Eleven – the seven and one-half year period during which States will continue and complete enrollment of their populations in REAL ID. States will begin issuing fully compliant REAL ID licenses no later than May 11, 2011. Moreover, DHS has adopted a risk-based approach to REAL ID enrollment. By December 1, 2014 all individuals born on or after December 1, 1964 (that is, 50 years of age or under) will be required to present a REAL ID if they use a State-issued document for official purposes. Thus, individuals born on or after December 1, 1964 will have a minimum of four years to obtain a REAL ID. Individuals born before December 1, 1964 will have an additional three years to enroll before the final enforcement deadline of December 1, 2017.

The timeline for REAL ID implementation is shown below in Figure ES-1.

Figure ES–1: REAL ID Implementation Timeline

S T A T E   C O M P L I A N C E   M I L E S T O N E S

O F F I C I A L   P U R P O S E   M I L E S T O N E S
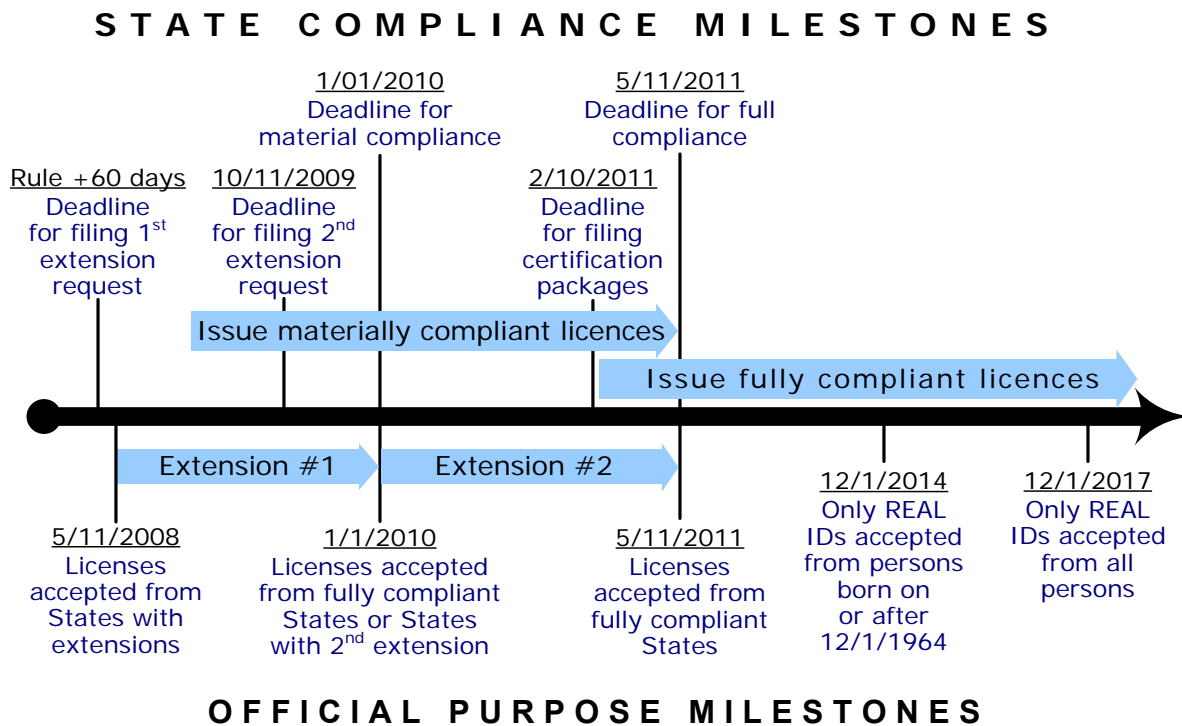
Assumptions

The final rule incorporates significant changes to the Notice of Proposed Rulemaking (NPRM). As a result, we have revised some of the assumptions upon which the original Regulatory Evaluation was based. The revised assumptions are summarized below.

1) States will comply in accordance with the timeline above.

DHS recognizes that most, if not all States will be unable to comply by May 2008 and will file requests for extensions that will result in compliance implementation schedules that could mitigate some of the startup costs examined below. Hence, the costs allocated to the period prior to May 2008 in the NPRM will be redistributed to subsequent years.

2) Seventy-five percent of the nation's DL/ID holders will seek a REAL ID credential.

The original NPRM assumed that 100% of the candidate population would seek to obtain REAL IDs. This assumption was combined with two additional assumptions, namely that:

1. States will not require all individuals to obtain a REAL ID;
2. Some States will continue to issue non-compliant licenses along with REAL IDs

The Department has reviewed comments and reassessed the 100% assumption, and concluded that it is unrealistic. If States do not require all applicants to obtain REAL IDs, it is highly

improbable that 100% of the population will apply, as a certain percentage of the population will not need or desire a credential for official purposes. If States offer a choice of either compliant or non-compliant licenses to applicants, some portion of the population will choose to receive a non-compliant license because:

1. They do not need a REAL ID for Federal official purposes
2. They already possess a substitute document – for example, a U.S. passport – that will serve the same purpose as a REAL ID

Thus, the Department has reconsidered and eliminated the assumption that every individual 16 or older will seek to obtain a REAL ID within the timeframe of this analysis.

The difficult question, therefore, is what level of participation in REAL ID can be realistically expected? What should be the primary estimate for participation by the American public in REAL ID?

The Regulatory Evaluation has adopted a primary estimate of 75% based upon the following analysis.

1. Comments to the NPRM and further research has led DHS to conclude that a significant number of States will not require that all residents seeking drivers' licenses or identification card obtain a REAL ID. Eight states currently issue licenses to individuals who cannot demonstrate lawful status, and a significant number of States are likely to make REAL IDs an option.
2. 25% of the population already holds a valid passport and the Department of State anticipates that this figure will increase to approximately 33% in the next few years.[1] Individuals with valid passports do not need to obtain a REAL ID.
3. 20% of the population has never flown on a commercial airplane and 47% flies "rarely or never." [2] This second group is unlikely to need a REAL ID and members of this group are highly unlikely to belong to the group of valid passport holders.
4. These two groups combine to constitute a group of at least 40% of the population that will not need to obtain a REAL ID. Assuming that some of this group will seek to obtain a REAL ID regardless of need, we believe that 25 % is a reasonable assumption of the candidate population that will not seek to obtain a REAL ID.

A more detailed discussion of the basis for this assumption is detailed in Section V, Cost Estimates and Alternatives Analysis.

3) States will issue both REAL IDs and non-REAL IDs.

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[1] Testimony of Maura Harty, Assistant Secretary of State for Consular Affairs, before the Senate Foreign Relations Committee, International Operations and Organizations Subcommittee, June 19, 2007, at http://travel.state.gov/law/legal/testimony/testimony_806.html.
[2] Statistics reported in The Airline Handbook, issued by the Air Transport Association and located at http://members.airlines.org/about/d.aspx?nid=7954 and by the Gallup Organization at http://www.gallup.com/poll/1579/Airlines.aspx.

DHS anticipates that States will offer an alternative drivers' license or identification card (DL/ID), not acceptable for Federal official purposes, to those who do not need or are unable to obtain a compliant one. In no instance are we aware of any State that will issue only REAL IDs. A number of States have indicated that they issue or plan to issue licenses to individuals that cannot document lawful status. Other States are expected to allow individuals to hold both a drivers' license and identification card. Finally, a number of States have evaluated or expressed interest in offering REAL IDs as an additional, voluntary license. This Regulatory Evaluation assumes that States will deploy a two-tier or multi-tier licensing system. States instead may choose to issue only REAL ID compliant drivers' licenses and identification cards.

4) All IT systems will be functional by May 11, 2011.

The NPRM assumed that all IT systems would be functional by May 11, 2008. DHS now recognizes that this assumption was overly optimistic. As a result, DHS has extended the deadline for compliance with the rule until May 11, 2011 to give the States, Federal agencies, and non-governmental organizations like the American Association of Motor Vehicle Administrators (AAMVA) the time to complete the communications and IT infrastructure needed to implement REAL ID. Therefore, DHS has recalculated the costs assuming that all required verification data systems will be operational and fully populated by May 11, 2011, the deadline for full compliance by States. DHS is working to bring these systems online and up to standard as soon as possible and will work with States to develop alternative procedures.

5) State impact is not uniform due to progress already made in some States.

States that have already invested in improving the security of their licenses will have to invest far less per capita than States with less secure licenses and issuance processes. Those States that have chosen to put more advance systems in place will incur lower compliance costs than other States.

6) The typical validity period of drivers' licenses in a given State is the validity period for all DL/IDs in that State.

DHS is aware that within a State DL/IDs often have varying validity periods but was unable to determine how many people held each of these varying types of credentials and when they were issued. (For more details, see the discussion of Validity Periods in the Status Quo section.) Also, the final regulation creates a one-year license for certain aliens. DHS was able to determine that some people already hold such licenses, but not *how many* people hold them. DHS was also unable to determine how many people will hold them under the REAL ID rule. While this methodology has limitations, using the typical validity period of DL/IDs was the most reliable method available to estimate future issuances.

7) Those drivers who would be required to comply later in the issuance cycle will take advantage of this delayed compliance.

DHS has computed the costs for the over age 50 drivers by moving that segment of renewals towards the 2017 deadline. DHS assumes the distribution over time for renewals is similar to the

rest of the population. Therefore these license renewals are not bunched up but entered as the same distribution as other drivers but with the last of the pool completing in 2017.

8) **The cost of lost/stolen DLs/IDs and central issuance is included in the cost of this final rule.**

The regulatory evaluation for the proposed rule assigned the cost of having to replace a lost or stolen legacy ID with a REAL ID as being a regulatory compliance cost. This means that if an individual loses his/her legacy license, the burden of replacing it with a REAL ID requiring an in-person visit was attributed to this rulemaking. The regulatory evaluation for the proposed rule employs the assumption that individuals who replace their lost or stolen legacy license will choose to obtain a REAL ID and pay the additional opportunity costs of an in-person visit to the DMV with the required source documents. After careful consideration, we believe that this assumption may be conservative based upon the revised requirements of the final rule. The enrollment periods of REAL ID have been designed to enable DMVs to enroll individuals with REAL IDs on their normal renewal cycles to the maximum extent possible. Individuals simply replacing a lost or stolen license are likely to want a replacement license as quickly as possible and delay the process of obtaining a REAL ID until their scheduled renewals. However, we maintain the original assumption in this economic analysis because we cannot estimate the different rate at which lost or stolen licenses will be replaced with REAL IDs. Therefore, we assume the rate to be 75% or the same as that for renewals.

The regulatory evaluation still assumes that States will move to central issuance because of the high cost of printing equipment for REAL ID cards. However, the final rule provides added flexibility and therefore States may not have to do this. We are not adjusting this regulatory evaluation to account for this due to uncertainties in States' behavior under the revised provisions of this final rule, and because there are remaining requirements in this final rule that may still make central issuance the most efficient response.

9) **The cost of security markings on REAL ID cards.**

Based on discussions with State drivers' license card vendors, we have estimated the cost for a security marking for compliant cards to be $0.25 per card, and have included this cost estimate in the card production analysis later in this document.

The final rule also requires that if a State issues a license that is not in compliance with REAL ID, the State must by statute and regulation indicate on the document that it is not valid for official federal purposes. According to U.S. license card vendors contacted by DHS[3], there is typically an upfront one time set up fee for the State, which may include license redesign, system reconfiguration, and other related costs. Based on our analysis of information received from vendors and States, DHS estimates that the added cost would be about $10,000 per State, or $.01 per document. The actual cost will vary depending on the State, vendor and any existing contractual agreement they may have concerning design changes. DHS believes that the added

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[3] Based upon conversations between the REAL ID program office and U.S. license vendors, December, 2007.

cost of no more than $0.01 per document will be indirectly incurred by those individuals who will be acquiring REAL IDs.

Summary of Major Differences Between the Final Rule and NPRM

Based upon the many comments received, the final rule incorporates major changes from the NPRM. The major changes impacting the economic analysis include:

1) Extension of Deadlines

In the NPRM, DHS proposed that States that would not be able to comply by May 11, 2008 should request an extension of the compliance date no later than February 10, 2008 and encouraged States to submit requests for extension as early as October 1, 2007. During the public comment period, DHS received numerous comments from States and Territories, State associations, and others, noting that almost all States would be unable to meet the May 2008 compliance deadline. Accordingly, to allow more time for States to implement the provisions of the rule in general and verification systems in particular, DHS is also providing in the final rule the opportunity for States to request extensions of the compliance date beyond the initial extension of December 31, 2009. To obtain a second extension, States must file a Material Compliance Checklist by October 11, 2009. This checklist will document State progress in meeting certain benchmarks toward full compliance with the requirements of this rule. States meeting the benchmarks shall be granted a second extension until no later than May 10, 2011. This would give States making significant progress additional time to meet all of the requirements of this rule.

2) Extended Enrollment Periods and Risk-Based Enrollment

The NPRM proposed that States determined by DHS to be in full compliance with the REAL ID Act and these implementing regulations by May 11, 2008, would have a five-year phase-in period – until May 11, 2013 – to replace all licenses intended for use for official purposes with REAL ID cards.

During the public comment period, a number of States and State associations commented that States obtaining an initial extension of the compliance date until December 31, 2009, would still be required to enroll their existing driver population by May 11, 2013 – essentially halving the phase-in period. Several commenters suggested that DHS employ a risk-based approach that would permit States and DMVs to focus first on perceived higher-risk individuals while deferring lower-risk individuals to a date beyond May 11, 2013.

DHS agrees with both these comments. Accordingly, in this final rule, DHS is extending the deadline for enforcing the provisions of the Act for all drivers' licenses and identification cards until no later than December 1, 2017, but requiring REAL ID compliant drivers' licenses and identification cards for individuals 50 years of age or under (that is, individuals born on or after December 1, 1964) when used for official purposes beginning on December 1, 2014. This will effectively give States an eight-year enrollment period beginning in January 1, 2010 when

Materially Compliant States can begin the enrollment process, thus avoiding an unnecessary operational burden on State DMVs from a crush of applicants on or before the original May 11, 2013 compliance date.

3) Physical Card Security

DHS has modified the proposed card security requirements in response to comments which stated that the requirements were too prescriptive and placed an undue burden on the States. Instead, DHS has proposed a performance-based approach for cards that provides the flexibility for States to implement solutions using a well-designed balanced set of security features that are effectively combined to provide maximum resistance to counterfeiting, alteration, substitution, and the creation of fraudulent documents from legitimate documents.

4) Marking of Compliant REAL ID Documents

Based on an analysis of feedback from several commenters, DHS has determined that it would be in the best interest of the nation's security for States to place a security marking on drivers' licenses and identification cards that are issued in compliance with the REAL ID Act. Such a marking would facilitate the verification of the authenticity of such documents by Federal agencies requiring identification for official purposes.

5) Certification and Security Plan Documentation

Based on feedback from commenters, DHS has eased the reporting and documentation requirements placed upon States by circumscribing the scope of security plans and requiring submission of updated plans and certification packages on a rolling, triennial basis.

6) Address Change and Documentation Requirements

Based on numerous responses, DHS has removed the requirement that an address change must be accomplished through an in-person visit to the DMV. Additionally, there is no requirement in the final rule for States to issue a new card when notified of an address change. Moreover, DHS now allows States fuller discretion in the acceptance of address documents by removing specific requirements that documents used to demonstrate address of principal residence be issued "monthly" and "annually."

7) Financial check

DHS agrees with comments that the financial history check would not be determinative. Therefore, DHS is eliminating the requirement for a financial history check from the final rule.

Costs and Benefits

This regulatory evaluation attempts to quantify or monetize the economic benefits of REAL ID. In spite of the difficulty of quantification, almost everyone understands the benefits of secure and trusted identification. The final minimum standards seek to improve the security and trustworthiness of a key enabler of public and commercial life – State-issued drivers' licenses and identification cards. As detailed below, these standards will impose additional burdens on individuals, States, and even the Federal government. These costs, however, have been weighed against the quantifiable and non-quantifiable but no less real benefits to both public and commercial activities achieved by secure and trustworthy identification.

The uncertainty analyses are being recomputed and will be published in the forthcoming final regulatory impact assessment.

Economic Costs

Implementing the REAL ID Act will impact all 56 jurisdictions, more than 240 million applicants for and holders of State DL/IDs, private sector organizations, and Federal government agencies. Figure ES–2: summarizes the estimated marginal economic costs of the final rule over an eleven year period.

Figure ES–2: Estimated marginal economic cost of REAL ID final rule

Estimated Costs (11 years)	$ million 7% discounted	$ million 3% discounted	$ million (2006 dollars) undiscounted	% Total Undiscounted
Costs to States	**2,879**	**3,413**	**3,965**	**39.9%**
Customer Services	636	804	970	9.8%
Card production	690	822	953	9.6%
Data Systems & IT	1,171	1,352	1,529	15.4%
Security & Information Awareness	365	415	490	4.9%
Data Verification	5	7	8	0.1%
Certification process	11	13	16	0.2%
Costs to Individuals	**3,808**	**4,814**	**5,792**	**58.3%**
Opportunity Costs	3,429	4,327	5,215	52.5%
Application Preparation (125.8 million hours)	2,186	2,759	3,327	33.5%
Obtain Birth Certificate (20.1 million hours)	348	440	530	5.3%
Obtain Social Security Card (1.6 million hours)	31	37	44	0.4%
DMV visits (49.8 million hours)	864	1,091	1,315	13.2%
Expenditures: Obtain Birth Certificate	379	479	577	5.8%
Cost to Private Sector	**8**	**9**	**9**	**0.1%**
Costs to Federal Government	**128**	**150**	**171**	**1.7%**
Social Security card issuance	36	43	50	0.5%
Data Verification - SAVE	9	11	14	0.1%
Data Systems & IT	65	74	82	0.8%
Certification & training	17	21	25	0.3%
Total Costs	**6,853**	**8,406**	**9,939**	**100.0%**

Figure ES–2: shows the primary estimates calculated in both undiscounted 2006 dollars and discounted dollars at both the 3% and the 7% discounted rates. The total, undiscounted eleven-year cost of the final rule is $9.9 billion. Based on a total of 477.1 million issuances over the 11-years of the analysis, the average marginal cost per issuance for States is $8.31. Individuals will incur the largest share of the costs as shown in Figure ES–2. More than 58 percent of the costs (discounted or undiscounted) are associated with preparing applications, obtaining necessary documents, or visiting motor vehicle offices.

The costs shown in Figure ES-2 show a substantial decrease in those reported in the NPRM. In particular the costs for States are 27% of those estimated for the NPRM. This substantial decrease in costs can be attributed to a number of factors, including a revised assumption that only 75% of DL/ID holders will apply for a REAL ID as well as a less prescriptive,

performance-based, and balanced approach to REAL ID implementation. As many commenters suggested, providing additional time for implementation and enrollment of DL/ID holders will allow States to accommodate the enrollment process without disrupting their normal renewal cycles, resulting in a decrease in total REAL ID issuances from 813 million to 477 million issuances. In addition, the undiscounted estimates for card production costs have decreased substantially from $5.8 billion in the NPRM to $953 million in the final rule based on the performance-based approach to card security standards recommended by numerous commenters. DHS recognizes that many States have made significant progress in improving the integrity of their licenses. DHS also recognizes that the prescriptive technology standards included in the NPRM, compared to the final rule, provided relatively few additional security benefits at great cost to States. Moreover, the estimated opportunity costs to individuals have been reduced from $7.1 to $5.8 billion in undiscounted dollars primarily as a result of the changed assumption that only 75% of DL/ID holders will seek REAL IDs. Individuals will still have to obtain source documents and visit their DMVs under this analysis. Finally, the undiscounted costs to States for data systems and IT have actually increased from $1.4 billion in the NPRM to $1.5 billion in the final rule. This slight increase reflects the critical role of information technology and verification systems in reducing identity theft and identity fraud in the issuance of DL/IDs.

The four largest cost areas, in descending order (in undiscounted dollars) are:

- opportunity costs to applicants ($5.2 billion),
- maintaining the necessary data and interconnectivity systems ($1.5 billion),
- customer service ($970 million), and.
- card production and issuance ($953 million).

The largest impact category is the cost to individuals of obtaining source documents, preparing applications, and visiting DMVs. The magnitude of this category is driven largely by the fact that all applicants for a REAL ID will need to complete an application process similar to those of a first-time driver or a driver moving from one State to another.

The second largest impact category is the creation and maintenance of necessary data and interconnectivity systems. These systems will require substantial up-front effort to create but are likely to require smaller marginal increases in maintenance costs.

The third largest impact is customer service. While the extension of the enrollment period in the final rule will minimize marginal increases in the number or flow of transactions, the rule accounts for costs that increased transaction and wait times will produce. REAL ID should not substantially accelerate the rate of transactions, but the per transaction costs to States will increase.

The fourth largest impact is the production and issuance of the REAL IDs themselves. The final minimum standards are intended to make counterfeit production, tampering and other fraud more difficult. While some State cards may already meet the standards of the final rule, many States may have to upgrade their cards and production processes in response to the rule. These upgrades will also require a substantial up-front effort followed by smaller marginal costs for subsequent years.

Estimated Benefits

The final REAL ID regulation will strengthen the security of personal identification. Though difficult to quantify, nearly all people understand the benefits of secure and trusted identification and the economic, social, and personal costs of stolen or fictitious identities. The REAL ID final rule seeks to improve the security and trustworthiness of a key enabler of public and commercial life – State-issued drivers' licenses and identification cards.

The primary benefit of REAL ID is to improve the security and lessen the vulnerability of federal buildings, nuclear facilities, and aircraft to terrorist attack. States, local governments, or private sector entities may choose to require the use of REAL IDs for activities beyond the official purposes defined in this regulation. To the extent that States, local governments, and private sector entities make this choice, the rule may facilitate processes which depend on licenses and cards for identification and may benefit from the enhanced security procedures and characteristics put in place as a result of this final rule.

DHS provides a "break-even" analysis based on the rule having an impact on the annual probability of the U.S. experiencing 9/11 type attacks in the 11 years following the issuance of the rule. DHS believes that the probability and consequences of a successful terrorist attack cannot be determined for purposes of this benefit analysis. However, for the purposes of this analysis, it is not necessary to assume that there is a probability of being attacked in any particular year.

Setting a probability for a successful attack is not necessary for this analysis, so long as we make some admittedly tenuous assumptions about the costs of attack consequences, to determine the reduction in probability of attack that REAL ID will need to bring about so that the expected cost of REAL ID equals its anticipated security benefits. Since it is exceedingly difficult to predict the probability and consequences of a hypothetical terrorist attack, DHS instead provides an answer to the following question: what impact would this rule have to have on the annual probability of experiencing a 9/11 type attack in order for the rule to have positive quantified net benefits? This analysis does not assume that the U.S. will necessarily experience this type of attack, but rather is attempting to provide the best available information to the public on the impacts of the rule.

DHS also developed an analysis based on the discounted cost of a single terrorist attack comparable to the 9/11 attacks on New York City taking place sometime over an eleven year span. The agency determined at what point the final rule would be cost-beneficial given the likelihood of an attack and the effectiveness of preventing the attack.

The final rule on REAL ID is likely to produce potential ancillary benefits as well. These benefits are numerous and will make it more difficult to fraudulently obtain a legitimate license and more costly to create a false license. These other benefits include reducing identity theft, unqualified driving, and fraudulent activities facilitated by less secure drivers' licenses such as fraudulent access to government subsidies and welfare programs, illegal immigration, unlawful employment, unlawful access to firearms, voter fraud, and possibly underage drinking and smoking. DHS assumes that REAL ID will bring about changes on the margin that will

potentially increase security and reduce illegal behavior. Because the size of the economic costs that REAL ID serves to reduce on the margin are so large, however, a relatively small impact of REAL ID may lead to significant benefits. To the extent that this rulemaking reduces the likelihood of these kinds of attacks (nuclear facilities and Federal buildings), then DHS has not quantitatively or qualitatively estimated the potential benefits of preventing a terrorist attack on these types of facilities.

REGULATORY SUMMARY

Changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866, Regulatory Planning and Review (58 Fed. Reg. 51735, October 4, 1993), directs each Federal agency to propose or adopt a regulation only upon a reasoned determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 (5 U.S.C. 601 et seq., as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996) requires agencies to analyze the economic impact of regulatory changes on small entities. Third, the Trade Agreements Act (19 U.S.C. 2531-2533) prohibits agencies from setting standards that create unnecessary obstacles to the foreign commerce of the United States. Fourth, the Unfunded Mandates Reform Act of 1995 (UMRA, 2 U.S.C. 1531-1538) requires agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of $100 million or more annually (adjusted for inflation).

Although Congress recognized that States will have to expend monies in order to comply with REAL ID, it explicitly stated that the REAL ID Act is binding on the Federal government, and not the States. Moreover, by its terms, UMRA does not apply to regulations which impose requirements "specifically set forth in law." Thus, as a matter of law, the UMRA requirements do not apply to this final rulemaking even though States will be expending resources. However, the analyses that would otherwise be required are similar to those required under Executive Order 12866, which have been completed and may be found throughout this regulatory evaluation.

Executive Order 12866 Assessment

DHS has determined that this rule will have an impact of over $100 million in any one year and that it raises novel or complex policy issues. Accordingly, this rule is significant under Section 3(f)(1) of Executive Order 12866 and therefore has been reviewed by the Office of Management and Budget.

DHS has assessed the costs, benefits and alternatives of the requirements finalized by this rule. This document is a complete regulatory impact assessment, as required under Executive Order 12866 and OMB Circular A-4. The details of the estimated costs and benefits, including potential ancillary benefits realized by the requirements set forth in this rule, follow the A-4 Accounting Statement.

Figure ES–3: A-4 Statement

Category	Primary Estimate		Minimum Estimate		High Estimate		Source
Benefits							
Monetized Benefits	None		None		None		RIA
Annualized quantified, but unmonetized, benefits	None		None		None		RIA
Unquantifiable Benefits	• Improved confidence in the validity and authenticity of DL/IDs • Opportunity for business process enhancements to better serve customer needs of citizenry						RIA
Costs							
Annualized monetized costs $Millions/year (discount rate appears to the right)	$913.9	7%	$545.8	7%	$1,515.1	7%	RIA
	$908.4	3%	$542.5	3%	$1,506.1	3%	RIA
Annualized quantified, but unmonetized, costs	None		None		None		RIA
Qualitative (unquantified) costs	None		None		None		RIA
Transfers							
Annualized monetized transfers: "on budget"	$40 million in grants, of which $3 million has already been awarded to one State.						None
From whom to whom?	The Department of Homeland Security may provide grants to States at its discretion. $3 million already awarded to Kentucky						None
Annualized monetized transfers: "off-budget"	None		None		None		RIA
From whom to whom?	None		None		None		None
Miscellaneous Analyses/Category							
Effects on State, local, and/or tribal governments Millions	$3,965 over 11 years, undiscounted (assumes 75% voluntary compliance)		$2,074 over 11 years, undiscounted (assumes 75% voluntary compliance)		$6,066 over 11 years, undiscounted (assumes 75% voluntary compliance)		RIA
Effects on small businesses	None		None		None		RIA
Effects on wages	None		None		None		None
Effects on growth	Not measured		Not measured		Not measured		RIA

I. INTRODUCTION

State-issued drivers' licenses and ID cards (DL/IDs) are the most common form of identification used in the United States. Originally, drivers' licenses were used only to show that a person had been granted the privilege to drive. Technically, that is still their principal purpose; however, their use has evolved over time. Today, typical uses of DL/IDs include:

- Evidence that the holder has driving privileges;
- Identity verification;
- Age verification;
- Address verification, and;
- Automated administrative processing (e.g. populating police reports, State government databases, etc.).

Both the United States Congress and DHS are interested in ensuring that State-issued DL/IDs can be relied upon as valid evidence that the holders are who they say they are. Because they are so widely accepted, DL/IDs have become the target of nefarious people. Falsified identification documents can be used to steal individuals' identities or to establish false identities. The former can result in significant harm to the individual (e.g. one's credit report). The latter can result in significant harm to the public-at-large if used to skirt security procedures. To address concern over the security of DL/IDs, DHS is establishing minimum standards for State-issued drivers' licenses and non-driver identification cards to implement the REAL ID Act passed by Congress.[4]

This document describes the current state of DL/ID issuance in the 50 States and the District of Columbia, hereafter referred to as the 51 States. (Sufficient data to estimate the effects in the remaining five Territories was not available.) It also describes the minimum standards and the marginal economic cost of implementing those standards. Although the regulatory evaluation attempts to mirror the terms and wording of the regulation, no attempt is made to precisely replicate the regulatory language and readers are cautioned that the actual regulatory text, not the text of the evaluation, is binding.

The following analysis begins by describing the parts of the DL/ID issuance process that will be affected by the regulation. Largely, the affected areas are:

1) identity related pieces of the application;
2) increased workloads due to:
    a. increased in-person transactions during the enrollment period;
    b. reduced validity period in States where licenses are currently valid for more than eight years, and;
    c. increased processing time for certain types of applications;
3) verification of source documents;
4) card production and issuance;
5) data and IT systems within States and connectivity with other DMVs;
6) physical security of production materials and locations, and;
7) DMV reporting requirements.

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[4] *REAL ID ACT of 2005*. Public Law 13, 109th Cong., 1st sess. (May 11, 2005), 201, 202.

Following the description of the status quo is a brief qualitative synopsis of the final regulation and its likely effects. The following section describes, in detail, the estimated eleven-year costs of the rule. After the discussion of costs is a break-even analysis that includes potential benefits. The document then presents the other required regulatory analyses including a Final Regulatory Flexibility Assessment, an International Trade Impact Analysis, and an Unfunded Mandates Analysis.

II. A NOTE ON PUBLIC COMMENTS

DHS received more than 21,000 comments to the NPRM. DHS carefully reviewed these comments. All comments are available for the public to view at the docket management system maintained by the Federal Docket Management System: http://www.regulations.gov.

As part of this rulemaking effort, DHS summarized and responded to all public comments relating to the Regulatory Evaluation issued with the NPRM. Comment summaries and responses are located in the preamble to the final rule, which is also available at http://www.regulations.gov and in the Federal Register. Responses to comments are also contained in this document.

III. STATUS QUO

This section describes the baseline processes that will be affected by the final regulation. The description of the status quo at State DMVs relies heavily upon surveys conducted by the American Association of Motor Vehicle Administrators (AAMVA). DHS received the results of surveys conducted in 2005 and 2006. However, sufficient data was not available for Puerto Rico, the U.S. Virgin Islands, the Northern Marianas and Guam. Information provided by American Samoa directly to DHS and via AAMVA's first survey of 2006 suggested that their processes are substantially different from those of the 50 States and the District of Columbia. DHS could not determine how well their process represents the processes in the other Territories. Consequently, the description of the status quo omits the processes, procedures and systems in place in the Territories.

III.A. Use of identity documents

Every day a multitude of documents are used to establish people's identities for a variety of purposes. Those purposes can range from purchasing products with age restrictions to boarding commercial aircraft to entering nuclear power plants. The list of acceptable documents is different for nearly every purpose. Further, depending on the purpose, the list of acceptable documents may vary from one location or facility to another (e.g. some Federal courthouses require a photo ID while others do not require identification at all). State-issued drivers' licenses and identification cards (DL/IDs) are the most commonly accepted credential but may be

substituted by a passport, student ID, birth certificate, employee badge, etc. depending on the purpose and location for which it is used.

III.B. Population

State-issued DL/IDs are held by the vast majority of Americans at or over the age of 16. In 2005, there were roughly 241 million DL/IDs on file at State DMVs. DHS projects that, under the status quo, this number will increase through natural population growth. To project the number of DL/IDs on file, DHS calculated the ratio of DL/IDs on file, as reported in AAMVA's first survey of 2006, to the resident population age 16+ of each State. For years 2006 through 2018, DHS multiplied the Census Bureau's resident population age 16+ projection by the ratio of DL/IDs to population from 2005 for each State. (For more details, see Figure Appendix–1.)

Figure III-1: Projected DL/IDs on file under the status quo (millions)[5]

Year	DL/IDs on file	DL/ID holders	Excess DL/IDs
2005	240.7	225.0	15.70
2006	243.6	227.7	15.93
2007	246.4	230.3	16.16
2008	249.1	232.7	16.39
2009	251.7	235.1	16.61
2010	254.2	237.4	16.83
2011	256.6	239.6	17.04
2012	258.9	241.7	17.25
2013	261.1	243.7	17.47
2014	263.3	245.7	17.68
2015	265.5	247.6	17.90
2016	267.8	249.7	18.12
2017	269.4	251.8	17.63
2018	271.7	253.9	17.77

When examining the data, DHS observed that some States have more DL/IDs on file than they have residents age 16+. The Federal Highway Administration's Office of Highway Policy Information (OHPI) made a similar observation on data they collect annually.[6] They provide four possible causes of this irregularity:
1) when drivers move from one State to the next they may not terminate their first DL/ID so it remains on file until it expires;
2) some people obtain their DL/ID in a State other than their State of legal residence;
3) some DL/IDs are fraudulently obtained, and;
4) expired licenses and licenses of the deceased are not purged on a continual basis.

By limiting the DL/ID to population age 16+ ratio of each State to one, DHS estimates that in 2008 nearly 233 million people will hold a DL/ID. That number will grow to nearly 250 million

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[5] Projections based on data from the US Census Bureau and data from AAMVA's first survey of 2006. See Appendix A for more information.
[6] U.S. Department of Transportation. Federal Highway Administration. Highway Statistics 2004. Jan 13, 2006. Available at <http://www.fhwa.dot.gov/policy/ohim/hs04/dlinfo.htm>. Accessed Jan 15, 2006.

by the year 2018. (For more on the methodology, see Figure Appendix–1.) These estimates still represent an upper boundary because many States' ratios were less than one but may have over-counted via one of the four ways identified by the OHPI. Subtracting the number of people holding a DL/ID from the number of DL/IDs on file provides an estimate of the excess DL/IDs on file. In 2008, there will be an estimated 16.4 million extra DL/IDs on record. DHS estimates that, if trends continue, there will be 18 million excess DL/IDs on file with State DMVs in 2018.

DHS also estimated the number of annual issuances under the status quo. The analysis divides issuance into two major categories of issuance: initial (e.g. turning 16, moving to a new State) and reissuance (reissuing licenses to individuals already holding licenses). The second category, in turn, can be broken down into two subcategories: renewal (e.g. naturally expiring DL/ID), and other reissuance (e.g. lost and stolen, reinstatements, amendments and other non-initial issuances). To calculate projected reissuances under the status quo, DHS used the 2005 weighted average of States' ratios of each reissuance type to DL/IDs on file. Initial issuances were calculated by using the 2005 ratio of initial issuances to the estimated population age 16+ (calculated by State then summed). This results in the initial issuances including domestic migration as well as population growth. This method estimates that, under the status quo, issuance will grow steadily over time and that there will be nearly 983 million DL/ID issuances from 2008 through 2018. Note that many people will have more than one DL/ID issued to them during this period due to initial issuances, renewals, and reissuances as defined above.

Figure III-2: Projected DL/IDs issuances under the status quo (millions)[7]

Year	Re-issuances			Initial issuances	Total
	Renewals	Other	Subtotal		
2005	40.8	22.9	63.7	18.6	82.3
2006	41.3	23.2	64.4	18.9	83.3
2007	41.7	23.4	65.2	19.1	84.3
2008	42.2	23.7	65.9	19.4	85.2
2009	42.6	23.9	66.5	19.6	86.1
2010	43.0	24.1	67.2	19.8	87.0
2011	43.4	24.4	67.8	20.0	87.8
2012	43.8	24.6	68.4	20.2	88.6
2013	44.2	24.8	68.9	20.4	89.4
2014	44.5	25.0	69.5	20.6	90.2
2015	44.9	25.2	70.1	20.9	90.9
2016	45.3	25.4	70.6	21.1	91.7
2017	45.7	25.6	71.2	21.3	92.5
2018	46.1	25.8	71.8	21.5	93.3
Total (2008-2016)	485.6	272.4	758.0	224.7	**982.7**

Considering total national issuances does not speak to the distributional effects among States resulting from changes in the DL/ID issuance process. Different practices have developed in States due, in part, to the differences in populations that they serve. States with relatively small populations cannot absorb substantial fixed costs as easily as larger States because they have

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[7] Projections based on data from the US Census Bureau and data from AAMVA's first survey of 2006. See Figure Appendix–1 for more information.

fewer DL/ID holders across which to spread those costs. On the other hand, large States are more sensitive to small increases in variable costs because they are incurred for more DL/ID holders. Small impacts on processing time or unit card costs can have large budgetary implications for States processing millions of transactions. This, in part, explains why some States, like California, Florida, Texas and New York, have made large efforts to maximize efficiencies in their business processes. Of the 48 responding States, three States issued more than 5 million DL/IDs, 10 States issued between 2 and 5 million, 14 States issued between 1 and 2 million, 9 States issued between 500,000 and 1 million and 12 States issued fewer than 500,000 DL/IDs in 2005.

Figure III-3: Count of responding States by total DL/ID issuances, 2005[8]
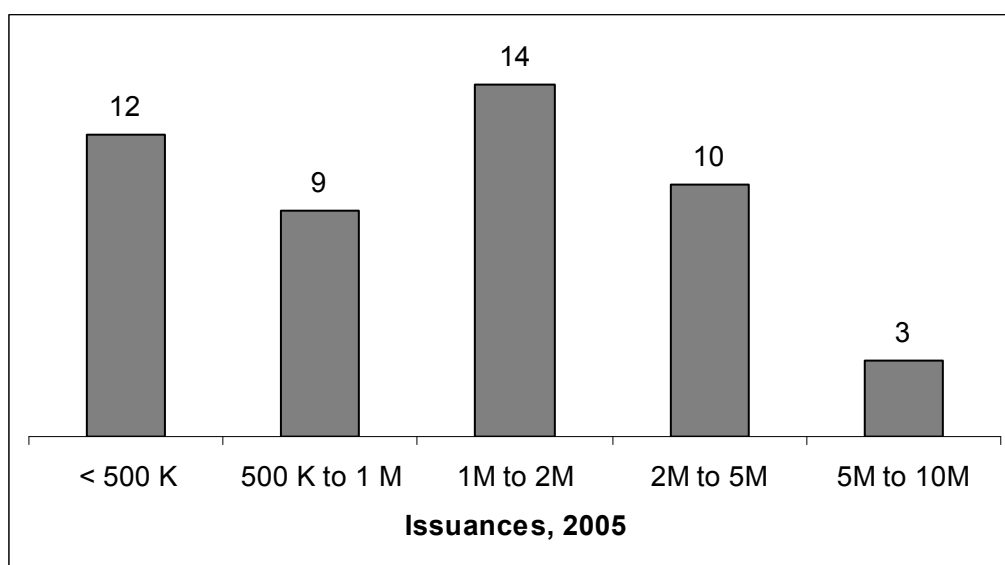
III.C. Applications

This section speaks to the steps necessary to successfully submit an application for a DL/ID. States have an interest in educating applicants on the requirements to complete a successful application, as it minimizes the number of repeat trips an applicant must make, and reduces the impact this added traffic has on an office's processing capabilities. Applicants are required to bring in the necessary source documents and appropriate application and satisfy the State's requirements, including any relevant testing. DMVs must provide sufficient staffing levels to accommodate the workflow, factoring in applicant wait times and queuing, transaction processing times, and anticipated applicant volumes. States may further impact in-office traffic by allowing remote transaction processing or by lengthening the validity period of the DL/ID.

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[8] Based on data from AAMVA's first survey of 2006.

III.C.1. Pre-enrollment

In order to ensure that applicants are properly prepared before visiting a motor vehicle office, many States conduct ongoing informational campaigns. Some States mail relevant information to expiring DL/ID holders along with their DL/ID renewal notices; virtually all States have established websites that provide applicants with important information. Most websites provide current, up-to-date information on how to apply for a new DL/ID (initial or transferring from another jurisdiction), the necessary source documents, the validity period of the DL/ID, any necessary fees, DMV locations and other relevant information. It is important to DMVs that their customers are properly educated on the State's requirements and the process they will go through when applying for a DL/ID, since it is inefficient for both the applicant and DMV staff for an applicant to have insufficient documentation the first time they attempt the transaction.

Not only must an applicant know what documents and other materials to bring to the DMV, the applicant also needs to collect and prepare those materials. On average, applicants provide three identity documents for an application, not including documentation for social security number (SSN), address, or ability to drive.[9] States have differing requirements for source documents, and it takes a different amount of effort, in terms of time and money, to obtain each document. For example, applying for an initial or duplicate Social Security Card may take substantially longer than placing a request to another State for a certified copy of a driving record. Further, online and in-person renewals only requiring presentation of the expiring credential may require little pre-enrollment effort. Such transactions significantly decrease the average time and money spent to prepare for the application process. For estimates on the cost of obtaining certain identity source documents, see Appendix B.

III.C.2. Queuing

In many States, DL/ID applicants may encounter instances where they have to wait in a queue. One survey conducted by a State DMV found that of timeliness, accuracy, helpfulness, expertise and information, timeliness consistently had the lowest customer satisfaction.[10] Recently, however, many States have reported that they have made a concerted effort to transform their business processes to shorten wait times in an effort to improve customer satisfaction. The length of the queue depends upon:
- the number of transactions that must be done in person;
- the average amount of time per transaction, and;
- the number of staff used to process the transactions at a given time.

Holding all else constant, reductions in the first two will reduce wait times. Typical strategies to accomplish this include allowing remote transactions, increasing the life-cycle of the credential, improved education of applicants and staff, and adjustments to the business processes that

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[9] AAMVA. First survey of 2006.
[10] State of Oregon. Driver and Motor Vehicle Services. Presentation on Customer Satisfaction Surveys. Apr 13, 2005. Available at <http://egov.oregon.gov/DAS/OPB/docs/kpm/NCCI/041305_ODOT_Comparison.doc>. Accessed Nov 10, 2005.

produce efficiency gains. As the third variable, staffing levels at a given time, increases, the average wait time should decrease. Wait times will vary from State to State and even from day to day or during different times of the day. The Department found publicly available data from a handful of States concerning wait times at DMVs. The average wait time was 25.8 minutes in the States for which data was available. (See Figure III–4.) In response to its request for comments, the Department received four data points on the most recent average wait time from State DMVs. Factoring in these data points, the revised average wait time was 24.1 minutes.

Figure III-4: Average DMV wait times from Eight States[11]

State	Average (min.)	Date measured
Alaska	20.3	FY2001
California	21	Jan-05
Colorado	34.6	Feb-05
New Mexico	21	CY2005
Nevada	60	Sep-04
Oregon	13.6	CY2003
Virginia	25.97	Apr-06
Vermont	10.25	FY2004
Mean	25.8	
Variance	244.8668	
Stand Dev	15.648221	

III.C.3. Customer Service

In AAMVA's first survey of 2006, 45 States reported having a combined 28,000 FTEs that are directly involved with the issuance process of DL/IDs. Of these, nearly 27,000 work in field locations and 1,700 work in headquarter locations.[12] For the purpose of estimating the total number of employees requiring background checks (See Figure V-81), DHS has estimated a total of 31,700 covered employees for the 51 States.

III.C.4. Acceptable source documents

One of a State's responsibilities is to ensure that people "are who they say they are" prior to issuing them a secure credential. To that end, States require a variety of documentation to prove an individual's personal information such as date of birth, identity, and address.

In a survey conducted by AAMVA, States reported that, on average, an applicant produces three documents to verify their identity.[13] The practice of documenting personal information varies between the States, as each jurisdiction has its own list of acceptable documents. Examples include birth certificates, passports, tribal documents, baptismal certificates, immigration

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[11] Except as noted, data from DMV websites. Accessed Jun 5, 2006.
[12] AAMVA. First survey of 2006.
[13] Ibid.

documents and many others, with birth certificates being the most common identity source document presented by DL/ID applicants.[14]

There are two reasons that many States have extensive lists of acceptable documents. First, the State is trying to maximize the opportunity for its residents to meet the identification requirements to obtain a DL/ID. Additionally, it requires less effort to forge one document than it does multiple documents, and holding all else constant, States have more confidence that applicants are who they say they are if they can produce more documentation to substantiate their claim. However, States have more confidence in some documents than in others, which results in States creating systems where they are willing to make a trade-off between the number of documents required and the relative confidence they have in the documents presented. The two most prevalent practices are a point or value system, and dividing documents into primary and secondary categories.

A number of States utilize a point system, whereby each document is assessed a point value, depending on the security of the document and the process that the individual went through to obtain the document. For example, a passport might be given a higher point value than a high school transcript, because the U.S. passport contains many security features and requires proof of date of birth/citizenship and identification. The transcript, on the other hand, is a piece of paper that might be obtained relatively easily with no security features built in, making it susceptible to forgery or unauthorized reproduction. Under such a system the applicant must bring enough documents that the sum of their numeric values meets a minimum threshold established by the State. For example, a State may require 10 points of identification to satisfy its requirement.[15] If they have assigned an unexpired U.S. passport a value of 10 points, the applicant would not need further documentation of identity. However, if the applicant only has an expired passport and the State values it at seven points, the applicant would need additional one or more documents worth three points. Perhaps they could bring their baptismal certificate for one point and a voter registration card for two points. Together, these three documents would meet the requirements set by the State.

A second, common practice among States is to divide the documents into two lists—primary and secondary documents. The primary document list includes the documents that States have relatively more confidence in. Conversely, the second list includes documents that the States believe are acceptable but need to be accompanied by other documentation. For instance, U.S. passports are usually on the primary list while utility bills typically appear on the secondary list. States may include an ID that they issued on the primary list and IDs issued by other States on their secondary list. The requirements for how many documents must be presented vary from State to State. In some States, one primary document is sufficient. In other States, presentation of one primary document is necessary but not sufficient. These States typically require either another primary document or at least one secondary document. In others still, an applicant can substitute two secondary documents for the primary. No matter which methodology a State adopts, the goal is to ensure that people are who they claim to be before issuing them a secure document.

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[14] AAMVA. *Electronic Verification of Vital Event Records: Final Report.* 2005.
[15] The points assigned per document here are for purposes of example only.

As of June, 2006, a review of state DMV websites indicated that only eight States require applicants to bring their social security card as evidence of their SSN.[16]   The remaining States have widely varying practices regarding what documents are acceptable for this purpose. The list of acceptable SSN documentary evidence in nine States requires a relatively higher level of effort on the part of applicants. Such "high effort" documents are either restricted to highly specific sub-sets of the general population (e.g. social security benefit forms, prison release papers, military IDs etc.) or are other government-certified forms (e.g. certified tax returns). Eight States accept a list of documents that requires relatively little effort by applicants. These "low effort" documents are typically available to most people age 16+ and often include the following provided that they show the holder's SSN: payroll documents (e.g. pay stubs, W-2's, etc.); uncertified tax returns; medical insurance cards; student records, etc. Finally, 26 State DMVs do not require any evidence of SSN. Some of these DMVs encourage applicants to bring their social security card but do not require that they do so. Others only require that the number be provided on the application.

States generally require applicants to provide an address, but the specific requirements will vary from State to State. Some States require that the applicant be domiciled within the State; others require that applicants have an address within the State. Though a subtle difference, it has had large implications for residents who live near a State border and who's US Post Office, and thus address, is in a different State. A number of States do not have a residency requirement at all, allowing individuals from another State to obtain a DL/ID from their State.

 States also have different processes for protecting the addresses of people considered to be at-risk. For example, victims of domestic violence, judges and police officers may be exempt from address requirements in the application process. Some States also extend this exemption to those without a permanent fixed address or residence (e.g. people traveling and living in motor-homes, homeless people, etc).

III.C.5. Validity Periods

States use a variety of validity periods for their documents. Twenty-nine States, which account for 51 percent of the DL/ID population, issue DL/IDs that are valid for a period of five years or less.[17]   (See Figure III–5.) Only three States, accounting for seven percent of the DL/ID population, have DL/IDs that are valid for more than eight years but even for those States, the exception related to "more than eight" years is limited. For example, in some States, all credentials have the same period of validity while in others it differs between documents. For example, some States issue IDs that never expire to people over the age of 65. Other States offer prolonged validity periods to veterans, the blind, mentally ill or physically handicapped individuals. State responses to the AAMVA survey did not indicate the distribution of DL/ID holders among different validity periods within a State, which could potentially have an impact on the temporal distribution of issuances under the final REAL ID rule and may affect the anticipated renewal cycle for some individuals. However, DHS believes these effects will be minimal.

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[16] State DMV websites. Accessed Jun 26, 2006.
[17] Validity period data from AAMVA's first survey of 2006. If no response was provided, the data were pulled from state websites.

Figure III-5: Distribution of States and DL/ID population by typical DL validity period[18]

States

- 9+ yrs, 3
- 8 yrs, 7
- 7 yrs, 3
- 6 yrs, 9
- 5 yrs, 14
- 4 yrs, 15

Population

- 9+ yrs 7%
- 8 yrs 14%
- 7 yrs 5%
- 6 yrs 23%
- 5 yrs 25%
- 4 yrs 26%
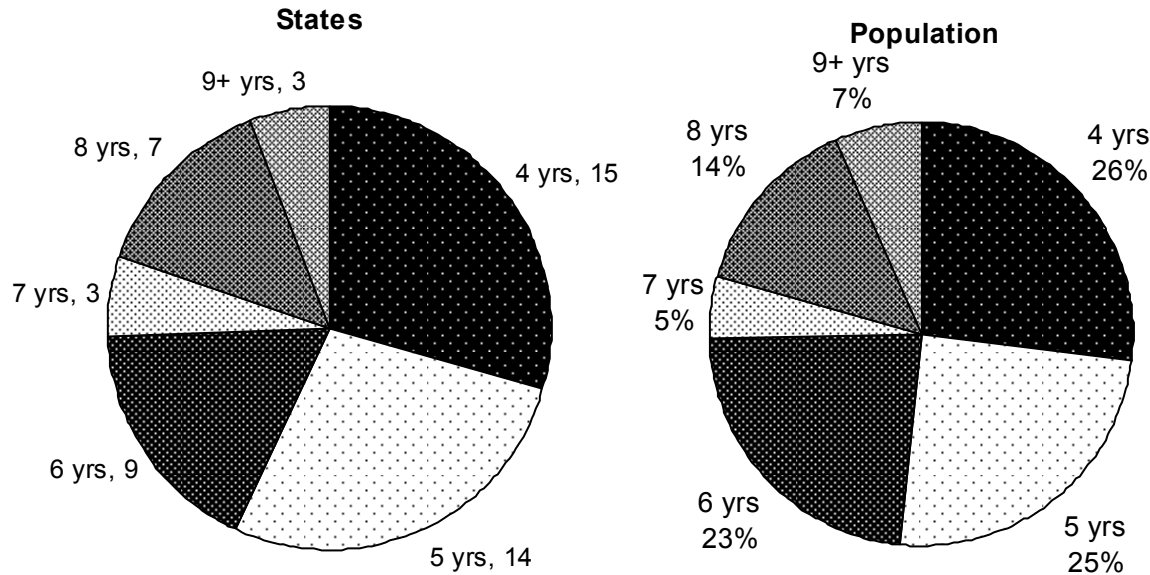
III.C.6. Remote reissuance and renewals

According to AAMVA, 40 States reported having a remote reissuance process that allows DL/ID holders to remotely apply for reissuance of their DL/ID.[19]   Remote methods are used by some States for renewals, replacement of lost or stolen DL/IDs, or reinstatement of driving privileges. Of those 40 States, 21 use the internet, 36 use the mail, 6 use the telephone and 2 use other methods to allow remote transactions. State websites indicate that 27 States, accounting for nearly two-thirds of the DL/ID population, allow remote renewals for their civilian populations. The remaining States offer this option only to members of the military on active duty.

Remote renewals provide a significant cost reduction to the State and increased satisfaction for the renewal applicant. Fewer DMV visits translate to lower wait times and/or reduced staff. However, remote renewals are typically considered less secure than in-person processes for two reasons. First, requiring the renewal applicant to appear in person provides an opportunity to authenticate their identity (e.g. ensure that the person receiving the renewed DL/ID is the original credential holder). Second, an in-person process allows the DMV to update the photograph included on the DL/ID. Consequently, DMVs that allow remote renewals may require that applicants appear in person periodically, such as every other renewal.

DHS has estimated the baseline distribution of issuances between in-person and remote methods based upon 2005 data from AAMVA's first survey of States in 2006. From 2008 through 2018,

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[18] State websites. Responses to the first AAMVA survey of 2006 indicate that approximately 82 percent of the population lives in a state offering an alternative issuance method. However, some of these States only offer alternative issuance to deployed military personnel. The data in Figure 7 reflect the population living in States that offer remote renewals to their civilian population.

[19] AAMVA's analysis of their first survey of 2006.

there would be an estimated 903.1 million in-person DL/ID transactions and an estimated 79.6 million remote issuances. (See Figure III–6.) This estimate is based on States' 2005 weighted average ratio of remote issuances to States' total re-issuances, which is 10.5 percent. After calculating the portion of re-issuances done in-person, DHS added all of the initial issuances to produce the total number of in-person transactions. In reporting the responses to its first survey of 2006, AAMVA calculates that 7.98 percent of all transactions were completed using remote issuance. For the baseline, the difference in methodologies is minimal. However, when estimating in-person versus remote issuances during the risk-based enrollment period of the REAL ID regulation, the two methodologies produce substantial differences. DHS believes that, of the two, its estimate better reflects the issuance distribution because the remote issuance estimate does not rely upon initial issuances, which cannot be done remotely.[20]

Figure III-6: Baseline estimate of in-person and remote issuances (millions)[21]

Year	Total issuances	Initial issuances (in-person only)	Total re-issuances	% via remote issuance	Total in-person issuances	Total remote issuances
2008	85.2	19.4	65.9	10.5	78.3	6.9
2009	86.1	19.6	66.5	10.5	79.1	7.0
2010	87.0	19.8	67.2	10.5	79.9	7.1
2011	87.8	20.0	67.8	10.5	80.7	7.1
2012	88.6	20.2	68.4	10.5	81.4	7.2
2013	89.4	20.4	68.9	10.5	82.1	7.2
2014	90.2	20.6	69.5	10.5	82.9	7.3
2015	90.9	20.9	70.1	10.5	83.6	7.4
2016	91.7	21.1	70.6	10.5	84.3	7.4
2017	92.5	21.3	71.2	10.5	85.0	7.5
2018	93.3	21.5	71.8	10.5	85.8	7.5
Total	**982.7**	**224.7**	**758.0**		**903.1**	**79.6**
AAMVA methodology				7.98	922.2	60.5

III.C.7. Front-end application processing

States receive an individual's application along with the necessary source documents required to properly identify the applicant. Information from the application is entered by the counter staff into the State's DMV system, which is used to create and populate the State's database of DL/ID cardholder information. While similar in many respects, these systems may vary from State-to-State. Most States currently verify SSNs with the Social Security Administration (SSA) utilizing either real-time or batch verification of the SSN, which may impact the turn-around time from application submission to the applicant's receipt of the credential.

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[20] In conclusion, DHS believes that there will be a 10 percent increase in the number of in-person transactions per year for that 75 percent of the population choosing to obtain a REAL ID.

[21] Based on data from AAMVA's first survey of 2006. Remote issuances are only reported at the national level in AAMVA's summary. Re-issuances are reported at the state level in the responses.

III.D. Verification

DHS was able to identify four States that generally require that source documents be verifiable with the issuing agency.[22]   However, that is not to say that they universally require that the documents be verified. A few States do systematically verify an applicant's source documents, whenever possible. Other States verify documents under specific (e.g. suspicious) circumstances. The following section discusses State verification practices under the status quo.

III.D.1. Identity, lawful status and SSN

The vast majority of States do not verify identity source documents with the issuing agency. Rather, they use the multitude of required documents to validate an individual's identity. However, some States have begun to verify certain identity source documents presented by applicants.

In order to verify birth certificates, AAMVA has teamed with the National Association of Public Health Statistics and Information Systems (NAPHSIS) to pilot test the use of the Electronic Verification of Vital Event Records (EVVER) system. Electronic Verification of Vital Events (EVVE) is the NAPHSIS based system linking State vital records offices. EVVER is the system used by State DMVs to interface with EVVE. The EVVER system can be used to connect to systems that verify information contained on a birth certificate with the issuing State vital records agency. In a pilot program, NAPHSIS had eight vital records offices and SSA offices in 26 States utilizing the system. As of July, 2007, three State DMVs and six vital records offices continued to participate.[23]   Because EVVE has not been nationally implemented, DMV verifications using EVVER are limited to those individuals who are from EVVE- participating States and whose birth certificates were uploaded into the EVVE system.

States generally will accept unexpired U.S. Passports. However, States do not currently employ systematic verification of these documents with the Department of State. As with the other documents, the DMV may verify passports that it considers questionable.

During 2006, 19 States used U.S. Citizenship and Immigration Service's Systematic Alien Verification for Entitlements (SAVE) system to verify the lawful status of foreign-born individuals (e.g. non-immigrants, immigrants and naturalized citizens) applying for DL/IDs.[24] Nationally, the number of SAVE verifications represented 1.35 percent of all DL/ID issuances. About half of States using SAVE verify the lawful status of all foreign-born DL/ID applicants. These States account for the vast majority of number of SAVE checks. With one exception, each of these States verifies the status of aliens at initial issuance and reissuance. (One State does not do this for aliens holding "full-term" licenses but plans to begin doing so in 2007.) The other half of the States using SAVE tend to verify documents only in certain circumstances (e.g.

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[22] State DMV websites. Accessed Oct 30, 2005.
[23] State DMV websites. Accessed Oct 30, 2005.
[23] NAPHSIS. *Electronic Verification of Vital Events.* Available at
<http://www.naphsis.org/projects/index.asp?bid=403.>. Accessed Jul 27,2006.
[24] Data provided to DHS by USCIS via e-mail on Apr 26, 2006.

suspicious documents or applications). DMVs currently pay $.26 per requested initial verification.

Some initial verifications cannot be adjudicated and require secondary processing. According to data reported from the SAVE program office as well as at least one State commenter, approximately 20 % of all initial verifications require secondary verification processing. Program data from the year 2005 yields a 14.2 percent secondary verification rate for verifications specific to DMVs. The secondary verification requires that States provide more information or an image or copy of the immigration documents. States may either send this information to USCIS electronically using the automated secondary check system or by hard copy (e.g. photo copy, fax). States incur a $.48 cost for each secondary verification, along with the required labor costs to process the secondary verification. Additionally, the SAVE program office reports that it incurs $6 to $7 in labor costs to complete the secondary verification, which costs are covered by the Federal Government.

DHS projects that under the status quo there would be 13.41 million initial SAVE verifications from 2008 through 2018. When using 2005 SAVE verification program data for DMVs only, this method would yield slightly more than 1.9 million secondary verifications. Using the overall historic secondary verification rate provided by SAVE yields an estimate of approximately 2.7 million secondary verifications. (See Figure III–7. For details on the calculations, see Appendix C.)

Figure III-7: Projected baseline SAVE verifications (thousands)

Year	Baseline issuances	% currently run through SAVE	Initial verifications	Secondary (14.2% of initial)	Secondary (20% of initial)
2008	85,213	1.36	1,163	164.9	232.6
2009	86,115	1.36	1,175	166.6	235.0
2010	86,973	1.36	1,187	168.3	237.4
2011	87,804	1.36	1,198	169.9	239.6
2012	88,612	1.36	1,209	171.5	241.8
2013	89,389	1.36	1,220	173.0	244.0
2014	90,153	1.36	1,230	174.4	246.0
2015	90,921	1.36	1,241	175.9	248.1
2016	91,702	1.36	1,251	177.4	250.3
2017	92,514	1.36	1,262	179.3	252.5
2018	93,332	1.36	1,274	180.9	254.7
Total	982,729		**13,410**	**1,902**	2,682

Social security numbers can currently be verified using the Social Security Administration's Social Security Online Verification (SSOLV) system. This verification is one reason that 24 of the States—more than half for which data is available—do not require applicants to show their SSN card.[25]   If an applicant provides information that yields a mismatch that cannot be resolved, the applicant will not receive a DL/ID from the State. DMVs believe this to be adequate because applicants must also tie their name to the name in the SSA database either exactly or through evidence of name changes (e.g. marriage, divorce, legal name change, etc.). Twenty-three States require some evidence of SSN (data was not available for four States). Of the 23 States requiring

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[25] SSN evidence requirements obtained from State DMV websites. Accessed Jun 26, 2006.

evidence, seven will only accept the SSN card itself. In addition to accepting the SSN card, eight allow documents that are widely available to the public and take minimal effort to obtain. The remaining eight only accept documents that are not available to most people and/or are relatively difficult to obtain.

States can verify SSNs with the SSA in one of two ways. They can use a real-time system costing $0.03 per transaction. Alternatively, they can send applicants' data in batch, at a cost of $0.0017 per verification. Again, the verification practices of States vary, and some States only verify drivers' license but not identification card applicants. Other States only verify a SSN for a commercial driver license. One State indicated in an AAMVA survey that it only verifies the information on the initial issuance but not when issuing a replacement, update or renewal credential. Data collected during AAMVA's first survey of 2006 and their website indicates that 47 States, representing 93.62 percent of the DL/ID population, verify SSNs.[26] Of these, the AAMVA survey identified 14 States that use the batch method and 25 that only conduct real-time verifications, with the remainder utilizing a combination of both methods.

In the course of verifying SSNs, States find mismatches in data. Information from the SSA indicates that this is almost always the result of:
- Applicants using different names when applying for DL/IDs than when interacting with SSA;
- Transpositions, typos or other data entry errors, or;
- Applicants having provided incorrect information.

Two States provided data on how many of their SSOLV verifications had mismatched data. One reported that three percent and the other that five percent of their verifications resulted in mismatches with SSA data.   According to SSA, States resolve mismatches by first verifying that they have correctly entered the data as provided by the applicant. If so, DMVs interact with their customer to ensure they have the correct name, date of birth and SSN. Finally, if all of the information is correct, the DMV refers the applicant to an SSA field office. At the SSA field office, an applicant's identity documents are inspected and the necessary changes (e.g. addition of name changes) are made to the SSA's record. The applicant then returns to the DMV office to complete their transaction.

III.D.2. Address of principal residence

There is no reliable system that States may use to verify all residents' principal address. The United States Postal Service (USPS) does not maintain a comprehensive database of addresses with associated names. They do maintain a Change of Address (COA) database but records are only maintained for six months unless a person requests an extension.

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[26] AAMVA. *Jurisdictions Using Social Security On-line Verification (SSOLV).* Available at <https://www.aamva.org/aspforms/proFindJurisdictionByProductResponse.asp?ProductUID=9&ProductName=Social+Security+Number+On%2DLine+Verification+%28SSOLV%29.>. Accessed Oct 25, 2006.

Some States use third party data (e.g. credit reporting companies or other data broker services) or software to verify a person's address. Currently, 9 States employ such a system.[27] However, third party data is not 100% reliable, may not have the most current data, and may not show which of many addresses is an applicant's principal residence. Most States, therefore, rely upon a quantity of documents or sworn legal statements, including sworn statements on the application itself, to "verify" that the address given is indeed the address where the applicant resides.

III.D.3. Termination of license in other jurisdictions

States do not currently check with other States to ensure that every applicant does not hold a license from another jurisdiction. (States do check to ensure that applicants do not hold a commercial driver license in another jurisdiction.) However, with a few exceptions discussed below, States' policies generally prohibit individuals from dual licensure. There are two current practices that States use to enforce this policy. The first is checking for an applicant in the Problem Driver Pointer System (PDPS), a system that checks from suspension, revocation and other data across all jurisdictions. States are required to use the PDPS by 49 USC 30304(e). This prevents bad drivers with suspended or revoked licenses in one jurisdiction from receiving a license in another jurisdiction. States request that applicants surrender their DLs and/or driving records from other jurisdictions. Under reciprocal agreements between States, this practice allows drivers to bypass the driver permit process and receive a license. However, an individual may still be able to claim to have no previous license, complete the "permit" phase and be issued a second, valid drivers' license under the current approach to dual licensure verification.

Many States have not imposed dual-issuance restrictions on non-driver identity cards. In fact, some States have developed a process to provide ID cards and even special DLs to individuals holding DL/IDs in other jurisdictions. This practice has become especially important for mobile populations that maintain residences in more than one State. It facilitates various economic transactions (e.g. writing/cashing checks), especially when economic agents require a local address. Florida, for example, has instituted DLs that are for "in-State" driving purposes only. These DLs cannot be used in other jurisdictions. Further, any violation committed while using one of these DLs is sent to the drivers' home State.

III.E. Card production and issuance

This section describes the methods DMVs use to issue DL/IDs (e.g. over-the-counter or centrally), the design and layout of DL/IDs, incorporated security features, card production costs, and the current incorporation of machine readable technology.

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[27] AAMVA. First survey of 2006 , Question #15.

III.E.1. Document Issuance

States have varying practices for how they deliver the document to a successful applicant. There are two primary systems for doing this. The first is over-the-counter (OTC) issuance. In these States, applicants are issued their document before they leave the enrollment office. This is also referred to as immediate issuance because the delay between acceptance of the application and issuance of the credential is only a matter of minutes. This option is considered to be convenient for applicants because they only have to visit the DMV once and they walk away with their document. Any normal adjudication must happen nearly instantaneously under this system. For example, when States verify social security numbers (SSNs) with the Social Security Administration they may use either real-time or batch transactions. OTC issuance would require that the State use real-time verification of SSNs. Some States have a hybrid system, where the DMV gives the DL/ID applicant a receipt or number to be taken to another location where they may pick up their DL/ID. These fall more appropriately in the OTC system because the State does not have one central manufacturing site. Rather, they use a decentralized system operated by vendors or various government officials.

Central issuance States typically have one production facility to handle all DL/ID manufacturing. Applicants typically leave the DMV with a temporary DL/ID, and they receive their new credential through the mail after it has been produced at the central facility. Because of this delay, central issuance facilities may choose processes that take more time than the instantaneous ones used by OTC States. For instance, the central issuance States could choose the less costly batch verification of SSNs.

A number of States have adopted a hybrid system, a combination of both OTC and central issuance. This is especially typical of States that use OTC for initial applicants but also offer remote renewals (e.g. mail, internet). Of the 51 States, 45 responded to questions about issuance systems in AAMVA's first survey of 2006 Of those, 16 reported using a central issuance system representing 44 percent of the responding population, 25 report using an OTC system representing 47 percent of the responding population and five use a hybrid system representing 9 percent of the responding population.

III.E.2. Design/Layout

Currently, every State has a unique document design, using a combination of colors, font styles, unique design and layout characteristics, and other State-specific features to express that individuality. However, the absence of any design/layout standards can complicate using an DL/ID as a flash pass. For instance, when a DL/ID holder is visiting another State, people trying to verify the age of the document holder may have a difficult time locating the date of birth field because they are not familiar with the credentials issued by the visitor's home State. Such situations have been the catalyst for efforts to bring some standardization to the layout of documents while preserving the uniqueness of each State's documents. This has been the basis for standards such as those in Annex D of AAMVA's Security Framework.

III.E.3. Security Features

States have employed various techniques to ensure the physical security of their DL/IDs. These techniques largely guard against tampering, cannibalism (using parts from different cards to create a false card), counterfeiting, and photo/signature substitution. States employ security features that can fall into one of three classifications:

- Level 1- overt features visually or tactilely apparent;
- Level 2- inspection requiring the use of basic tools or instruments, and;
- Level 3- covert forensic features requiring advanced knowledge and scrutiny of the documents using advanced tools and equipment.

Generally, States use a PVC, Teslin or other composite card stock with a laminate overlay. Recent advancements in scanning, graphics and printing technology have facilitated the counterfeiting and altering of DL/IDs and have made it more challenging to detect fraudulent DL/IDs. DHS is not aware of any reliable national statistics documenting instances of altering and counterfeiting DL/IDs, and many attacks on the security of such documents go undetected. However, the existence of fake ID markets and the ease with which some individuals attempt to alter or counterfeit a DL/ID suggests that this is may be a growing problem. As an example, two high-school students allegedly produced high-quality counterfeit DL/IDs and sold them to classmates for as much as $125.[28] MSNBC also reports that an employee of their sister network was approached four times in 30 minutes by fraudulent document vendors while walking through Los Angeles' MacArthur Park.[29]

III.E.4. Card production costs

AAMVA's first survey of 2006 asked States to report the unit cost of their DL/IDs. Figure III-8 shows the distribution of unit card costs reported by responding States. The weighted mean of States' responses is $1.38. (See Figure III-9.) The low is $0.68 and the high, an outlier, is $4.30. As would be expected, larger States tend to have lower per-unit card costs.

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[28] "Weston police arrest teens over fake ID operation." Weston Town Crier. Mar 16, 2006. Available at <http://www2.townonline.com/weston/localRegional/view.bg?articleid=449602>. Accessed Mar 29, 2006.
[29] "Fake ID business booms in Los Angeles." MSNBC. Mar 23, 2006. Available at <<http://msnbc.msn.com/id/11980592/>. Accessed Mar 29, 2006.

Figure III-8: Distribution of current unit card costs[30]
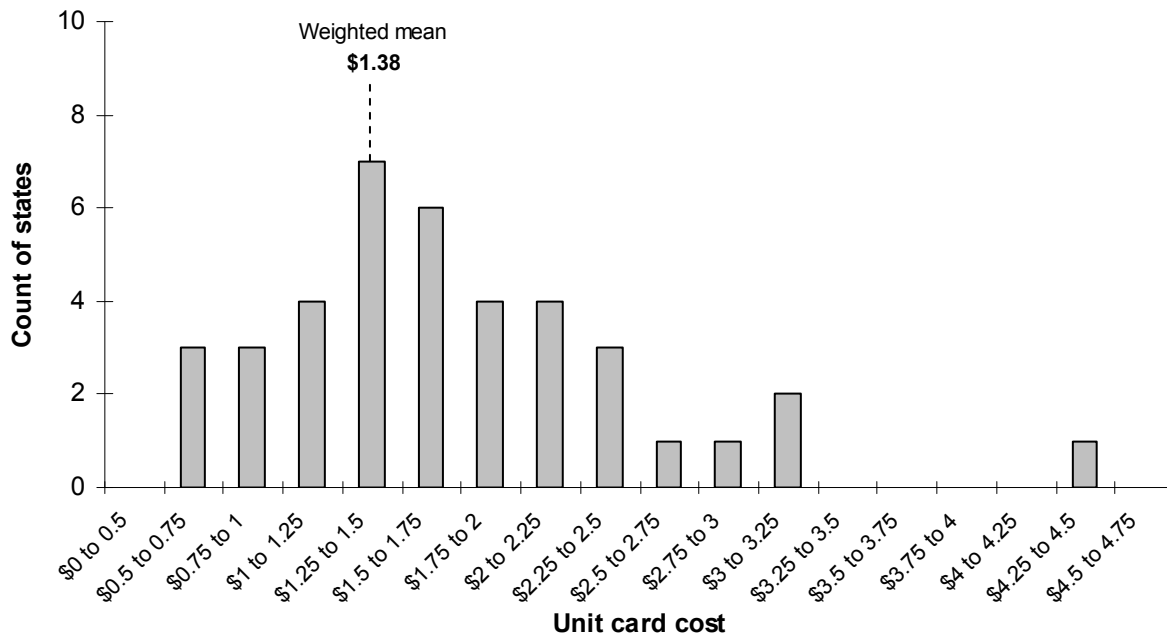
Figure III-9: Current card production cost statistics

Measure	Value
Weighted mean	$ **1.38**
Simple mean	$ 1.75
Median	$ 1.58
Low	$ 0.68
High	$ 4.30
Variance	0.592
Standard deviation	0.769
Responses	39

DHS used the weighted mean unit card cost to calculate the estimated cost of card production under the status quo. Using the weighted mean to estimate the cost of card production from 2008 through 2018 yields a total of $1.356 billion. (See Figure III–10.)

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[30] AAMVA's first survey of 2006.

Figure III-10: Cost of card production under status quo

Year	Issuances (millions)	Mean cost (weighted)		Total (millions)	
2008	85.2	$	1.38	$	117.6
2009	86.1		1.38	$	118.8
2010	87.0		1.38	$	120.0
2011	87.8		1.38	$	121.2
2012	88.6		1.38	$	122.3
2013	89.4		1.38	$	123.4
2014	90.2		1.38	$	124.4
2015	90.9		1.38	$	125.5
2016	91.7		1.38	$	126.5
2017	92.5		1.38	$	127.7
2018	93.3		1.38	$	128.8
Total	982.7			$	1,356.1

III.E.5. Machine Readable Technology

There are essentially three machine readable technologies (MRTs) in use by the States. They include linear barcodes used by 18 States, magnetic stripes used by 18 States and 2-D barcodes used by 46 States.[31] Some States use more than one technology. One State does not include any MRT on their DL/IDs.

III.F. Data

This section describes how State DMVs collect, maintain, process and transmit data related to DL/IDs. Specifically, it addresses how States obtain and store images of source documents, the data stored in their databases and the extent of their interconnectivity.

III.F.1. Imaging and storage

States have widely varying practices of collecting and maintaining images or copies of source documents. Some States do not collect them at all while others maintain their images indefinitely. The medium used to store documents also differs by States. Of the States that maintain copies of images, some keep them electronically while others keep hard copies (e.g. photo-copies, original certified copies, microfilm).

Most of the States retaining images of identity source documents do so for 10 or more years. Interestingly, this is true for every method of document retention. Further, nearly as many States keep images for 10 or more years as do not keep images at all. Of the States retaining images,

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[31] AAMVA. Current and Planned Technologies for U.S. Jurisdictions. Available at <http://www.aamva.org/standards/stdUSLicenseTech.asp>. Updated Jan 6, 2006.

only one retains hard copies for less than 7 years, and only two retain digital copies for less than 10. (See Figure III–11.)

Figure III-11: Count of States by length of retention of identity source document images

Retention period (years)	All states	Hard copy only	Digital copy only	Both hard and digital	Unspecified
0 (None)	20	0	0	0	0
1 to 6	2	1	0	0	1
7 to 9	4	0	2	1	1
10+	19	4	4	3	8
Total	45	5	6	4	10
No response	6				

III.F.2. DMV Databases and connectivity

DMVs maintain databases containing DL/ID holders' personal information. These databases are not standardized between jurisdictions. State databases differ in age, format and content. Currently, a connectivity infrastructure with a broad scope to accommodate the differences in age, format and content does not exist. However, many specialized systems with inter-State connectivity have emerged over the years. Examples include:
- Problem Driver Pointer System (PDPS);
- Commercial Driver License Information System (CDLIS), and;
- AAMVA's network (AAMVAnet).

Each of these systems serves a different purpose for DMVs. States place pointers to their own records onto PDPS for problem drivers. The PDPS then directs a State's driver license inquiry to the State that put the pointer in the database. The Commercial Motor Vehicle Safety Act of 1986 mandated the development of CDLIS. This database system includes name, driver license number, date of birth, SSN and alias information for commercial drivers. The system also facilitates the transmission of a driver's history (convictions and withdrawals) from the State of conviction to the State-of-record. It also allows the transfer of driver records to a new State when the driver changes their State of licensure, and prevents the issuance of more than one CDL license to an individual. AAMVAnet provides one central location that States and law enforcement utilize to access the various systems (e.g. PDPS, CDLIS, SSOLV, etc.). Congress has authorized $28 million to modernize CDLIS, which is managed by AAMVA on behalf of DOT and the States.

III.G. Security

This section describes how States currently secure their DL/ID processes to prevent fraud both externally and internally. Specifically, it addresses the production materials and facilities, background checks for relevant employees and fraudulent document recognition training programs.

III.G.1. Physical security of facilities and materials

States have employed a wide range of techniques to secure their offices and production facilities. In a central issuance environment, the document production facilities are generally very secure. Typically, it involves securing only one location. In an over-the-counter environment, physical security becomes a greater issue for States, as it requires high level security at all DMV offices where DLs/IDs are produced. In some States, the number of offices requiring such security could reach into the hundreds of offices.

There have been documented cases where thieves used trucks or forklifts to break into DMVs to steal the equipment and supplies necessary to create DLs/IDs fraudulently. AAMVA has published security guidelines as best practices for States to follow, but these are not binding. It is important to note that States using vendors for central issuance production are typically not directly responsible for securing those facilities. Rather, States specify performance standards in their contracts. Vendors may be able to spread the cost of physical facility security over their various clients. Consequently, the security costs incurred by vendors may be passed to their clients as part of the unit card production cost.

AAMVA surveyed States in 2005 and asked about the impact to "ensure physical security of locations where DL/ID cards are produced." Based on these responses, DHS estimates that 27 States have rigorous/high security measures in place, 8 have moderate security measures in place and 9 have modest security measures in place.[32] (Seven States did not provide a usable response.) This categorization is based upon DHS's interpretation of the subjective responses. In response to its data request, DHS received one comment from a State DMV indicating that 12% of its facilities would not meet DHS's standards.

III.G.2. Employee background checks

A number of States have fallen victim to malfeasance or internal fraud. Schemes range from one corrupt individual to extensive rings conspiring to accept bribes or other payments to provide "legitimate" licenses to people who are otherwise unable to obtain one. Groups like AAMVA and the Driver License Compact Board have identified two effective techniques to combat internal fraud and minimize the risk associated with internal fraud. The first is for States to partition the business process. Partitioning of the process prevents individual employees from acting alone to falsely issue State DL/IDs and requires collusion of two or more employees for a license to be issued fraudulently. The second technique is to complete background checks on employees.

Many States currently conduct some form of background check on their employees. In AAMVA's first survey of 2006, 45 States reported having just over a combined 28,000 FTEs that are directly involved with the issuance process of DL/IDs.[33] Of these, 26,500 work in field locations and 1,700 work in headquarter, or central office locations. While many States perform

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[32] DHS determination of states' security levels based upon states' responses to AAMVA's 2005 survey.
[33] AAMVA first survey of 2006.

background checks on employees, it is important to note that not all DMV employees within a State are subject to the same background checks and/or disqualifying criteria. The scrutiny that an employee is subject to correlates with his/her level of responsibility and access. In AAMVA's 2005 survey, States gave information, though limited, about their background check requirements. Of the 44 responding States, 19 explicitly stated that they conduct criminal background checks; however, they did not specify if these were State checks or national checks.[34] Five States indicated that they conduct background checks but did not indicate the scope of those checks or whether or not these checks are conducted on all employees who either have access to the manufacturing process or could alter the personal information on a DL/ID. Additionally, 20 States responded that they do not complete background checks.

III.G.3. Fraudulent document recognition training

Fraudulent document recognition (FDR) training programs are designed to enable counter agents to identify fraudulent source documents presented as part of an application process. Of the 48 States responding to a 2006 AAMVA survey, 41 reported having FDR training programs. Of those, 29 States strictly use the FDR training program devised by AAMVA, 8 only use non-AAMVA programs, and three use both. Six States do not have FDR training programs.[35]

IV. DISCUSSION OF THE FINAL RULE

This descriptive language conveys the consequences of the regulation. Although this regulatory evaluation attempts to mirror the terms and wording of the regulation, readers are cautioned that the actual regulatory text, not the text of this evaluation, is binding.

The final rule establishes minimum performance standards for DL/ID issuance. It does not prevent States from applying more rigorous or stringent standards. A number of the commenters addressed potential innovations in card security and a number of these suggestions have been incorporated into the final rule.

IV.A. Use of identity documents

This final rule restricts the acceptance of State-issued DL/IDs for official Federal purposes. The rule defines "official purpose" as boarding Federally-regulated commercial aircraft, accessing Federal facilities and entering nuclear power plants. This rule will:
- Not require the presentation of REAL IDs for other official purposes (some Federal facilities do not require identification);
- Not affect the validity of any drivers' license for the purpose of driving, and;
- Not affect other uses of DL/IDs.

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[34] AAMVA. First survey of 2005.
[35] AAMVA. First survey of 2005.

A person will only need a REAL ID compliant DL/ID when they show a State-issued identification for an "official purpose," and they have no other acceptable form of documentation. Agents of the Federal Government or other regulated parties will need—as a matter of practice, but the regulation does not require it—to complete training on which documents are and are not acceptable under the final regulation.

REAL ID licenses and non-driver identity cards issued by compliant States will be acceptable for official purposes if State-issued drivers' licenses and non-driver identity cards are on the list of acceptable documents for the given purpose. The rule does not prevent agencies, however, from requiring other, additional documentation if their security needs require it. The final rule sets four compliance dates related to the use of State DL/IDs for official purposes.
- May 11, 2008 – all cards from States granted extensions will be accepted for official purposes
- January 1, 2010 – all cards from States granted a second extension and in Material Compliance with the rule will be accepted for official purposes
- December 1, 2014 – only REAL ID cards will be accepted from individuals born on or after December 1, 1964 if these individuals present a State-issued DL/ID.
- December 1, 2017 – only REAL ID cards will be accepted from all individuals presenting a State-issued DL/ID.

In the rule, DHS is limiting the definition of "official purpose" to those uses listed by Congress in the statute: accessing a Federal facility; boarding Federally-regulated commercial aircraft; and entering nuclear power plants. DHS considered including other uses in the definition. However, DHS recognized that some individuals may have initial challenges in obtaining a compliant DL/ID. Consequently, DHS has limited the scope of "official purpose" for this rulemaking.

IV.B. Population

Generally speaking, the regulation will affect the resident population of the United States, including the territories and possessions. State-issued DL/IDs are the most commonly used form of identification in the United States. Further, they are the credentials most commonly used by the general public for boarding aircraft and, where required, entering Federal facilities (aside from government employee badges). The statute and this final rule establishes that only those who can show proof of identity, lawful status, date of birth, address and a valid SSN (or documentation of non-work authorized status) will be able to receive a REAL ID.

This final rule, however, does not prohibit States from issuing non-REAL ID compliant licenses to those who do not seek or are unqualified for a REAL ID. Non-REAL ID licenses will not be acceptable for an "official purpose," and must be marked accordingly pursuant to the requirements of the rule. States may have residents who do not need a REAL ID or who will have difficulties obtaining the source documents. Other residents may choose not to seek a REAL ID. Finally, there are instances where an individual legitimately holds a DL in one State and an ID in another. Most typically, legitimate dual issuance occurs in the case of "snow birds" who migrate between warm-winter States like Florida and cold-winter States like New York. The final regulation prohibits any one individual from holding more than one REAL ID.   In

order to complete transactions where businesses require an ID with a local address, "snow birds" will need a non-REAL ID.

IV.C. *Applications*

The application process will be affected in several ways. First, though not directly regulated, the pre-enrollment, queuing, and staffing processes will likely change as States and individuals respond to and attempt to minimize the impacts of the final rule. The regulation will directly impact validity periods, the list of acceptable source documents and, temporarily, the ability for States to maximize the use of remote application processes.

IV.C.1. Pre-enrollment

In the proposed rule analysis, DHS provided a discussion of a pre-enrollment process. This process was not required by the proposal but was assumed to occur because it provided for an efficient process that would occur before having people report to the DMV. Individuals will need to ensure that they have the source documents required by the regulation. This will require applicants to familiarize themselves with the requirements of the rule. Then they will need to expend additional time and effort to obtain the necessary source documents if they are not readily available. DHS has chosen to include the additional costs to individuals of preparation for enrollment in this regulatory evaluation.

IV.C.2. Queuing

The final rule does not directly regulate the queuing processes utilized by States. However, because the regulation will shorten the validity period in some States and will bring more people to the DMV in States that currently allow remote renewals, the rule will likely affect wait times at DMVs. If States maintain or do not otherwise proportionally increase current staffing levels, wait times at DMVs may increase, as there is a direct tradeoff between DMV staffing levels and average wait times. This tradeoff is ultimately reflected in the tradeoff between State payroll and individual opportunity costs. DHS assumes that DMVs will hire more staff in an effort to maintain status quo wait times. However, because applicants will need to appear in person for their initial REAL ID, including those who will have renewed their DL/ID remotely, there may be an increase in the number of people waiting in line at DMVs (i.e. the sum of all individuals' wait time will increase).

DHS received comments and data regarding staffing levels employed by the States to implement REAL ID, and the effects on average queuing time for DMV customers. In general, comments indicate DMVs anticipate the rule will have a significant impact on either DMV staff levels or customer wait times, or both. Comments further indicated a trade-off between DMV staffing and customer wait times, projecting a doubling of either the one or the other. These comments were considered in the changes to the final rule which extends the enrollment period until 2017 and adopts a risk-based approach to the enrollment process. These changes are in response to the

comments received and will substantially mitigate the effects of longer transaction times for in-person enrollments in REAL ID. Based on these changes, DHS has re-estimated the wait times and staffing levels associated with this final rule.

IV.C.3. Customer Service

The final rule will likely result in an increased workload for DMVs, as the initial enrollment of individuals will likely involve longer and therefore more costly transactions than would have occurred otherwise. Under the status quo, they would have processed in-person transactions of shorter duration, and would have made more effective use of remote transaction processing.

However, the increased workload is mitigated in the final rule by allowing for a risk-based enrollment period that extends until 2017, and provides additional flexibility for States in implementing the requirements of the final rule. Still, States may need to make modifications to their workflow and processes to accommodate REAL ID requirements. In some States, DL/ID issuance facility enhancements may be necessary. Based on these changes, DHS has re-estimated the impact of the workflow, process, and facility enhancements required by this final rule.

IV.C.4. Acceptable Source Documents

DHS considered an array of source documents to include in the regulation to establish identity, lawful status, principal address and social security number or ineligibility for a SSN. The documents approved to show identity, date of birth and lawful status are listed in Figure IV-1. The employment authorization document alone does not prove lawful status. However, it can be used as provisional evidence of lawful status, pending verification of status through the Systematic Alien Verification for Entitlements (SAVE) system.

Figure IV-1: Acceptable identification and lawful status documentation

Document	Citizens	Non-citizens *
Unexpired U.S. Passport	X	
Certified copy of birth certificate issued by a state or local government	X	
Department of State Consular Report of Birth Abroad	X	
Certificate of Naturalization	X	
Permanent Resident Card		X
Employment Authorization Document[†]		X
U.S. visa affixed to a foreign passport		X
REAL ID †	X	X

*Non-citizens with temporary documents would need to show that their lawful status has been extended to renew their Real ID.

[†] Does not, in itself, show lawful status.

Applicants will need to provide documentation showing either their social security number or demonstrate that they are in a non-work authorized status. Applicants providing an SSN will have to present their social security card, a W-2 or a pay stub showing their name and social security number. If the applicant does not provide documentation of an SSN, he or she must demonstrate non-work authorized status.

In addition to identity, lawful presence and social security number, the regulation requires that an applicant provide documentation showing the address of their principal residence. In the proposed rule DHS was prescriptive about the document characteristics. For the final rule, DHS has responded to State comments by giving them more discretion over the documentation required. To prove the address of principal residence, a person must present at least two documents of the State's choice that include the individual's name and principal residence.

IV.C.5. Validity period

The regulation requires that compliant DL/IDs remain valid for a period limited to eight years. If a State has maintained the source document images, the DMV may re-verify that information without requiring that the applicant re-present the source documents. States must establish an effective procedure to confirm or verify an applicant's identity each time a REAL ID drivers' license or identification card is reissued, and to ensure that the individual receiving the reissued REAL ID drivers' license or identification card is the same individual to whom the drivers' license or identification card was issued originally. Except for the re-issuance of a duplicate card, States must re-verify the applicant's SSN and lawful status prior to reissuing the drivers' license or identification card. States must also verify electronically information that it was not able to verify at a previous issuance or renewal if the systems or processes exist to do so.

States may only issue a temporary or limited-term drivers' license or identification card to an individual who has temporary lawful status in the United States. States must require, before issuing a temporary or limited-term drivers' license or identification card to a person, valid documentary evidence, verifiable through SAVE or other DHS-approved means, that the person has lawful status in the United States. States shall not issue a temporary or limited-term drivers' license or identification card pursuant to this section:
- for a time period longer than the expiration of the applicant's authorized stay in the United States, or, if there is no expiration date, for a period longer than one year; and
- for longer than the State's maximum drivers' license or identification card term.

IV.C.6. Remote renewals

Under the requirements of the final rule, States may choose to continue, or implement the practice of, allowing remote renewals. However, once the in-person enrollment process is completed, compliant DL/ID holders will need to renew in-person at least once every 16 years. (This allows States to take an updated photograph.) For example, a DL/ID with a life-cycle of eight years can be renewed remotely every-other issuance. A DL/ID that is valid for only four years can be renewed remotely up to three times before the holder must appear in-person. States

will still re-verify an applicant's information as if the applicant had appeared in person. Except for the re-issuance of duplicate drivers' licenses and identification cards as defined in this rule, the State must re-verify pursuant to § 37.13 of the rule the applicant's SSN and lawful status prior to reissuing the drivers' license or identification card. The State may not remotely reissue a drivers' license or identification card where there has been a material change in any personally identifiable information since prior issuance, such as "name." Material changes must be established through an applicant's presentation of an original source document as provided in Subpart B of the rule, and must be verified as specified in § 37.13 of the rule.

IV.C.7. Front-end application processing

The rule does not directly regulate the application processing as experienced by an applicant. The one exception to this would occur when States take a photo of the applicant. The rule specifically requires that all REAL ID applicants be subject to digital facial image capture even if no license is issued. This means that applicants, regardless of whether they successfully receive a DL/ID or not, must have their photo taken. To ensure that this happens, DHS assumes that States will move the photograph to the beginning of the REAL ID application process in order to comply with the rule.

IV.D. Verification

The statute requires that all source documents be verified with their issuing agency. DHS has identified appropriate methods for verifying identity, lawful status, date of birth, and SSN with the issuing agency. DHS has also determined the appropriate method for States to verify that applicants have terminated any license that they hold in other jurisdictions.

IV.D.1. Identity, lawful status and SSN

States must verify the documents and information required under § 37.11 of the rule. DHS received numerous comments about the verification systems. DHS recognizes that some systems are available today while others will become available over time and included these considerations in extending the compliance dates and adding an additional waiver period. The final rule states that States shall use systems for electronic validation of document and identity data as they become available or use alternative methods approved by DHS.

Figure IV-2: Verification methods for required documents

Document	Verification method	Identity	Lawful status	SSN/ ineligibility	Address
Unexpired U.S. Passport	Department of State: CCD or other database	X	X		
Certified copy of birth certificate	Electronic Verification of Vital Event Records (EVVER)	X	X		
Consular Report of Birth Abroad	Department of State: CCD or other database	X	X		
Certificate of Naturalization	DHS: SAVE	X	X		
Permanent Resident Card	DHS: SAVE	X	X		
Employment Authorization Document	DHS: SAVE	X	X[A]		
US visa affixed to a foreign passport	DHS: SAVE	X	X[B]		
Other immigration documentation	DHS: SAVE		X[B]		
Continued duration of status (no document)	DHS: SEVIS via SAVE		X		
Real ID	State DMV databases	X			
Social Security Card	SSA: SSOLV			X	
W-2 or pay stub with name and SSN	SSA: SSOLV			X	
Other document with applicant's name and SSN	(Included as alternative only, would verify through SSOLV)			X	
Immigration status making applicant ineligible for SSN	DHS: SAVE			X	
State-determined address documents	Appropriate method determined by state				X

[A] The related SAVE verification, not the document, shows lawful status.

[B] Non-citizens with temporary documents would need to show that their lawful status has been extended to renew their Real ID.

DHS recognizes that the EVVE system is not ready for full implementation. The final rule provides for additional time for States to implement EVVE or another system that provides for the verification of birth records.

States will also need to verify the lawful status of applicants who are not U.S. citizens. One commenter wrote that for students and exchange visitors, information is provided in the Student and Exchange Visitor Information System (SEVIS) system, but SAVE and SEVIS are not yet linked. Several States wrote that they should not have to pay transactional costs for Federally-mandated verification through a Federal system. DHS believes the SAVE system has proven to be a highly effective means of verifying immigration status information for many DMVs and other Federal and State agency users for some twenty years. DHS is working with AAMVA and USCIS to improve the usability, accuracy, and reliability of the SAVE system even further, to include access to SEVIS and other data through SAVE. DHS is committed to expediting the improvement, design, development, deployment, and operation of verifications systems to support the requirements of the REAL ID Act and this rule.

Under the rule, States will verify SSNs with the Social Security Administration via SSOLV or an alternative approved by DHS. Verifications resulting in a "no match" will need to be resolved before the State issues a REAL ID. The lawful status verification will also serve to demonstrate that an individual is in a non-work authorized status. DHS is requiring that the name and social security number, not the document itself (e.g. W-2, pay stub with name and SSN), be verified with SSA via SSOLV.

IV.D.2. Address of principal residence

The rule will allow States to determine the list of documents required to establish an applicant's principal residence. The statute requires that those documents be verified with the issuing agency. However, DHS has determined that no system exists to verify that an address is the applicant's principal residence. Further, DHS has concluded that verifying the validity of documents that States choose to accept is impracticable. At this time, States will not be required to verify these documents with the issuing agency. Applicants, however, will be required to sign a statement affirming the accuracy of all information they provide and that the address they present is indeed their principal address. This, combined with the multiple documents will serve to validate an applicant's principal address.

IV.D.3. Termination of license in other jurisdictions

Prior to issuing a REAL ID, DHS will require that States verify that the applicant does not have a valid REAL ID drivers' license or a REAL ID compliant non-driver identification card in any other jurisdiction. If so, the State must verify that the other DL/ID has been or is being terminated. A State will accomplish this by querying all other jurisdictions' databases. The result will be that each individual may hold only one REAL ID compliant DL or ID

IV.E. Card production and issuance

The regulatory evaluation that accompanied the proposed rule assumed that States would migrate to central issuance. We did not change that assumption for the final rule. Although we believe this assumption continues to be reasonable, since some requirements of the final rule such as the production security requirements may be more efficiently met at a central location, we believe the rule provides more flexibility for the States such that they may have less incentive to move toward central issuance. The original proposal, which was very prescriptive in terms of card production, realistically could only have been achieved in a central issuance environment. By modifying these requirements, DHS is providing States with more latitude to calculate the benefits and costs of moving to central issuance prior to deciding to move to central issuance.

IV.E.1. Document issuance

The regulation does not explicitly require or prohibit any particular issuance system (e.g. over-the counter, central issuance or hybrid). As long as a State meets all of the requirements of the final regulation, it may use the issuance system that meets its needs. Depending upon the security features currently employed by the State and the number of potential production sites, the State may find it more economically feasible to alter its current business issuance model such as moving to a central or limited number of production and issuance locations.

IV.E.2. Design/Layout

The rule does not specify the exact design and layout of State issued DL/IDs. However, DHS is establishing some minimum standards that will affect the appearance of the card. To be accepted by a Federal agency for official purposes, REAL ID drivers' licenses and identification cards must include on the front of the card (unless otherwise specified below) the following information: full legal name, date of birth, gender, as determined by the State, unique Driver's license or identification card number, full facial digital photograph. The rule contains technical specifications about the photograph and other requirements.

Additionally, temporary REAL IDs will need to clearly state that they are temporary. Non-REAL IDs issued by compliant States will need to clearly state on their face that they are not acceptable for Federal official purposes and use a unique design or color that clearly distinguishes them from compliant licenses.

IV.E.3. Security Features

The proposed rule contained prescriptive card security requirements. DHS considered the input from the States and determined that minimum security requirements could better be achieved and maintained by providing more flexibility for the States. The final regulation stipulated that REAL ID cards must contain at least three levels of integrated security features, effectively combined to provide maximum resistance to counterfeiting, altering, substitution, and to prevent use to create a fraudulent document using components from legitimate drivers' licenses or identification cards. Prescriptive requirements have been replaced with performance-based requirements, and States may want to consider all card security options when evaluating the combination of such elements that best meet their security needs

IV.E.4. Machine Readable Technology

DHS now requires that States include a 2-D barcode on the DL/ID, using the PDF417 standard, that encodes the following pieces of information[36]:
  (a) Expiration date.
  (b) Full legal name, as recorded pursuant to § 37.17(a) of the rule.
  (c) Date of transaction.
  (d) Date of birth.
  (e) Gender.
  (f) Address as listed on the card pursuant to § 37.17(f) of the rule.
  (g) Unique drivers' license or identification card number.
  (h) Card design revision date, indicating the most recent change or modification to the visible format of the drivers' license or identification card.
  (i) Inventory control number of the physical document.
  (j) State or territory of issuance.

IV.F. Data

The final rule regulates the way that DMVs obtain and store images of source documents, the data contained in databases and the manner in which DMVs share that information with each other. States will also need to make adjustments to their data and IT systems to accommodate the business process changes designed to meet the requirements of the rule.

IV.F.1. Imaging and storage

The final rule requires that DMVs maintain copies of the source documents presented by an applicant. The final rule allows States to keep the scanned images either electronically or in non-electronic format (e.g. photocopies or microfiche).

IV.F.2. DMV databases and connectivity

The statute requires that State DMV databases contain "all data fields printed on drivers' licenses and identification cards issued by the State and motor vehicle drivers' histories, including motor vehicle violations, suspensions, and points on licenses."[37]   The final rule requires that, where available, State DMVs use electronic verification of source documents and also requires State DMVs to make their DL/ID databases available to other DMVs.

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[36] The PDF417 is an open source standard for two dimensional barcodes. It has been endorsed by the International Organization for Standardization (ISO).
[37] *REAL ID ACT of 2005*. Public Law 13, 109th Cong., 1st sess. (May 11, 2005), 202(d)(13).

IV.G. Security

The final rule requires States to ensure the security of production materials and facilities, conduct background checks on relevant employees and train their agents to recognize fraudulent documents. Additionally, DHS strengthened the privacy protection requirements by requiring States to prepare security plans for their systems as well as physical safeguards.

IV.G.1. Physical security of facilities and materials

The final regulation requires that States complete a security plan. DHS recognizes that with the varying types of facilities in the 56 jurisdictions the appropriate security techniques for each facility also vary. Consequently, DHS is not implementing prescriptive standards for physical security. Rather, the rule requires States to "ensure the physical security of locations where drivers' licenses and identification cards are produced, and the security of document materials and papers from which drivers' licenses and identification cards are produced." The final regulation also requires States to describe the security of facilities in their security plan.

IV.G.2. Employee background checks

The final regulation mandates that States perform employee background checks on appropriate staff. States are required to subject persons who are involved in the manufacture or production of REAL ID drivers' licenses and identification cards, or who have the ability to affect the identity information that appears on the drivers' license or identification card, or current employees who will be assigned to such positions ("covered employees" or "covered positions"), to a background check.

DHS has determined that some felony-level criminal offenses will be automatically disqualifying. Some offenses are permanently disqualifying while others only temporarily disqualify an applicant. Disqualifying offenses center around crimes committed for personal gain (e.g. extortion, bribery, forgery, embezzlement, smuggling, etc.) and mirror, though do not replicate, the disqualifying offenses used for hazardous materials endorsements. Also disqualifying is an indictment with a want or warrant until it is released. States will be responsible for completing the CHRC (including necessary fingerprint requirements) with the Federal Bureau of Investigation (FBI).

IV.G.3. Fraudulent document recognition training

The NPRM proposed, and the final rule requires, steps to improve internal procedures at DMVs as well as the physical drivers' license or identification card issued by the States. DHS believes that fraud detection training is an important element in an anti-fraud regime, and endorses the use of AAMVA's fraudulent document recognition training or equivalent by the States.

IV.H. Certification and Compliance

The required contents of the initial State certification have been amended in the final rule to delete the requirement for a copy of all statutes, regulations, and administrative procedures and practices related to the State's implementation program. DHS has amended the requirement in § 37.55(e) of the rule to 37.55(a)(2) of the rule, that a State's governor certify compliance to that a State's highest level official with oversight responsibility over the DMV certify compliance. In addition, the frequency of certification reporting has been modified to be similar to the three-year intervals required by several Department of Transportation programs. Thus, in accordance with §37.57 of the rule, "Annual State Certifications" has been removed.

V. COST ESTIMATES AND ALTERNATIVES ANALYSIS

DHS has estimated the marginal economic cost of implementing the final REAL ID regulation and its minimum standard for State-issued DL/IDs (See Figure V-1)   The net present value of the estimates, when discounted at three percent, range from $5.0 to 13.9 billion with a primary estimate of $8.4 billion. When discounting at seven percent, the net present value of the eleven-year estimate ranges from $4.1 to 11.4 billion with a primary estimate of $6.9 billion.[38]

The four largest cost areas, in descending order (in undiscounted dollars) are:

- opportunity costs to individuals ($5.2 billion),
- maintaining the necessary data and interconnectivity systems ($1.5 billion),
- customer service ($970 million), and
- card production and issuance ($953 million).

The largest impact category is the cost to individuals of obtaining source documents, preparing applications, and visiting DMVs. The magnitude of this category is driven largely by the fact that all applicants for a REAL ID will need to complete an application process similar to those of a first-time driver or a driver moving from one State to another.

The second largest impact category is the creation and maintenance of necessary data and interconnectivity systems. These systems will require substantial up-front effort to create but are likely to require smaller marginal increases in maintenance costs.

The third largest impact is on customer service. While the extension of the enrollment period in the final rule will minimize marginal increases in the number or flow of transactions, the rule accounts for estimated costs that increased transaction and wait times will produce. We assume that REAL ID should not substantially accelerate the rate of transactions, but the per transaction costs to States will increase.

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[38] In all tables presented in the Cost Estimate and Alternatives Analysis section, detailed numbers may not always calculate to the total due to independent rounding.

The fourth largest impact is the production and issuance of the REAL IDs themselves. The final minimum standards for REAL ID compliant cards are intended to make counterfeit production, tampering and other fraud more difficult. While some State cards may already meet the standards of the final rule, many States may have to upgrade their cards and production processes in response to the rule. These upgrades will also require a substantial up-front effort followed by smaller marginal costs for subsequent years.

Readers are advised that the estimates are subject to various assumptions and limitations. DHS has outlined its global assumptions, which immediately follow the cost summary figures. Other assumptions and limitations are in the discussion of each cost section. Each section also contains analysis of alternative options considered by DHS.

Figure V-1: Summary of marginal economic costs of the final regulation (millions)

Year	Use of ID documents	Applications	Verification	Document production and issuance	Data	Security	Certification	Total	Discounted (3%)	Discounted (7%)
1	$ 5.4	$ 13.1	$ 0.1	$ 299.7	$ 643.7	$ 209.6	$ 3.4	$ 1,175	1,141	1,098
2	0.5	310.0	-	22.7	96.7	21.9	3.8	456	430	398
3	0.5	910.9	1.9	60.1	96.7	20.1	3.8	1,094	1,001	893
4	0.5	780.2	1.7	56.6	96.7	20.3	3.8	960	853	732
5	0.5	757.2	1.8	58.5	96.7	20.2	3.8	939	810	669
6	0.5	670.7	1.6	56.9	96.7	20.0	3.8	850	712	567
7	0.5	1,077.8	3.4	87.3	96.7	20.0	3.8	1,289	1,048	803
8	0.5	696.7	2.7	74.8	96.7	20.1	3.8	895	707	521
9	0.5	677.5	3.0	81.1	96.7	20.1	3.8	883	677	480
10	0.5	606.7	3.0	78.6	96.7	20.1	3.8	809	602	411
11	0.5	388.6	2.7	76.8	96.7	20.1	3.8	589	426	280
Primary	**$ 10.4**	**$ 6,889.4**	**$ 21.9**	**$ 953.2**	**$ 1,610.5**	**$ 412.6**	**$ 41.2**	**$ 9,939**	**$ 8,405**	**$ 6,853**
Low	5.2	4,442.5	1.6	476.6	656.8	333.1	20.6	**5,936**	5,020	4,093
High	15.6	12,062.8	165.8	1,429.7	2,241.4	500.7	61.7	**16,478**	13,935	11,361

The above estimates represent the marginal economic cost of the final regulation. DHS has broken the primary estimate into opportunity costs and expenditures. Over eleven years $5.2 billion of the costs, which account for approximately 52.5 percent of the 11-year primary estimates, are opportunity costs borne by individuals. (See Figure V–2.)

Figure V-2: Opportunity cost to individuals, primary estimate (millions)

Year	Application preparation	Obtaining birth certificates	SSN card replacements	DMV visits	Total
1	$ 9.9	$ -	$ -	$ 3.2	$ 13.1
2	117.5	11.7	7.3	35.3	171.8
3	438.0	74.2	6.3	179.9	698.4
4	376.2	62.0	6.7	151.7	596.6
5	365.7	59.8	6.5	146.8	578.8
6	326.9	52.1	4.7	129.1	512.8
7	521.2	90.0	2.5	216.7	830.3
8	341.6	54.8	2.6	135.4	534.3
9	332.7	52.9	2.6	131.2	519.4
10	299.5	46.3	2.6	115.9	464.3
11	197.7	26.3	1.7	69.8	295.5
Primary	**$ 3,326.9**	**$ 530.1**	**$ 43.5**	**$ 1,314.8**	**$ 5,215.3**
Low	$1,831.6	$252.5	$32.6	$769.4	$2,886.1
High	$4,822.3	$945.8	$54.4	$2,234.4	$8,056.9

The Federal government, State governments, private industry and individuals must plan for the estimated $4.7 billion in expenditures shown in Figure V–3.

Figure V-3: REAL ID expenditures, primary estimate (millions)

Year	Use of documents	Source documents SSN cards	Source documents Birth certificates	Applications Information awareness	Applications Customer service	Verifications SAVE	Verifications SSOLV	Card production/ issuance	Data	Security	Certification	Total
1	$ 5.4	$ -	$ -	$ -	$ -	$ 0.1	$ -	$ 299.7	$ 643.7	$ 209.6	$ 3.4	$ 1,162
2	0.5	8.4	12.7	76.5	40.6	-	0.0	22.7	96.7	21.9	3.8	284
3	0.5	7.3	80.8	-	124.4	1.6	0.4	60.1	96.7	20.1	3.8	396
4	0.5	7.7	67.5	-	108.3	1.4	0.3	56.6	96.7	20.3	3.8	363
5	0.5	7.5	65.1	-	105.7	1.5	0.3	58.5	96.7	20.2	3.8	360
6	0.5	5.4	56.8	-	95.7	1.4	0.3	56.9	96.7	20.0	3.8	337
7	0.5	2.9	98.0	-	146.5	2.9	0.5	87.3	96.7	20.0	3.8	459
8	0.5	3.0	59.6	-	99.8	2.3	0.4	74.8	96.7	20.1	3.8	361
9	0.5	3.0	57.6	-	97.5	2.6	0.4	81.1	96.7	20.1	3.8	363
10	0.5	3.0	50.4	-	89.0	2.6	0.4	78.6	96.7	20.1	3.8	345
11	0.5	2.0	28.6	-	62.5	2.4	0.3	76.8	96.7	20.1	3.8	294
Total	$ 10.4	$ 50.3	$ 577.1	$ 76.5	$ 970.0	$ 18.6	$ 3.4	$ 953.2	$ 1,610.5	$ 412.6	$ 41.2	$ 4,724

The primary estimate of cost items that will be borne by States account for $3.97 billion, or approximately 40 percent of the 11-year total expenditures.[39] (See Figure V–4.)

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[39] States may cover these expenses by receiving grants, increasing user fees, increasing revenue by other means or decreasing other expenditures. DHS is unable to determine the various methods that States will employ to cover these estimated expenditures. The estimated expenses do not include the cost to issue duplicate birth certificates as individuals ultimately bear that cost through user fees, assuming fees are set for neutral net revenue. Regardless, the incremental cost associated with those needing to obtain verifiable birth certificates, including fees and opportunity costs, is shown in Table V-34.

Figure V-4: State government expenditures, primary estimate (millions)[40]

	Applications		Verifications		Card				
Year	Information Awareness	Customer Service	SAVE [a]	SSOLV	production/ issuance	Data	Security	Certification	Total
1	$ -	$ -	$ 13.8	$ -	$ 299.7	$ 601.9	$ 209.6	$ 1.1	$ 1,126.1
2	76.5	40.6	(0.1)	0.0	22.7	92.7	21.9	1.5	255.8
3	-	124.4	0.4	0.4	60.1	92.7	20.1	1.5	299.5
4	-	108.3	0.4	0.3	56.6	92.7	20.3	1.5	280.1
5	-	105.7	0.4	0.3	58.5	92.7	20.2	1.5	279.2
6	-	95.7	0.4	0.3	56.9	92.7	20.0	1.5	267.4
7	-	146.5	0.8	0.5	87.3	92.7	20.0	1.5	349.3
8	-	99.8	0.6	0.4	74.8	92.7	20.1	1.5	289.8
9	-	97.5	0.7	0.4	81.1	92.7	20.1	1.5	294.0
10	-	89.0	0.7	0.4	78.6	92.7	20.1	1.5	282.9
11	-	62.5	0.6	0.3	76.8	92.7	20.1	1.5	254.5
Total	$ 77	$ 970	$ 18.6	$ 3	$ 953	$ 1,529	$ 413	$ 15.9	$ 3,965

[a] The Federal Government assumes $13.8 million of the estimated costs for SAVE verifications.

OMB also instructs agencies to "identify the effects of the rule on... economic growth," noting that, "rules with annual costs that are less than one billion dollars are likely to have a minimal effect on economic growth."[41]   Although the rule has estimated costs of more than one billion dollars in more than one year, it is not likely to substantially hinder long-term economic growth because it represents a small and diminishing percent of gross domestic product (GDP).The DHS primary estimate is 5 one-thousandths of one percent of GDP over eleven years with the first two years high of 8 one-thousandths of one percent. (See Figure V–5.)

Figure V-5: REAL ID costs as a percent of GDP

		Primary	
		Real ID	
	Annual average	estimate	Real ID as
Year	GDP (millions)	(millions)	percent
1	$ 13,842,158	$ 1,175.0	0.008%
2	14,530,553	455.7	0.003%
3	15,303,723	1,094.0	0.007%
4	16,072,730	959.7	0.006%
5	16,844,225	938.5	0.006%
6	17,652,150	850.3	0.005%
7	18,511,743	1,289.4	0.007%
8	19,422,038	895.2	0.005%
9	20,381,270	882.7	0.004%
10	21,394,173	809.4	0.004%
11	22,457,414	589.2	0.003%
Total	$ 196,412,174	$ 9,939.1	0.005%

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[40] This estimate does not include States' cost to produce replacement birth certificates. The analysis assumes that birth certificate fees reflect the States' costs to issue replacements, thereby placing the burden squarely upon the individual. These costs are shown in Figure V-34, Marginal Cost for applicants to obtain identity source documents.
[41] Ibid.

The final rule's effects will occur primarily as States prepare for implementation and enrollment of their DL/ID holders. The costs to individuals occur in later years beginning in 2011 as people obtain source documents and acquire their first REAL ID. There is no reason to expect that the long-term growth rate would be significantly or substantially impeded.

V.A. Assumptions, Uncertainty, and balancing conflicting public needs

In order to complete the analysis, DHS made various assumptions. As with any analysis, the incorporation of assumptions also brings varying levels of uncertainty to the final estimates. In order to analyze the impacts of the regulation, DHS made a number of assumptions in the original evaluation and asked for public comment. After reviewing all of the public comments and extensive consultations with the States, DHS made numerous changes to the rule for its final form.

V.A.1. Assumptions: Final versus NPRM

This section outlines the assumptions that apply throughout the analysis and the largest sources of uncertainty to the analysis of the REAL ID regulation.

1) All States will comply in accordance with the timeline below.

DHS recognizes that some States will be unable to comply by May 2008 and will file requests for extensions that may result in phased compliance implementation schedules that could mitigate some of the startup costs examined below. Hence, the costs allocated to the period prior to May 2008 have been redistributed to subsequent years.

The timeline highlights are shown below:

Figure V-6: Timeline
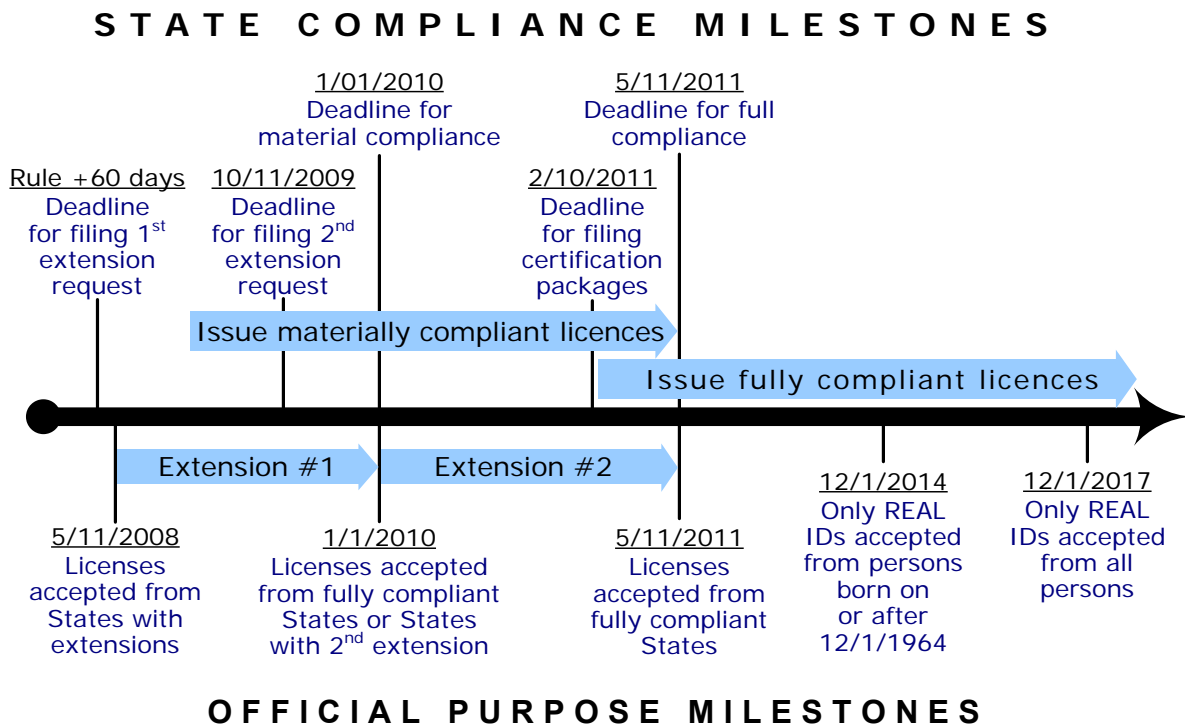
S T A T E   C O M P L I A N C E   M I L E S T O N E S

O F F I C I A L   P U R P O S E   M I L E S T O N E S

2) Seventy five percent of the nation's DL/ID holders will seek a REAL ID credential.

The original NPRM assumed that 100% of the candidate population would seek to obtain REAL IDs. This assumption was combined with two additional assumptions, namely that:

- States will not require all individuals to obtain a REAL ID;
- Some States will continue to issue non-compliant licenses along with REAL IDs

The Department has reviewed the 100% assumption and concluded that it is unrealistic. If States do not require all applicants to obtain REAL IDs, it is highly improbable that 100% of the population will apply. It is difficult to cite any example of a truly voluntary course of action that results in 100% compliance. If States offer a choice of either compliant or non-compliant licenses to applicants, some portion of the population will choose to receive a non-compliant license because:

- They do not need a REAL ID for Federal official purposes
- They already possess a substitute document – for example, a U.S. passport – that will serve the same purpose as a REAL ID

Thus, the Department has reconsidered and eliminated the assumption that every individual 16 or older will seek to obtain a REAL ID within the timeframe of this analysis.

The difficult question, therefore, is what level of participation in REAL ID can be realistically expected? What should be the primary estimate for participation by the American public in REAL ID?

The Regulatory Evaluation proposes a primary estimate of 75% based upon the following analysis.

- A significant number of States will not require that all residents seeking drivers' licenses or identification card obtain a REAL ID. Eight states currently issue licenses to individuals who cannot demonstrate lawful status and a significant number of States are likely to make REAL IDs an option.
- 25% of the population already holds a valid passport and the Department of State anticipates that this figure will increase to approximately 33% in the next few years. Individuals with valid passports do not need to obtain a REAL ID.
- 20% of the population has never flown on a commercial airplane and 47% flies "rarely or never." This second group is unlikely to need a REAL ID and members of this group are highly unlikely to belong to the group of valid passport holders.
- These two groups combine to constitute a group of at least 40% of the population that will not need to obtain a REAL ID. Assuming that some proportion of this group will seek to obtain a REAL ID regardless of imminent need, we arrive at a conservative estimate of 25 % of the candidate population that will not seek to obtain a REAL ID.

In the first instance, a significant number of States with a significant proportion of the adult population will not compel their entire adult populations to obtain a REAL IDs based upon current State statutes and long-standing State policies.

- Eight States currently issue licenses to undocumented immigrants: Michigan, Maryland, Hawaii, New Mexico, Oregon, Utah, Washington, and Maine.

- A number of States have already announced their interest in deploying a "mixed model" or "multi-tier system" for license issuance. In this model, REAL IDs would be issued to individuals requesting them on a voluntary basis. REAL IDs would be issued as an option to replace legacy licenses that would not be valid for official purposes. Individuals seeking REAL IDs would be subject to additional documentation and verification processes and would obtain a card with specific security markings unique to REAL IDs. Such a system is effectively in place for Commercial Driver's Licenses where applicants must provide additional documentation and undergo special verification procedures. Moreover, DHS is proposing to work with individual States to facilitate the issuance of Enhanced Driver's Licenses (EDLs) that comply with the provisions of the Western Hemisphere Travel Initiative (WHTI). Border States likely to issue EDLs include 55% of the total population 18 years and over of the United States. While the requirements for EDLs and REAL IDs are different, States seeking to issue EDLs will necessarily implement a business model that supports a "multi-tier" issuance system. While some States may require that all residents seeking to obtain a drivers' license or identification must comply with the requirements of the REAL ID Act, it is likely that many States

will at least initially offer REAL IDs on a voluntary basis to their residents. Obtaining a REAL ID will be a matter of choice not State mandate.

Therefore, the percent of the population seeking REAL IDs will be primarily driven by the proportion of the adult population that needs a REAL ID to qualify for the "official purposes" proposed under the REAL ID Act of 2005 and the final rule. REAL ID issuance will be largely demand-based and not the product of State mandate.

Consequently, how does the Regulatory Evaluation arrive at the assumption that 75% of the adult population will demand REAL IDs?

First, a significant proportion of the adult population does not need to acquire a REAL ID because it already possesses a U.S. Government-issued document that will satisfy the requirements for a REAL ID as well as all other travel requirements – a U.S. passport. As of June 2007, approximately 78 million individuals or approximately 25% of the total population held valid passports.[42] These individuals do not need to acquire REAL IDs. Moreover, the number of American citizens holding valid passports is estimated to increase significantly in the coming years, partly due to the requirements of other DHS regulations. The Department of State (DOS) issued approximately 17 million passports in FY 2007, an increase of 33% over FY 2006. The Department of State projects that the demand for passports will be nearly 23 million in 2008 and possibly as high as 30 million by 2010.[43] Based upon these projections, approximately one-third of American citizens will hold a valid passport by January 2010, the date by which all States must begin to issue DL/IDs that are materially compliant under the final rule. We can assume that a large proportion of this group of passport-holding individuals will choose not to obtain REAL IDs. While many individuals within this large group will also choose to obtain a REAL ID, none will be required to unless States choose to make REAL IDs mandatory.

Second, a significant proportion of the adult population of the United States will not need a REAL ID because they do not fly on commercial airlines or need documentation to enter federal facilities. While information on population accessing federal facilities cannot be obtained, it is assumed that the most frequent use of a REAL ID would be to access commercial aviation. In this case, statistics are available. According to a series of recent Gallup polls, approximately 20% of the American population has never flown in an airplane and around 47% respond that they rarely if ever fly on an airplane.[44] While some members of this group of non-flyers would likely acquire REAL IDs in order to access Federal facilities, the demand for access to commercial aviation would seem to be much larger than that for access to Federal facilities.

Therefore, there are two population groups that do not need and thus, significant portions are unlikely to seek REAL IDs. These two groups are not likely to overlap because most Americans who to date have obtained passports are believed to have obtained them in anticipation of some

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[42] Testimony of Maura Harty, Assistant Secretary of State for Consular Affairs, before the Senate Foreign Relations Committee, International Operations and Organizations Subcommittee, June 19, 2007, at http://travel.state.gov/law/legal/testimony/testimony_806.html.
[43] Ibid.
[44] Statistics reported in The Airline Handbook, issued by the Air Transport Association and located at http://members.airlines.org/about/d.aspx?nid=7954 and by the Gallup Organization at http://www.gallup.com/poll/1579/Airlines.aspx.

commercial airline flight.   While some significant percentage of these two groups may indeed choose to obtain a REAL ID, these two population sets are largely disjoint. In other words, individuals possessing passports are highly unlikely to be non-flyers and non-flyers are highly unlikely to want or possess U.S. passports. The intersection of these two sets is probably quite small. Thus, the percent of the American population that does not need and will not demand REAL IDs is likely to be closer to the union of these two sets than to their intersection. If 20% of the population never flies and one-third of the population will be carrying a valid U.S. passport by 2010, then approximately 50% of the population will not need to acquire a REAL ID.   If we assume that one-half of this 50% will seek a REAL ID regardless of need, or live in states that only offer REAL-IDs, then we arrive at an estimate that 25% of the total population will not seek or obtain a REAL ID. Thus, this economic analysis assumes that only 75% of the candidate population will obtain a REAL ID within the eleven year timeframe of this regulatory evaluation.

3) States will issue both REAL IDs and non-REAL IDs.

DHS anticipates that States will offer an alternative DL/ID (not acceptable for Federal official purposes) to those who are unwilling or unable to obtain a compliant one. In no instance are we aware of any State that will issue only REAL IDs. A number of States have reported that they issue or plan to issue licenses to individuals that cannot document lawful status. Other States allow individuals to hold both a drivers' license and identification card. Finally, a number of States have evaluated or expressed interest in offering REAL IDs as an additional, voluntary license. Thus, this Regulatory Evaluation assumes that States will deploy a two-tier or multi-tier licensing system. States instead may choose to issue only REAL ID compliant drivers' licenses and identification cards, thereby reducing their operational and system costs.

4) All IT systems will be functional by May 11, 2011.

The NPRM assumed that all IT systems would be functional by May 11, 2008. DHS now recognizes that this assumption was overly optimistic. Therefore, DHS has extended the deadline for compliance with the rule until May 11, 2011 to give the States, Federal agencies, and non-governmental organizations like the American Association of Motor Vehicle Administrators (AAMVA) the time to complete the communications and IT infrastructure needed to implement REAL ID. Therefore, DHS has recalculated the costs assuming that all required verification data systems are operational and fully populated by May 11, 2011, the deadline for full compliance by States. DHS is working to bring these systems online and up to standards as soon as possible and will work with the States to develop alternative procedures.

5) State impact is not uniform due to progress already made in some States.

States that have already invested in improving the security of their licenses will have to invest far less per capita than States with less secure licenses and issuance processes. Those States that are more advanced will incur lower compliance costs than other States.

6) The typical validity period of drivers' licenses in a given State is the validity period for all DL/IDs in that State.

DHS is aware that within a State DL/IDs often have varying validity periods but was unable to determine how many people held each of these varying types of credentials and when they were issued. (For more details, see the discussion of Validity Periods in the Status Quo section.) Also, the final regulation creates a one-year license for certain aliens. DHS was able to determine that some people already hold such licenses, but not *how many* people hold them. DHS was also unable to determine how many people will hold them under the REAL ID rule. While this methodology has limitations, using the typical validity period of DL/IDs was the most reliable method available to estimate future issuances.

7) Those drivers who would be required to comply later in the issuance cycle will take advantage of this delayed compliance.

DHS has computed the costs for the over age 50 drivers by moving that segment of renewals towards the 2017 deadline. DHS assumes the distribution over time for renewals is similar to the rest of the population. Therefore these license renewals are not bunched up but entered as the same distribution as other drivers but with the last of the pool completing in 2017.

8) The cost of lost/stolen DLs/IDs and central issuance is included in the cost of this final rule.

The regulatory evaluation for the proposed rule assigned the cost of having to replace a lost or stolen legacy ID with a REAL ID as being a regulatory compliance cost. This means that if an individual loses his/her legacy license, the burden of replacing it with a REAL ID requiring an in-person visit was attributed to this rulemaking. The regulatory evaluation for the final rule employs the assumption that individuals who replace their lost or stolen legacy license will choose to obtain a REAL ID and pay the additional opportunity costs of an in-person visit to the DMV with the required source documents. After careful consideration, we believe that this assumption may be conservative based upon the revised requirements of the final rule. The enrollment periods of REAL ID have been designed to enable DMVs to enroll individuals with REAL IDs on their normal renewal cycles to the maximum extent possible. Individuals simply replacing a lost or stolen license are likely to want a replacement license as quickly as possible and delay the process of obtaining a REAL ID until their scheduled renewals. However, we maintain the original assumption in this economic analysis because we cannot estimate the different rate at which lost or stolen licenses will be replaced with REAL IDs. Therefore, we assume the rate to be 75% or the same as that for renewals.

The regulatory evaluation still assumes that States will move to central issuance because of the high cost of printing equipment for REAL ID cards. However, the final rule provides added flexibility and therefore States may not have to do this. We are not adjusting this regulatory evaluation to account for this due to uncertainties in States' behavior under the revised provisions of this final rule, and because there are remaining requirements in this final rule that may still make central issuance the most efficient response.

9) The cost of security markings on REAL ID cards.

Based on discussions with State drivers' license card vendors, we have estimated the cost for a security marking for compliant cards to be $0.25 per card, and have included this cost estimate in the card production analysis later in this document.

The final rule also requires that if a State issues a license that is not in compliance with REAL ID, the State must by statute and regulation indicate on the document that it is not valid for official federal purposes. According to U.S. license vendors contacted by DHS[45], there is typically an upfront one time set up fee for the State, which may include license redesign, system reconfiguration, and other related costs. Based on our analysis of information received from vendors and States, DHS estimates that the added cost would be about $10,000 per State, or $.01 per document. The actual cost will vary depending on the State, vendor and any existing contractual agreement they may have concerning design changes. DHS believes that the added cost of no more than $0.01 per document will be indirectly incurred by those individuals who will be acquiring REAL IDs.

V.A.2. Estimate Uncertainty

OMB Circular A-4 requires a formal quantitative treatment of uncertainty for rules expected to have costs or benefits exceeding $1 billion in any one year. Because the estimated costs of implementing the Real ID program exceed $1 billion in nearly all 11 years following the program's commencement, we have conducted formal assessment of the effects of uncertainty for some of the more significant variables affecting these cost estimates. Circular A-4 identifies three factors that may be considered in the formal treatment of uncertainty, including uncertainty about the inputs or outcomes related to the regulation's implementation or impact, uncertainty about the economic costs associated with these factors, and uncertainty about important assumptions that are used to keep the regulatory impact analysis tractable.

The significant sources of uncertainty in the cost estimates for the REAL ID program identified below include examples of all three of these. These sources of uncertainty were chosen based on their materiality to the overall estimated costs of implementing REAL ID, their significance within the overall cost structure and the potential for conducting a relatively straightforward assessment of the uncertainty that could be clearly communicated to readers. There are many factors that influence the costs of implementing the REAL ID program, and strictly speaking, uncertainties are associated with each of them. It is neither feasible nor practical to attempt to model each of these uncertainties, which may be related to one another in complex ways. Instead, we have focused on the four specific sources of material uncertainty in the costs of REAL ID.

In some cases it is possible to calculate probability distributions that characterize the uncertainty for variables we have chosen for this analysis, and to use them to report expected values and measures of variability. These calculations may be done using either direct calculation from the probability distributions or by using Monte Carlo simulation of repeated sampling from the distribution of interest. Both techniques are used in the following analysis. In other cases, there is not sufficient information to create a numerical distribution that characterizes a specific

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[45] Based upon conversations between the REAL ID program office and U.S. license vendors, December, 2007.

uncertainty, although the nature and importance of the risk or uncertainty identified can be qualitatively described and related to historical data similar in nature. DHS believes the NPRM uncertainty analysis provided substantial information for public comment and agency decision making. However, as required by Circular A-4, the uncertainty analyses are being recomputed and will be published in a forthcoming final regulatory impact assessment.

Opportunity Costs to Real ID Recipients

As discussed in the cost analysis, those who must apply for a REAL ID card must devote time to a variety of activities, such as acquiring documents and waiting for service at drivers' license bureaus. This time could be used in more enjoyable or remunerative ways by these individuals, so the imposition of the REAL ID process represents an *opportunity cost* to them. DHS has identified two sources of uncertainty affecting the aggregate societal costs associated with these opportunity costs. Although one of these sources of uncertainty turns out, upon further analysis, not to contribute materially to the variability of annual opportunity costs, both are discussed below.

The value of time for individuals has long been a topic of interest to economists, and a large body of literature exists which discusses the issue from many points of view. An important subfield in this area addresses the value of time for travelers, who may face delay or lost time due to transportation system glitches or congestion, and who may reap time savings due to technological or institutional improvements in transportation systems and infrastructure. A summary of some of this literature, in general and in transportation specifically, has been compiled by TSA.[46] A copy of this literature review is included with this regulatory evaluation as an appendix.

The wage rate (with or without the cost of employment fringe benefits such as insurance) is often used as a proxy for the value or opportunity cost of time for individuals, since time spent in such personally unproductive pursuits such as acquiring a REAL ID card could have instead been put to productive use. However, since wage rates vary across individuals, so too does the opportunity cost of time vary across individuals. The baseline analysis conducted in the regulatory evaluation uses average national wage rates from the Bureau of Labor Statistics (BLS), but BLS also publishes some percentiles for national wage rates, and these percentiles could be used to develop a distribution for wage rates which could in turn be used to more accurately represent the uncertainty about the actual opportunity costs incurred by those acquiring the REAL ID card. This is important to consider because it is not known which individuals will need to pursue any particular step in the process of acquiring a REAL ID/DL.

BLS reports national wage rates for several percentiles within the national distribution of wages and compensation; these rates are reported for both simple wages and salaries and for fully loaded wage and salary rates that include the value of fringe benefits and non-monetary compensation. In its analyses of opportunity costs for those applying, DHS has used these simple unloaded rates since these rates reflect the value to individuals of compensation that would have been received for the time they spend occupied on REAL ID. BLS reports hourly compensation rates at the national 10th, 25th, 50th (median), 75th and 90th percentiles; for this

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[46] *Opportunity Cost of Travel Time*, GRA, Inc., prepared for Transportation Security Administration, 2006.

analysis linear interpolation has been used to generate wage rates at each 5% percentile. The distribution of national wage rates is shown in Figure V–7.

Figure V-7: Distribution of BLS Simple Wage/Salary Compensation

5%	$ 5.77
10%	$ 7.21
15%	$ 7.93
20%	$ 8.64
25%	$ 9.36
30%	$ 10.28
35%	$ 11.21
40%	$ 12.13
45%	$ 13.06
50%	$ 13.98
55%	$ 15.57
60%	$ 17.16
65%	$ 18.76
70%	$ 20.35
75%	$ 21.94
80%	$ 25.73
85%	$ 29.53
90%	$ 33.32
$\geq$ 95%	$ 37.11

This distribution has a mean of $18.00, a variance of 102.8 and standard deviation of $10.14.

The information from this distribution can be used to identify the uncertainty inherent in annual opportunity cost estimates in the following way. For the third year of the REAL ID program, opportunity costs to individuals who are completing the process of obtaining a REAL ID total $698 million (Figure V–2 in the regulatory evaluation). This total results from a costing out of hours devoted to this process during the second year of REAL ID. Applying the percentile distribution of actual U.S. wage and salary rates to this number of hours results in a mean or expected opportunity cost in the second year of REAL ID of $698 million, but this total is uncertain and is distributed with a standard error of $10.14 times the square root of the total number of hours, or approximately $103,000. This result reflects the fact that the large sample size reduces the impact of variability. For this reason DHS does not regard this source of uncertainty as a significant one with respect to the opportunity costs associated with REAL ID.

A second and more significant source of uncertainty about the aggregate opportunity costs that will be incurred by those obtaining REAL IDs is uncertainty about the number of individuals who will actually seek a REAL ID and thereby incur those costs. DHS has represented this uncertainty in the following way:
- Assumed that those seeking a REAL ID will be lawfully present in the United States (an assumption which reduces the number of potential seekers of REAL IDs from 296,507,061 by approximately four per cent to 285,507,601). Note: The final rule assumes that 25 percent of the population will not seek a REAL ID.

- Assumed that the distribution for the percentage of these individuals who will seek a REAL ID will have a maximum at 100 per cent of this number (which is 96.29% of the total U.S. population), and a minimum at 60 per cent of this number (or 57.77% of the total U.S. population), leaving the midpoint at 80 per cent (or 77.03% of the total U.S. population).
- Use Monte Carlo simulation to model the uncertainty about the actual proportion of the U.S. population who will seek the REAL ID, using two types of distribution:
  - A uniform distribution between the maximum and minimum percentage values
  - A symmetrical triangular distribution between the maximum and the minimum percentage values, with mode/median/mean value at the midpoint percentage value
- For each of these distributions on the population percentage, run the Monte Carlo simulation to create a distribution on the aggregate opportunity cost associated with it

The results from each of these simulations are reported below.

When the uniform distribution is used, the distribution of total opportunity costs due to seeking the REAL ID has characteristics as indicated in Figure V–8.

Figure V-8: Simulated Distribution of Aggregate Opportunity Costs
(Uniform Distribution on Proportion of Population Seeking REAL ID)
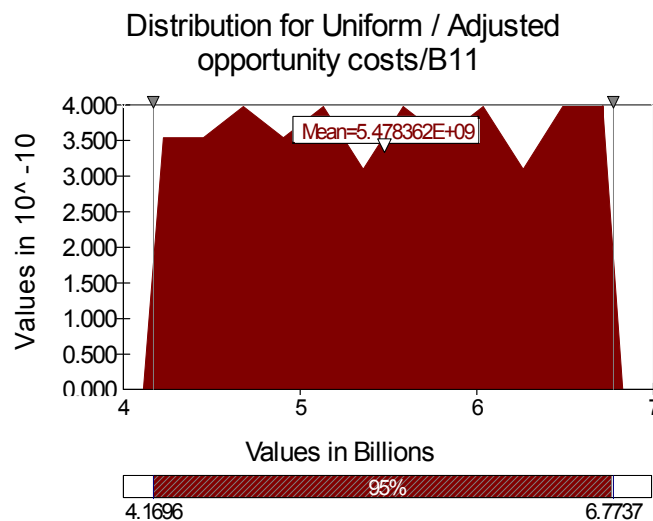
In this simulation, estimated values for aggregate opportunity costs range from $4.1 billion to $6.8 billion, with a mean of $5.5 billion. As shown in the figure, 95 per cent of the estimated values range between $4.17 billion and $6.77 billion.

Aggregate opportunity cost results using the triangular distribution on the proportion of the population seeking a REAL ID are shown in Figure V–9 below.

Figure V-9: Simulated Distribution of Aggregate Opportunity Costs
(Symmetrical Triangular Distribution on Proportion of Population Seeking REAL ID)

Distribution for Triangular / Adjusted opportunity costs...

Mean=5.48104E+09
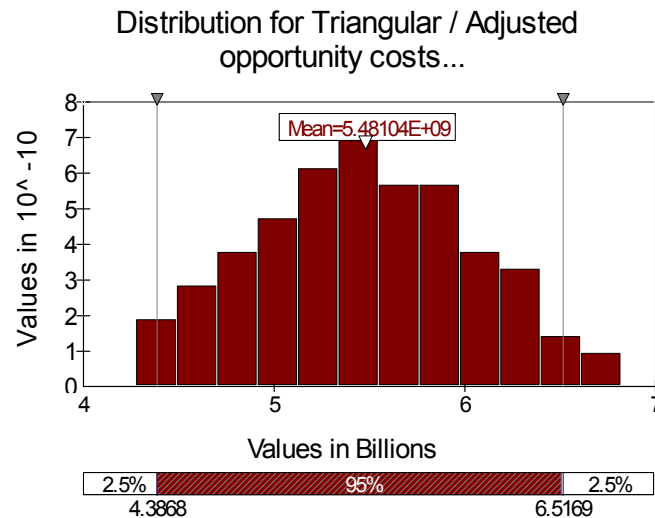
For this simulation, estimated values for aggregate opportunity costs range from $4.2 billion to $6.8 billion, again with a mean of $5.5 billion. As shown in the figure, 95 per cent of the estimated values range between $4.38 billion and $6.52 billion. In addition, due to the assumption that a triangular distribution lay behind this aggregate result, the values are more concentrated around the mean value.

These estimates do not take account of other factors contributing to the costs of the REAL ID program, such as State costs or card production costs. In addition, it was assumed for this analysis that all States will choose to participate in the REAL ID program; if several States do not participate, the range of population proportions will change accordingly.

Card Production Costs

A significant direct cost associated with the REAL ID program is the physical preparation and production of program-compliant identity cards or documents for individuals. The DHS best estimates for these costs are presented in Figure V–64, and these costs are an essential part of the overall cost of implementing the REAL ID program. However, the environment in which this production process will evolve is uncertain in several ways. In any complex production process, especially one producing a single type of good, there may be production economies over time, due to learning effects as well as the possibility of production innovations that will reduce the per card production cost. Because the production process is likely to be covered by multi-year, fixed price contracts between private firms and the government, there is an incentive for firms to seek such cost-reducing innovations to reduce their own costs. At the same time, the government will be aware of these innovations to some extent, since security requirements will cause the government to monitor any production process changes to ensure that security effectiveness is not compromised.

These possible cost-reduction outcomes may be tempered by uncertainties in the evolution of the security environment. Security efforts often resemble an arms race, with effective security

measures rendered less effective by the malicious actions of our foes. DHS believes that the cost of cards will be lower than the cost of cards estimated for the proposed rule for two reasons. First, DHS has adopted a performance-based approach to card security rather than the more costly prescriptive-based approach outlined in the NPRM This approach recognizes that "one size does NOT fit all", and provides needed flexibility for States to implement efficient and secure solutions while maintaining the intent of the Act.

Second, even before 9/11, States have continually monitored and upgraded the security of their documents, depending upon their particular needs. When license contracts are up for renewal or re-bidding, States typically seek improvements to the security of their documents, which impacts the per-document cost.

Replacement Rates for Driver's Licenses and Social Security Cards

In the NPRM, a somewhat unique cost driver within the REAL ID program was the number of people who needed to replace lost identification documents such as Social Security cards, birth certificates or drivers' licenses in order to successfully apply for a REAL ID. These replacement obligations imposed costs on both States and individuals. While data exists on the rates at which Social Security card replacements or drivers' license replacements are requested, it was not certain how this rate would manifest itself in the future. To model this uncertainty in the absence of information about the distribution of this uncertainty, DHS used the uniform distribution, which is commonly used in settings such as this, when little or no information is available about the shape of a probability distribution.

To establish a range of possible replacement rates to apply, DHS considered the current replacement rate for Social Security cards, 4.09% per year, and the nationwide average for drivers' license replacements, 10.17% per year. The Social Security card replacement rate was used as the lower bound for the uniform distribution to be considered, and the upper bound was set at double the drivers' license replacement rate average, or 20.34%.

Thus, we specified a uniform distribution for the replacement rates for REAL ID licenses as defined for values between 4.09% and 20.34%. Using standard formulas for this distribution,[47] the mean or average is (4.09% + 20.34%)/2 or 12.22%. The variance is [(20.34% - 4.09%)^2]/12, or 0.0022, with standard deviation of 4.7%. The frequency with which replacement cards must be acquired will affect Real ID card implementation costs by causing individuals who need a replacement card to seek one earlier than normal expiration cycles would require.

Under the final rule, individuals losing their legacy drivers' licenses will not be required to replace them with REAL IDs until expiration of the applicable enrollment period (2014 or 2017). States will be able to re-issue existing drivers' licenses to individuals without having them provide the source documents required for REAL ID. Any additional requirements are up to the States' discretion. Therefore, this rulemaking does not impose any additional cost on individuals to obtain a re-issuance due to a lost or stolen drivers' licenses.

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[47] See, for example, Kokoska and Nevison, *Statistical Tables and Formulae,* Springer-Verlag, 1989, p.7.

Software Development and IT Risks and Uncertainties

A final important source of uncertainty about the outcome of the REAL ID program lies in the assumptions used in the cost analysis for the program. This is not a criticism of the use of assumptions, since for any complex analysis it is essential to have clearly defined assumptions that govern the scenario under analysis. The cost analysis assumes that IT systems will be functional by the deadline for full compliance of May 11, 2011.

While it is important to maintain such an assumption in the analysis since it expresses the goal of the regulatory effort and is necessary to keep the analysis focused and tractable, it is equally important, from a risk analysis perspective, to consider the possibility that some of the IT systems necessary for the successful implementation of REAL ID will not become functional as scheduled or projected. This is true both because the IT systems and their coordination represent the backbone of the information management system represented by REAL ID and because there is ample historical evidence that complex IT systems often do not get finished on schedule, and frequently do not get finished at all.[48] In addition, this completion risk and other schedule and budget challenges appear to worsen as the underlying software/IT project becomes more complex.[49] It should be noted that the projects discussed in these papers are usually single (but large) IT or software development projects, while the IT challenges faced in the REAL ID program will involve coordinating updates for numerous and varied legacy software data management systems at each of the States.

The cost effects of schedule extensions that might be necessary for implementing the IT portions of REAL ID depend in part on the underlying causes of the extensions. If no significant shortcomings of the software design envisioned for REAL ID reveal themselves, and there is only schedule slippage without a need to reconsider important programming issues, the effect may be to spread costs over a longer time period. If, however, the programming challenges that must be met to implement REAL ID turn out to be greater than expected and require significant "midcourse corrections" then there may be significant unanticipated IT costs.

V.B. Use of identity documents

The people accepting DL/IDs for official purposes will need to become familiar with the new requirements and procedures. DHS has set an eight-year enrollment period for holders of previously issued DL/IDs. By December 1, 2014, individuals born on or after December 1, 1964 (or 50 years of age or under), using State-issued DL/IDs for official federal purposes will have to have REAL IDs. This represents approximately 60 percent of the entire population holding

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[48] M. Bronte-Stewart, *Developing a Risk Estimation Model from IT Project Failure Research*, http://cis.paisley.ac.uk/research/journal/V9/V9N3/failure.doc identifies a number of past studies of software and IT project failure rates and characteristics. A comprehensive bibliography of IT failure rate studies is also available in the paper.

[49] Capers Jones, *Social and Technical Reasons for Software Project Failures*, http://www.stsc.hill.af.mil/crosstalk/2006/06/0606Jones.html lays out a typology of risks that software and IT projects face, and analyzes industry experience with thousands of varied software and IT development and implementation projects. The bibliography in this paper is also wide ranging.

State-issued DL/IDs.[50] By December 1, 2017, all individuals using State-issued DL/IDs for official federal purposes will have to have REAL IDs. Until December 1, 2014, all DL/IDs issued by compliant States will be accepted for official purposes.

The NPRM included a five-year period for enrollment. DHS analyzed program enrollment period options ranging from zero to eight years, taking into consideration the current DL/ID validity periods for all jurisdictions. Enrollment periods of less than four years were quickly eliminated because every State's DL/ID typical validity period is at least four years. DHS estimated that 86.63 percent of credentials would naturally expire during the five year enrollment period. Extending the enrollment period to eight years would capture virtually the entire population without requiring people to renew their licenses earlier than they normally would have. (See Figure V–10.) This is advantageous to almost all affected parties because it provides added flexibility and time (i.e., more options) for compliance, compared to the NPRM. Adding flexibility and time usually translates into lower compliance costs.

Figure V-10: Cumulative natural expirations of DLs (percent of DL holders from cutoff date)[51]

Years after cutoff	Cumulative expirations (% of DL population)	Difference from previous period (percentage points)
4	74.68%	-
5	**86.63%**	11.95%
6	93.64%	**7.00%**
7	96.78%	**3.14%**
8	99.26%	**2.48%**
Date of last expiration	100.00%	**0.74%**

Based on this analysis, DHS believes for the Final Rule that the provision for an extended enrollment period from January 1, 2010 (including enrollment during the period of Material Compliance) through December 1, 2017 will allow almost all individuals to enroll in REAL ID within their normal renewal cycles. However, for those individuals 50 years of age or under who seek REAL IDs and live in States with renewal cycles greater than six years, enrollment may be accelerated in order to meet the required deadline of December 1, 2014.[52]

Given the final rule enrollment schedule, DHS has estimated the number of previously State-issued DL/IDs that are acceptable for official purposes. At the beginning of program year two there will be an estimated 232.7 million previously issued DL/IDs. (See Figure V–11.) (For details on how enrollments were estimated for each year, see APPENDIX A: POPULATIONS.)

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[50] U.S. Department of Transportation. Federal Highway Administration. *Highway Statistics 2005*. Available at < http://www.fhwa.dot.gov>.
[51] Based on DL life cycle data provided in AAMVA's first survey of 2006. DHS assumes even distribution of holders across the DL life cycle. DHS used a 9 year life cycle for the validity of all DLs that are valid for more than 8 years. This does not reflect lost/stolen cards.
[52] Under the final rule, the only individuals likely to have to enroll in REAL ID on an accelerated basis are individuals who meet the following conditions. They were born on or after December 1, 1964 and therefore must have REAL IDs by December 1, 2014. Their licenses expire in 2008 or 2009. They live in States with 7-year or 8-year renewal cycles and they live in States with that do not become Materially compliant until January 1, 2010 – the deadline for Material Compliance. Accelerated renewals are likely to occur in 2013 and 2014 (before December 1, 2014). Individuals with shorter renewal cycles will be able to obtain REAL IDs on their normal renewal cycle.

Figure V-11: DL/IDs remaining to be enrolled at the beginning of the program year (millions)

Year	DLs	IDs*	Total
1	215.0	17.7	232.7
2	213.5	17.6	231.1
3	189.7	15.6	205.4
4	170.3	14.0	184.4
5	151.7	12.5	164.2
6	135.9	11.2	147.1
7	106.6	8.8	115.4
8	89.9	7.4	97.3
9	73.9	6.1	80.0
10	60.3	5.0	65.2
11	53.8	4.4	58.3

* IDs do not include NH, UT or WV due to lack of data.

Employees accepting DL/IDs for official purposes will need to determine if the credential presented to them is from a compliant State. (That determination will be easy if every State complies.) In the case of boarding an aircraft, usually airline employees and airport security staff examine identity documents. While Federal agents, per se, do not examine DL/IDs for air travel, the airline and airport personnel do so in order to comply with Federal requirements. Where feasible, TSA has begun to take on this responsibility. Therefore, the rule requires that these personnel only accept a State-issued DL/ID if it is a REAL ID (The final rule says: " (b) On or after December 1, 2014 Federal officials shall not accept a drivers' license or identification card for official purposes from individuals born on or after December 1, 1964, unless such license or card is a REAL ID drivers' license or identification card issued by a State that has been determined by DHS to be in full compliance as defined under this subpart."). This will require—in practice, not as a matter of regulation—airlines and airports to train employees, as appropriate, on which States' documents are and are not acceptable. The primary estimate of opportunity costs to train all employees on the acceptance of DL/IDs is $10.4 million over eleven years with a low of $5.5 and high of $15.2 million. (See Figure V–12.) These estimates do not include the cost to develop training programs and materials nor do they include the cost to educate State, local or other non- Federal Protective Service (FPS) law enforcement on the new DL/IDs. The estimate also does not include the cost to train security personnel at nuclear power plants. The cost of developing the training materials will likely be minimal. The nature of the REAL IDs is such that they will be easily recognizable and any attempt to tamper with them should be readily apparent. Further, training for non-FPS law enforcement entities and security personnel may not impose a large marginal cost as they typically have routine meetings to discuss changes in procedures and highlight any current, new or changing issues relevant to the mission at hand. These meetings would be an appropriate time to brief other law enforcement and security officers on the REAL ID credentials. The Department did not receive any comments on these assumptions.

Figure V-12: Cost to train agents for the acceptance of DL/IDs (thousands)

Year	Cost to train airline personnel	Cost to train airport personnel	Cost to train FPS agents	Total cost to train for DL/ID acceptance
1	$ 4,974.3	$ 119.3	$ 354.9	$ 5,448.4
2	452.2	10.8	32.3	495.3
3	452.2	10.8	32.3	495.3
4	452.2	10.8	32.3	495.3
5	452.2	10.8	32.3	495.3
6	452.2	10.8	32.3	495.3
7	452.2	10.8	32.3	495.3
8	452.2	10.8	32.3	495.3
9	452.2	10.8	32.3	495.3
10	452.2	10.8	32.3	495.3
11	452.2	10.8	32.3	495.3
Primary	$ 9,496.4	$ 227.7	$ 677.5	$ 10,401.5
Low	4,748.2	151.8	338.7	5,238.7
High	14,244.5	303.6	1,016.2	15,564.3

DHS estimated the number of airline personnel to be trained in each year. The initial employees to train are the reservation and transportation ticket agents and travel clerks working in the scheduled air transportation industry. DHS then applied a turnover rate to allow for attrition. Multiplying the number of employees to train by the average time to train each and their fully loaded wage rate produces an eleven year opportunity cost estimate of $9.5 million to train roughly 207,000 airline personnel. (See Figure V–13.) The primary estimate was adjusted down and up by 50 percent to establish the low and high estimates of $4.7 and 14.2 million, respectively.

Figure V-13: Opportunity cost to train airline personnel[53]

Year	Employees to train	Turnover rate	Turnover employees to train	Total employees to train	Average hours to train	Average wage	Total cost to train (thousands)
1	98,530	10%	9,853	108,383	2	$ 22.95	$ 4,974.28
2	-	10%	9,853	9,853	2	22.95	452
3	-	10%	9,853	9,853	2	22.95	452
4	-	10%	9,853	9,853	2	22.95	452
5	-	10%	9,853	9,853	2	22.95	452
6	-	10%	9,853	9,853	2	22.95	452
7	-	10%	9,853	9,853	2	22.95	452
8	-	10%	9,853	9,853	2	22.95	452
9	-	10%	9,853	9,853	2	22.95	452
10	-	10%	9,853	9,853	2	22.95	452
11	-	10%	9,853	9,853	2	22.95	452
Primary	**98,530**		**98,530**	**206,913**			$ 9,496
Low (-50%)							4,748
High (+50%)							14,245

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[53] Employment data from: U.S. Bureau of Labor Statistics. *November 2004 National 4-digit NAICS Industry-Specific Estimates*. SOC: 43-4181. Available at <http://www.bls.gov/oes/oes_dl.htm>. NAICS code: 481100 (scheduled air transportation) accessed May 2, 2006. NAICS code 481200 (nonscheduled air transportation) accessed Jul 14, 2006.

In addition to the airline ticket-counter employees, airports currently hire employees to check identification documents and boarding passes in front of the TSA screening checkpoint clusters. DHS has identified 803 of these checkpoint clusters at airports around the country.[54] DHS is unable to determine an exact count of employees used to execute the identification check in front of TSA checkpoints. However, DHS has estimated that on average between two and four employees are required to staff these positions. This results in an estimated 1,600 to 3,200 employees. The primary estimate assumes an average of three employees per checkpoint cluster or 2,409 employees. All existing employees must receive the training, as must any new (e.g. turnover) employees.[55] The estimated opportunity cost to train 5,059 personnel is approximately $227,000. (See Figure V–14.)

Figure V-14: Opportunity cost to train airport personnel

Year	Base personnel to train	Personnel to be trained (10% turnover)	Total personnel to train	Average hours to train	Hourly wage	Total cost (thousands)
1	2,409	241	2,650	2.00	$ 22.50	$ 119.3
2	-	241	241	2	$ 22.50	$ 10.8
3	-	241	241	2	22.50	10.8
4	-	241	241	2	22.50	10.8
5	-	241	241	2	22.50	10.8
6	-	241	241	2	22.50	10.8
7	-	241	241	2	22.50	10.8
8	-	241	241	2	22.50	10.8
9	-	241	241	2	22.50	10.8
10	-	241	241	2	22.50	10.8
11	-	241	241	2	22.50	10.8
Primary	**2,409**	**2,650**	**5,059**			$ **227.7**
Low	1,606	1,767	3,373			$ 151.8
High	3,212	3,533	6,745			$ 303.6

As a policy option, TSA could decide to require machine readers for REAL IDs at airports. At this time, TSA rejects this policy option for a number of reasons. First, TSA does not require machine readers for other documents with machine readable zones (MRZs)e.g. passports). Second, the use of a REAL ID in place of a current DL/ID will enhance security by ensuring that passengers are who they say they are when checked against intelligence databases. Finally, requiring machine readers would impose an added cost upon air carriers and their agents. Nevertheless, DHS has estimated the cost for air carriers and airports to enable their agents to access the MRZ on REAL IDs. Most of the scanners would be fixed (via Universal serial bus (USB) or other cables) to a computer workstation. Other scanners would need to be portable for different operating environments (e.g. temporary checkpoints) but would communicate wirelessly with a computer workstation. The Department estimates that on average scanners would cost $250 and PC bundles would cost $766. (See Figure V–15.)

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[54] DHS used PARIS, a TSA database used to track performance and various incidents to identify screening checkpoints. May 3, 2006.

[55] DHS does not have specific data about the churn for these employees; the rate used is a standard assumption. DHS welcomes any specific data regarding this issue.

Figure V-15: Unit cost of PDF417 scanner platforms[56]

Item	Estimated unit cost
Handheld scanners (wired to PC)	$151
Portable scanners	$1,143
Average scanner (90% handheld, 10% portable)	**$250**
Scanner maintenance (10% of acquisition)	$25
PC bundle	$766
Maintenance (10% of acquisition)	$77

The Department assumes that each screening checkpoint would need both a scanner and a desktop workstation. The number of passenger check-in locations (e.g. curb side and ticket counter locations) was unavailable. (This is inconsequential to the overall cost estimate because this portion serves only as an analysis of a policy alternative. However, DHS assumes that check-in locations are typically computerized and would therefore only require the scanner, not the desktop workstation.) Without including scanners for passenger check-in areas, the policy alternative would require 803 scanners and 803 desktop workstations. (See Figure V–16.)

Figure V-16: Alternative policy option: Required scanners and platforms

Year	Screening checkpoints	Passenger check-in *	Total scanners	Total desktops
	A	B	(A+B)	(A only)
1	803	NA	803	803
2	803	NA	803	803
3	803	NA	803	803
4	803	NA	803	803
5	803	NA	803	803
6	803	NA	803	803
7	803	NA	803	803
8	803	NA	803	803
9	803	NA	803	803
10	803	NA	803	803
11	803	NA	803	803

* Data not available.

Multiplying the number of scanners and desktops in Figure V–16 by the cost estimates in Figure V–15 produces the total cost estimate of $11 million to supply airports with platforms to access the MRZ, which appears in Figure V–17. This cost estimate also does not contain any, possibly substantial, impact on airport waiting times for this scanner alternative.

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[56] Scanner and PC prices based on DHS internet search on Jun 14, 2006.

Figure V-17: Alternative policy option: Cost to outfit airports with platforms to read MRT

| | Scanners | | | Desktops | | | |
Year	Number required *	Acquisition (thousands)	Maintenance (thousands)	Number required	Acquisition (thousands)	Maintenance (thousands)	Total (thousands)
1	803	$ 201.1	$ 61.5	803	$ 614.7	$ 61.5	$ 1,741.7
2	803	-	61.5	803	-	61.5	925.9
3	803	-	61.5	803	-	61.5	925.9
4	803	-	61.5	803	-	61.5	925.9
5	803	-	61.5	803	-	61.5	925.9
6	803	-	61.5	803	-	61.5	925.9
7	803	-	61.5	803	-	61.5	925.9
8	803	-	61.5	803	-	61.5	925.9
9	803	-	61.5	803	-	61.5	925.9
10	803	-	61.5	803	-	61.5	925.9
11	803	-	61.5	803	-	61.5	925.9
Total		$ 201.1	$ 676.2		$ 614.7	$ 676.2	$ 11,001.1

* Does not include scanners for passenger check-in locations.

DHS Immigration and Customs Enforcement (ICE) houses the Federal Protective Service, which oversees the contract guards that protect Federal facilities. ICE reports having 10,000 armed contract agents. Applying a 10% turnover rate for eleven years produces an estimate of 21,000 armed contract agents to be trained in the acceptance of DL/IDs. (See Figure V–18.)

Figure V-18: Number of agents to be trained for other official purposes[57]

Year	Baseline armed contract agents	Turnover (10%)	Total
1	10,000	1,000	11,000
2	-	1,000	1,000
3	-	1,000	1,000
4	-	1,000	1,000
5	-	1,000	1,000
6	-	1,000	1,000
7	-	1,000	1,000
8	-	1,000	1,000
9	-	1,000	1,000
10	-	1,000	1,000
11	-	1,000	1,000
Total	10,000	11,000	21,000

Multiplying the number of agents to be trained by two hours each for training and their wage rate produces a primary opportunity cost estimate of $677,500. (See Figure V–19. (See Appendix D for details on wage rates.)) Adjusting the primary estimate by +/- 50 percent produces a range from $338,700 to $1,016,000.

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[57] Immigration and Customs Enforcement. U.S. Department of Homeland Security. *Security and Law Enforcement Services*. Available at <http://www.ice.gov/partners/partners/org_seclawenforce.htm> Accessed Jun 29, 2006.

Figure V-19: Opportunity cost to train Armed Contract agents

Year	Agents to train	Hours	Cost/hour	Total (thousands)		
				Primary	Low (-50%)	High (+50%)
1	11,000	2	$ 16.13	$ 354.87	$ 177	$ 532
2	1,000	2	16.13	32.3	16.1	48.4
3	1,000	2	16.13	32.3	16.1	48.4
4	1,000	2	16.13	32.3	16.1	48.4
5	1,000	2	16.13	32.3	16.1	48.4
6	1,000	2	16.13	32.3	16.1	48.4
7	1,000	2	16.13	32.3	16.1	48.4
8	1,000	2	16.13	32.3	16.1	48.4
9	1,000	2	16.13	32.3	16.1	48.4
10	1,000	2	16.13	32.3	16.1	48.4
11	1,000	2	16.13	32.3	16.1	48.4
Total	21,000			$ 677.5	$ 338.7	$ 1,016.2

The Nuclear Regulatory Commission reports that as of early June, 2006 there were 104 operating nuclear power plants in the United States.[58]   DHS is unable to determine the number of security agents at nuclear power plants that will need training on the acceptance of DL/IDs for official Federal purposes. The Department did not receive comments that would enable it to quantify this population.

V.C. Population

The baseline population for this final rule is estimated to be 232.7 million DL/ID holders; of this number it is assumed that 75% (175.4 million) will seek REAL IDs. DHS applied a re-issuance rate of 10.17% which slightly accelerates the replacement of previously issued DL/IDs.[59]   This re-issuance rate also includes a DL/ID reissued for any reason, including replacement of lost or stolen cards and amendments. For the final rule, DHS expects this may result in an overestimate of costs because the final rule does not require lost or stolen cards to be replaced with a REAL ID if the original card is not REAL ID compliant. The transaction estimate for each year is the number of DL/IDs DHS expects will naturally expire in that year less any previously reissued DL/IDs that will have expired in that year.[60]   (This does not include renewals.) As shown in Figure V–20, the issuances used to replace previously-issued DL/IDs are somewhat front-loaded. (For details on the calculation of the enrollment issuances see APPENDIX A: POPULATIONS.) DHS estimated the issuances due to growth by summing the products of the 2005 ratio of initial issuances to population age 16+ by State and population age 16+ by State by year. This estimate includes issuances for internal migration and gross population growth. Consequently, the initial issuance estimate is higher than the DL/ID holder population because of domestic migration and

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[58] U.S. Nuclear Regulatory Commission. Power Reactors. Available at <http://www.nrc.gov/reactors/power.html>. Revised Jun 2, 2006. Accessed Jul 11, 2006.

[59] This is the mean difference between expected non-initial issuances and documented non-initial issuance of driver licenses. Expected issuance is the number of DLs on file divided by the life-cycle of the DL. Documented issuances are any non-initial issuances divided by the number of DLs on file, both as reported in AAMVA's first 2006 survey.

[60] DHS assumes that the distribution of residents of States whose DL/IDs' lifecycles are more than 5 years will be even over the eight-year phase-in before applying the lost/stolen statistic.

the difference between in and out immigration. The issuance due to growth increases each year, as can be expected due to gross population growth. Adding the estimated 152.5 million growth issuances to the 175.2 million pre-existing replacement provides an 11-year total of 327.7 million *initial* REAL ID issuances.

Figure V-20: REAL ID initial issuances (millions)

Year	Pre-existing DL/ID replacements			Growth	Total initial
	Phase-in	Lost/stolen	Subtotal		
1	0.5	0.2	0.7	-	0.7
2	1.2	0.4	1.6	14.5	16.1
3	18.3	7.5	25.8	14.7	40.5
4	15.9	5.1	21.0	14.9	35.9
5	17.3	2.9	20.1	15.0	35.1
6	16.2	0.9	17.1	15.2	32.3
7	25.3	6.5	31.7	15.3	47.1
8	13.7	4.4	18.1	15.5	33.6
9	14.9	2.5	17.3	15.6	33.0
10	14.0	0.8	14.7	15.8	30.5
11	7.0	-	7.0	16.0	22.9
Total	144.0	31.2	175.2	152.5	327.7

DHS also estimated re-issuances of REAL IDs. Re-issuances are comprised of renewals (expiring DL/IDs) and other re-issuance (e.g. lost, stolen, damaged, reinstatements, etc.). The renewals estimate assumes that each State's validity period will remain the same unless it currently exceeds the REAL ID limit of eight years, in which case DHS assumes the State will choose an eight-year validity period. Both expiring and lost/stolen re-issuances are based on the number of REAL ID holders, which is equal to the total number of DL/ID holders minus the number of people that still hold previously-issued DL/IDs. From program years 2 through 11 there will be an estimated 149.4 million re-issuances of REAL IDs. (See Figure V–21.)

Figure V-21: Re-issued REAL IDs (millions)

Year	Total DL/ID population	Holders of previously issued DL/IDs (end of year)	Holders of Real IDs at end of year	Expiring Real Ids	Other Real ID re-issuances (lost/stolen)	Total re-issuances
1	230.3	229.5	0.7	-	-	-
2	232.7	231.1	1.6	-	0.2	0.2
3	235.1	207.7	27.4	-	2.8	2.8
4	237.4	189.0	48.4	-	4.9	4.9
5	239.6	171.0	68.5	0.1	7.0	7.1
6	241.7	156.0	85.6	0.2	8.7	8.9
7	243.7	126.3	117.4	4.2	11.9	16.1
8	245.7	110.2	135.4	7.1	13.8	20.9
9	247.6	94.9	152.8	10.7	15.5	26.2
10	249.7	82.1	167.5	11.9	17.0	28.9
11	251.8	77.3	174.5	15.7	17.7	33.4
Total				49.8	99.6	149.4

DHS added the estimated 327.7 million initial issuances to the 149.4 million re-issuances to estimate that a total of 477.1 million of REAL IDs will be issued from program year two through eleven. (See Figure V–22.)

Figure V-22: Total REAL ID issuances (millions)

Year	Initial issuance	Re-issuance	Total
1	0.7	-	0.7
2	16.1	0.2	16.3
3	40.5	2.8	43.2
4	35.9	4.9	40.8
5	35.1	7.1	42.2
6	32.3	8.9	41.2
7	47.1	16.1	63.2
8	33.6	20.9	54.4
9	33.0	26.2	59.2
10	30.5	28.9	59.5
11	22.9	33.4	56.3
Total	327.7	149.4	477.1

DHS developed two possible estimates for the distribution of in-person and remote issuances. Based on data from AAMVA's second survey DHS assumes that remote issuances are equal to 10.5 percent of re-issuances. The remaining re-issuances and all of the initial issuances are counted as in-person transactions. This method yields a total of 460.7 million in-person and 15.7 million remote transactions from program years 2 through 11. (See Figure V–23.) In summarizing the responses to their survey, AAMVA calculated that 7.98 percent of all transactions are conducted using remote methods. Using this method yields 438.4 million in-person and 38 million remote transactions from years 2 through 11. The significance of the difference between the two methods becomes apparent when calculating the new distribution between in-person and remote issuances.

Figure V-23: Estimate of in-person and remote renewals (millions)

			DHS estimate			AAMVA-based estimate		
	A	B	C	= A - (B x C)	=B x C	D	= A x (1 - D)	= A x D
Year	Total issuances	Total re-issuances	Remote re-issuance rate	In-person	Remote	Remote re-issuance rate	In-person	Remote
1	-	-	10.50%	**-**	**-**	7.98%	-	-
2	16.3	0.2	10.50%	**16.3**	**0.0**	7.98%	15.0	1.3
3	43.2	2.8	10.50%	**42.9**	**0.3**	7.98%	39.8	3.4
4	40.8	4.9	10.50%	**40.3**	**0.5**	7.98%	37.5	3.3
5	42.2	7.1	10.50%	**41.5**	**0.7**	7.98%	38.9	3.4
6	41.2	8.9	10.50%	**40.2**	**0.9**	7.98%	37.9	3.3
7	63.2	16.1	10.50%	**61.5**	**1.7**	7.98%	58.2	5.0
8	54.4	20.9	10.50%	**52.3**	**2.2**	7.98%	50.1	4.3
9	59.2	26.2	10.50%	**56.4**	**2.8**	7.98%	54.5	4.7
10	59.5	28.9	10.50%	**56.4**	**3.0**	7.98%	54.7	4.7
11	56.3	33.4	10.50%	**52.8**	**3.5**	7.98%	51.8	4.5
Total	476.4	149.4		**460.7**	**15.7**		**438.4**	**38.0**

Under the final rule there will be an estimated decrease of 415,000 issuances nation-wide. (See Figure V–24.) DMVs will see an estimated decrease in re-issuances of 538.5 million but an increase in initial issuances of 123.1 million.

Figure V-24: Marginal increase in issuance over status quo (millions)

	Total issuances		Marginal issuances		
Year	Baseline	Real ID	Initial	Re-issuances	Total
1	-	0.7	-	-	-
2	63.9	16.3	(3.2)	(65.7)	(68.9)
3	64.6	43.2	20.9	(63.7)	(42.9)
4	65.2	40.8	16.1	(62.2)	(46.2)
5	65.9	42.2	15.1	(60.7)	(45.6)
6	66.5	41.2	12.1	(59.5)	(47.4)
7	67.0	63.2	26.6	(52.8)	(26.2)
8	67.6	54.4	12.9	(48.6)	(35.7)
9	68.2	59.2	12.1	(43.9)	(31.7)
10	70.0	59.5	9.1	(42.9)	(33.8)
11	69.5	56.3	1.5	(38.4)	(37.0)
Total	668.3	477.1	123.1	(538.5)	(415.4)

Using the DHS estimate of in-person and remote transactions provides a marginal decrease of 152.3 million in-person transactions and a decrease of 38.3 million remote transactions from year two through eleven. (See Figure V–25.)

Figure V-25: DHS estimate of marginal transactions, in-person vs. remote (millions)

	In-person			Remote			Total transactions increase
Year	Status Quo	Real ID	**Increase**	Status Quo	Real ID	**Increase**	
1	-	-	**-**	-	-	**-**	**-**
2	58.7	16.3	**(42.4)**	5.2	0.0	**(5.2)**	**(47.6)**
3	59.3	42.9	**(16.4)**	5.2	0.3	**(4.9)**	**(21.4)**
4	59.9	40.3	**(19.7)**	5.3	0.5	**(4.8)**	**(24.4)**
5	60.5	41.5	**(19.0)**	5.3	0.7	**(4.6)**	**(23.6)**
6	61.1	40.2	**(20.8)**	5.4	0.9	**(4.5)**	**(25.3)**
7	61.6	61.5	**(0.1)**	5.4	1.7	**(3.7)**	**(3.8)**
8	62.1	52.3	**(9.9)**	5.5	2.2	**(3.3)**	**(13.2)**
9	62.7	56.4	**(6.2)**	5.5	2.8	**(2.8)**	**(9.0)**
10	63.2	56.4	**(6.8)**	5.6	3.0	**(2.5)**	**(9.3)**
11	63.8	52.8	**(10.9)**	5.6	3.5	**(2.1)**	**(13.0)**
Total	613.0	460.7	**(152.3)**	54.0	15.7	**(38.3)**	**(190.6)**

In contrast, using the AAMVA-based estimate of in-person and remote transactions shows a marginal decrease of 15.1 million remote transactions. Consequently, the decrease of in-person transactions would be 174.9. The final rule requires applicants to appear in-person at least for their first REAL ID transaction in order to provide their source documents. This requirement should lead to a temporary decline in remote renewals. The DHS estimate is consistent with this expectation and therefore is used throughout the rest of the analysis.

Figure V-26: AAMVA-based estimate of marginal issuances, in-person vs. remote (millions)

Year	In-person			Remote			Total transactions increase
	Status quo	Real ID	**Increase**	Status quo	Real ID	**Increase**	
1	-	-	**-**	-	-	**-**	**-**
2	58.8	15.0	**(43.8)**	5.1	1.3	**(3.8)**	**(47.6)**
3	59.4	39.8	**(19.6)**	5.2	3.4	**(1.7)**	**(21.4)**
4	60.0	37.5	**(22.5)**	5.2	3.3	**(2.0)**	**(24.4)**
5	60.6	38.9	**(21.7)**	5.3	3.4	**(1.9)**	**(23.6)**
6	61.2	37.9	**(23.3)**	5.3	3.3	**(2.0)**	**(25.3)**
7	61.7	58.2	**(3.5)**	5.3	5.0	**(0.3)**	**(3.8)**
8	62.2	50.1	**(12.1)**	5.4	4.3	**(1.1)**	**(13.2)**
9	62.8	54.5	**(8.3)**	5.4	4.7	**(0.7)**	**(9.0)**
10	63.3	54.7	**(8.6)**	5.4	4.7	**(0.7)**	**(9.2)**
11	63.3	51.8	**(11.4)**	5.5	4.5	**(1.0)**	**(12.4)**
Total	613.3	438.4	**(174.9)**	53.1	38.0	**(15.1)**	**(190.0)**

V.D. *Applications*

Costs associated with filing applications fall into three categories: pre-enrollment; staffing, and applicant visits. Most of the estimates in the applications section are dependant upon the marginal number of initial applications and are therefore greatest during the eight-year enrollment period. The marginal cost estimates relating to applications range from $4.4 to 12.1 billion with the primary estimate falling at $6.9 billion. (See Figure V–27.) These costs include applicants' preparation, information awareness campaigns, increased staffing to process applications and time spent by applicants at DMVs.

Figure V-27: Summary of application related costs (millions)

Year	Pre-enrollment	Customer service	Applicant visits	Total
1	$ 9.9	$ -	$ 3.2	$ 13.1
2	234.2	41	35.3	310.0
3	606.7	124	179.9	910.9
4	520.1	108	151.7	780.2
5	504.7	106	146.8	757.2
6	445.9	96	129.1	670.7
7	714.6	147	216.7	1,077.8
8	461.6	100	135.4	696.7
9	448.8	98	131.2	677.5
10	401.8	89	115.9	606.7
11	256.3	63	69.8	388.6
Primary	$ **4,605**	$ **970**	$ **1,315**	$ **6,889**
Low	3,103	571	769	4,443
High	8,060	1,769	2,234	12,063

V.D.1. Pre-enrollment

This section discusses how DHS estimated the annual costs of State's information awareness campaigns and the cost to applicants of preparing their application. The pre-enrollment cost estimates range from $3.1 to 8.1 billion with the primary estimate below at $4.6 billion. (See Figure V–28.) These costs include State campaigns to inform their DL/ID holders of new application processes and requirements as well as the cost for applicants to prepare their applications, obtain identity source documents and SSN cards.

Figure V-28: Marginal pre-enrollment costs, primary estimate (millions)

Year	Information awareness	Applicants' preparation	Obtaining identity source documents	SSN card replacements	Total
1	$ -	$ 9.9	$ -	$ -	$ 9.9
2	76.5	117.5	24.4	15.7	234.2
3	-	438.0	155.0	13.7	606.7
4	-	376.2	129.5	14.4	520.1
5	-	365.7	125.0	14.0	504.7
6	-	326.9	108.9	10.1	445.9
7	-	521.2	188.0	5.4	714.6
8	-	341.6	114.4	5.5	461.6
9	-	332.7	110.5	5.6	448.8
10	-	299.5	96.7	5.6	401.8
11	-	197.7	54.9	3.7	256.3
Primary	$ 76.5	$ 3,326.9	$ 1,107.3	$ 93.9	$ 4,604.6
Low	67.5	1,831.6	527.5	676.0	3,102.5
High	135.0	4,822.3	1,975.8	1,126.6	8,059.7

Information awareness campaigns

While not required by the regulation, DHS anticipates that States will embark on public awareness campaigns to reduce the number of repeat trips made by applicants to DMV locations. The Department will coordinate with States to assist with information awareness at the national level. The second AAMVA survey of 2006 asks States to estimate their expenditures for this endeavor. Unfortunately, the responses to that survey will not be available to the Department until a later date. However, while responding to AAMVA's first survey of 2005, one State estimated that they will spend $1.5 million on a media campaign. (See Figure V–29.) If divided by their estimated number of DL/ID holders, they will spend $0.29 per DL/ID holder on the media campaign.

Figure V-29: One State's DMV media campaign estimate[61]

Media campaign estimate	DL/ID holders (2008, DHS est.)	Media $ per DL/ID holder
$1,500,000	5,100,000	$0.29

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[61] Washington State DMV's response to AAMVA's first survey of 2005.

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There are two possible methods to estimate national spending on media campaigns based on the State's DMV estimate. The first and primary estimate multiplies their estimate by 51 States for a national total of $76.5 million. (See Figure V–30.) The second method is to multiply the calculated per DL/ID holder expenditures by the national DL/ID population which produces an estimate of $67.5 million. Lacking better data, DHS multiplied the lesser estimate by two to estimate a high of $135 million for information awareness campaigns.

Figure V-30: Cost of information awareness campaigns

Primary estimate		
One State's DMV estimate (millions)	States	Total (millions)
$1.5	51	$76.5

Low estimate		
Per DL/ID holder	DL/ID Holders, 2008 (millions)	Total (millions)
$0.29	232.7	$67.5

High estimate*		
Low estimate (millions)	Upwards adjustment factor	Total (millions)
$67.5	2	$135.0

* This effecitvely doubles the per DL/ID holder cost

Application preparation

DHS acknowledges that applying for a REAL ID will constitute a change in the process for applicants when compared to the status quo. The time that applicants spend preparing an application could be spent in other ways (e.g. work, leisure, etc.). (Cost of time information is in Appendix D and time estimates are in Appendix F.) The REAL ID applicants would normally use their States're-issuance processes, which are often abbreviated. Under REAL ID they will need to complete the equivalent of an initial application. People will need to familiarize themselves with the new requirements and collect any of the required source documents that they have readily available. Under REAL ID, the cost for applicants to prepare their applications will increase by $1.2 billion to 3.5 billion with the primary estimate at $2.3 billion. (See Figure V–31.)

Figure V-31: Marginal cost to prepare applications for REAL ID Issuances

Year	# of phase-ins (millions)	time (hourly wages/salaries & benefits)	Average preparation time (hours)	Total value of time (millions)
1	0.7	$ 26.46	0.50	$ 9.9
2	1.6	26.46	0.50	21.5
3	25.8	26.46	0.50	340.8
4	21.0	26.46	0.50	277.9
5	20.1	26.46	0.50	266.3
6	17.1	26.46	0.50	226.5
7	31.7	26.46	0.50	419.8
8	18.1	26.46	0.50	239.2
9	17.3	26.46	0.50	229.3
10	14.7	26.46	0.50	195.0
11	7.0	26.46	0.50	92.1
Primary	175.2			$ 2,318.3
Low	175.2		0.25	1,159.1
High	175.2		0.75	3,477.4

The marginal cost for a growth applicant is not as high as for applicants already holding DL/IDs. The growth applicants would complete an initial application whether or not the final rule was implemented. However, the regulation has more stringent requirements than the status quo. DHS therefore expects that these applicants will need to spend more time than they currently do to familiarize themselves with the requirements and ensure that they have gathered all the necessary source documentation. Preparing applications for REAL ID will increase baseline costs by $672 million to $1.3 billion with the primary estimate at $1.0 billion from year two through 11. (See Figure V–32.)

Figure V-32: Marginal cost for growth applicants to prepare applications

Year	# growth issuances (millions)	Average value of time (hourly wages/salaries & benefits)	Average preparation time (hours)	Total value of time (millions)
1	-	$ 26.46	0.25	$ -
2	14.5	26.46	0.25	96.0
3	14.7	26.46	0.25	97.2
4	14.9	26.46	0.25	98.3
5	15.0	26.46	0.25	99.3
6	15.2	26.46	0.25	100.4
7	15.3	26.46	0.25	101.4
8	15.5	26.46	0.25	102.4
9	15.6	26.46	0.25	103.5
10	15.8	26.46	0.25	104.5
11	16.0	26.46	0.25	105.7
Primary	152.5			$ 1,008.7
Low			0.17	672.4
High			0.33	1,344.9

Once an individual has a REAL ID, they should not have any marginal cost to prepare for a renewal application. As long as the State maintains the images of the source documents and that information remains current, applicants will not need to bring any new source documents. In the case where some information has changed (e.g. name, authorized length of stay or basis for lawful status) the applicant should have those documents readily available. Consequently, the marginal economic increase in the cost of preparing for applications, not including obtaining not readily available source documents, ranges from $1.8 to 4.8 billion with a primary estimate of $3.3 billion. (See Figure V–33.)

Figure V-33: Marginal economic cost of preparing REAL ID applications (millions)

Year	Phase-ins	Growth issuances	Total
1	$ 9.9	$ -	$ 9.9
2	21.5	96.0	117.5
3	340.8	97.2	438.0
4	277.9	98.3	376.2
5	266.3	99.3	365.7
6	226.5	100.4	326.9
7	419.8	101.4	521.2
8	239.2	102.4	341.6
9	229.3	103.5	332.7
10	195.0	104.5	299.5
11	92.1	105.7	197.7
Primary	$ 2,318.3	$ 1,008.7	$ 3,326.9
Low	1,159.1	672.4	1,831.6
High	3,477.4	1,344.9	4,822.3

Obtaining identity source documents

DHS recognizes that some applicants will need to obtain one of the acceptable identity source documents for their initial REAL ID application. DHS assumes that citizens without any of the acceptable identity source documents readily available will seek State-verifiable birth certificates, which are issued by State or local governments. There are an estimated 17.0 to 63.6 million people, with the primary estimate at 35.6 million people that will need to obtain a State-verifiable birth certificate. The estimated economic cost to obtain a birth certificate is $31.08, each. (For further discussion of the cost of documents, the number of people to seek each and associated assumptions, see Appendix B.) Multiplying the unit cost by the number of people to seek a birth certificate yields an estimate ranging from $527 million to $2.0 billion, with a primary estimate of $1.1 billion. (See Figure V–34.)

Figure V-34: Marginal cost for applicants to obtain identity source documents

Year	People needing verifiable birth certificate (thousands)	Fees ($16.20 each), in millions	Opportunity costs ($14.88 each), in millions	Total
1	-	$ -	$ -	$ -
2	786	12.7	11.7	24.4
3	4,988	80.8	74.2	155.0
4	4,167	67.5	62.0	129.5
5	4,021	65.1	59.8	125.0
6	3,503	56.8	52.1	108.9
7	6,047	98.0	90.0	187.9
8	3,681	59.6	54.8	114.4
9	3,556	57.6	52.9	110.5
10	3,111	50.4	46.3	96.7
11	1,765	28.6	26.3	54.8
Primary	35,624	$ 577.1	$ 530.1	$ 1,107.2
Low	16,969	274.9	252.5	527
High	63,565	1,029.8	945.8	1,976

Alternatively, the Department considered requiring State-issued, as opposed to State-verifiable, birth certificates. DHS rejected this alternative because it would likely result in a higher cost with little perceived benefit. DL/ID applicants are likely to have locally-issued but State-verifiable birth certificates as opposed to State-issued birth certificates. Under this alternative those applicants would need to obtain a State-issued birth certificate. While individuals would each incur the same costs to obtain the documents, more people would do so, thus raising the total cost of the provision. The chosen policy is the less expensive of the two.

Relaxing the assumption that all duplicate birth certificate applications will be filed on-line or through the mail would increase the estimated cost of acquiring birth certificates. However, the analysis assumes that more people would need to do this under the alternative option than under the chosen option. Consequently, changing this assumption does not change the Departmental determination that locally-issued but State-verifiable birth certificates should be acceptable as source documents for REAL ID.

SSN documentation

The benefit of verifying an individual's SSN can be obtained without presentation of the social security card itself. Indeed, more than half of States do not require, though some request, documentation of SSN. Those States are satisfied with the no-documentation approach because they verify SSNs through SSOLV. However, the Department has interpreted the REAL ID Act to require applicants to show some documentation of SSN. Accordingly, the rule requires applicants to show a social security card, a 1099 Form, a W-2 or a pay stub showing both their name and social security number.

In the NPRM Regulatory Evaluation DHS assumed that a large number of individuals would have needed to obtain a Social Security Card. This was based on the assumption that many applicants would have to replace their lost social security cards, and that other acceptable

documents that contained an SSN such as a W-2, 1099 form, or pay stub would have to be current. However, because social security cards bear no issuance or expiration date, and because the number is being verified with the Social Security Administration, we saw little value in requiring current documents. Under the original assumption DHS had estimated that 19.3 million people would have needed a replacement SSN card. For this analysis, DHS now assumes that no more than 2.0 million or 10 percent of the original estimate would need to obtain a Social Security Card. (See Appendix B for details on calculating the number of replacements.) The Social Security Administration estimates that each replacement costs them $25, which it does not pass on to users through fees. The Department estimates that applicants for replacement cards experience $21.61 each in opportunity costs. Combined, the social cost of reissuing SSN cards is $46.61 each. Over eleven years, the primary estimated cost of obtaining replacement SSN cards due to REAL ID is $94.0 million and could range from $70.4 million to $117.3 million (See Figure 51).

Figure V-35: Cost of obtaining SSN replacement cards (millions)

Year	Applicants needing SSN replacement card (thousands)	Opportunity costs ($21.61 each), in millions	SSA expenditures ($25 each), in millions	Total
1	-	$ -	$ -	$ -
2	338	7.3	8.4	15.7
3	293	6.3	7.3	13.7
4	310	6.7	7.7	14.4
5	300	6.5	7.5	14.0
6	218	4.7	5.4	10.1
7	117	2.5	2.9	5.4
8	118	2.6	3.0	5.5
9	120	2.6	3.0	5.6
10	121	2.6	3.0	5.6
11	80	1.7	2.0	3.7
Primary	2,014	$ 43.5	$ 50.3	$ 93.9
Low		32.6	37.8	70.4
High		54.4	62.9	117.3

As an alternative, the Department considered accepting only the social security card as documentation of SSN. However, this option would have been too costly given that the value of SSN is in the verification, not the document itself. If the social security card was required, an estimated 5.9 million people would need to obtain a replacement card from year two through 11. (See Figure V–36. For more details see Appendix B.) The economic cost would still be $46.61 each. Multiplying the number of applicants needing a replacement card by the cost of replacing the cards yields a primary estimate of $277.2 million for years 2 through 11. Adjusting the primary by +/- 25 percent yields a range from $208 to 347 million (See Figure V-36).

Figure V-36: Alternative-Cost of obtaining SSN replacement cards (millions)

Year	Applicants needing SSN replacement card (thousands)	Opportunity costs ($21.61 each), in millions	SSA expenditures ($25 each), in millions	Total
1	-	$ -	$ -	$ -
2	994	21.5	24.8	46.3
3	862	18.6	21.5	40.2
4	911	19.7	22.8	42.5
5	883	19.1	22.1	41.1
6	640	13.8	16.0	29.8
7	344	7.4	8.6	16.0
8	348	7.5	8.7	16.2
9	352	7.6	8.8	16.4
10	356	7.7	8.9	16.6
11	260	5.6	6.5	12.1
Primary	5,947	$ 128.5	$ 148.7	$ 277.2
Low		96.4	111.5	$ 207.9
High		160.7	185.9	$ 346.5

The chosen option requires fewer individuals to seek a replacement SSN card than would the alternative. Consequently, the estimated impact of the chosen option is lower than the estimated impact of the alternative.

V.D.2. Customer service

For the NPRM DHS assumed that State DMVs would need to increase their window hours to process an increased workload generated by REAL ID. The workload would have increased as a result of previously issued DL/ID holders needing to complete a full initial enrollment where they otherwise would not have done so. These holders were divided into two distinct categories: those who would normally appear in-person for a renewal and those who would remotely renew their DL/ID. Increasing the number of window hours to accommodate the re-enrollment of this population would have required more labor hours and more physical space. The Department used a modified version of the NGA, NCSL and AAMVA estimate for re-enrollments as its primary estimate for the duration of the five-year, 2008-2013 enrollment period proposed in the NPRM.[62]

The Figure below shows the result of this methodology as documented in the NPRM.

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[62] The Department noticed a slight formula error: the Tri-party estimate weights transactions in the numerator when they should be weighted in the denominator. The weights should be the reciprocal of the weights used in the numerator. All of the estimates taken from the Tri-party data and methods employ the corrected formula.

Figure V-37: Re-enrollment costs in the NPRM (millions)

Year	Amount
1	$ -
2	$ 40.6
3	$ 124.4
4	$ 108.3
5	$ 105.7
6	$ 95.7
7	$ 146.5
8	$ 99.8
9	$ 97.5
10	$ 89.0
11	$ 62.5
Primary	$ 970.0
Low	$ 570.6
High	$ 1,768.7

The methodology previously described is not appropriate for the Final Rule due to the fact that the enrollment period is no longer simultaneous with the investment phase and States have been provided with an additional five years for enrollment. In the Final Rule States are given up to 3 years to make the investments needed to become REAL ID compliant and then at least seven subsequent years to enroll their entire populations. Therefore, States will no longer be required to compress infrastructure development and enrollment at the same time.

Therefore, the Department has chosen to rely upon the bottom-up methodology previously described in the NPRM regulatory evaluation. This method, detailed in the following text, begins by calculating the marginal increased labor hours required to staff DMV windows for REAL ID.

According to the methodology, processing REAL ID enrollment applications will require an estimated 10.7 to 28.7 million more productive hours, with a primary estimate of 16.7 million productive hours. (See Figure V–38. For details on processing time assumptions see Figure Appendix–25, located in Appendix F.)

Figure V-38: Marginal processing hours for REAL ID Enrollments[63]

Year	Total phase-in transactions (thousands)	Would have been remote under SQ			Would have been in-person under SQ			Total (thousands)
		Number (thousands)	Marginal increase per transaction (hours)	Required hours (thousands)	Number (thousands)	Marginal increase per transaction (hours)	Required hours (thousands)	
1	528	55	0.20	11	472	0.08	39	50
2	1,621	170	0.20	34	1,451	0.08	121	155
3	25,761	2,705	0.20	541	23,056	0.08	1,921	2,462
4	21,004	2,205	0.20	441	18,799	0.08	1,567	2,008
5	20,132	2,114	0.20	423	18,018	0.08	1,501	1,924
6	17,121	1,798	0.20	360	15,323	0.08	1,277	1,636
7	31,728	3,331	0.20	666	28,397	0.08	2,366	3,033
8	18,082	1,899	0.20	380	16,183	0.08	1,349	1,728
9	17,331	1,820	0.20	364	15,511	0.08	1,293	1,657
9	14,739	1,548	0.20	310	13,191	0.08	1,099	1,409
11	6,958	731	0.20	146	6,228	0.08	519	665
Primary	175,005	18,376		3,675	156,630		13,052	16,728
Low			0.16	2,909		0.05	7,831	10,741
High			0.28	5,206		0.15	23,494	28,701

DMVs will also need more labor to process the initial applications due to growth. The marginal increase, however, will be smaller than for either type of re-issuance because 1) under the status quo, all initial applicants must appear in person and 2) DMVs must currently examine the source documents, enter information and process full applications for all initial applicants. Processing growth applications under the rule will require an additional 5.1 to 20.3 million productive hours with a primary estimate of 10.2 million productive hours. (See Figure V–39.)

Figure V-39: Marginal processing hours for growth issuances

Year	Number of transactions (thousands)	Marginal increase per transaction (hrs)	Required hours (thousands)
1	-	0.07	-
2	14,518	0.07	968
3	14,690	0.07	979
4	14,855	0.07	990
5	15,017	0.07	1,001
6	15,176	0.07	1,012
7	15,330	0.07	1,022
8	15,484	0.07	1,032
9	15,639	0.07	1,043
10	15,797	0.07	1,053
11	15,975	0.07	1,065
Primary	152,482		10,165
Low		0.03	5,083
High		0.13	20,331

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[63] The estimated remote and in-person transactions do not match the status quo transactions by year due to the slightly accelerated re-issuance in the risk-based enrollment period. The phase-in transactions were distributed by using the assumed remote re-issuance rate.

DHS estimates that there will be no increase in processing time for most re-issuances of a REAL ID compared to current re-issuance practices because compliant States will have the digital images of the applicants' source documentation from their initial application and therefore will not need to examine them again (though they do need to be electronically re-verified at each re-issuance). All non-temporary REAL ID holders only need to present their expiring REAL ID for a renewal. Other re-issuances will likely be handled similar to today's processes. The marginal labor requirements, therefore, are comprised of those from enrollment issuance and growth issuance. All together, the additional requirements will generate a need for 15.8 million to 49 million additional hours of labor, with a primary estimate of 26.9 million additional labor hours. (See Figure V–40.)

Figure V-40: Total application processing marginal labor hour increase (thousands)

Year	Phase-ins	Growth	Total
1	50	-	50
2	155	968	1,123
3	2,462	979	3,442
4	2,008	990	2,998
5	1,924	1,001	2,925
6	1,636	1,012	2,648
7	3,033	1,022	4,055
8	1,728	1,032	2,761
9	1,657	1,043	2,699
10	1,409	1,053	2,462
11	665	1,065	1,730
Primary	16,728	10,165	26,893
Low	10,709	5,083	15,791
High	28,614	20,331	48,945

DHS estimated the cost to complete one hour's worth of processing at $36.14. (See Figure V–41.) This includes the total compensation of staff and managers. (For further information on the cost of compensation, see Appendix D).

Figure V-41: Cost to complete an additional hour of application processing

	Item	Value
a	Productive hours per FTE	1750
b	Paid hours per FTE	2080
c	Hourly cost of compensation per FTE	$ 24.92
d	FTEs per manager	20
e	Hourly cost of compensation per manager	$ 44.51
	Combined cost of one hour of processing	**$ 32.26**
	(=(1hr*(b/a)*c+1hr*(b/a)/d)*e)	
f	Estimated overhead factor (OMB A-76) x	1.12
		$ 36.14

This estimate is based on publicly available information from the New York State Department of Motor Vehicles for FY 2006-2007. New York State reported appropriations to be about $323.1 million for 2,775 employees. Under the assumption that there is one manager per twenty employees, then on a productive hour basis (i.e., 2080 hours/1750 hours) DHS estimated the

average wage rate per employee to be $32.26 per productive hour. DHS then applied the overhead factor of 1.12 based on OMB Circular A-76 resulting in a total, fully loaded cost of $36.14 per labor hour. This revised estimate is being used in the regulatory evaluation for the final rule. Of course, these estimates could be higher or lower depending upon the State in question.[64] The sensitivity of these estimates to changes in the underlying assumptions will be published with the forth coming final regulatory impact assessment.

At $36.14 per productive hour, the final rule will require an additional $571 million to 1.77 billion, with a primary estimate of $972 million, to process REAL ID applications. (See Figure V–42.)

Figure V-42: Marginal cost to process REAL ID applications

Year	Cost to process one hour	Hours required (thousands)	Marginal cost (millions)
1	$ 36.14	50	1.8
2	36.14	1,123	40.6
3	36.14	3,442	124.4
4	36.14	2,998	108.3
5	36.14	2,925	105.7
6	36.14	2,648	95.7
7	36.14	4,055	146.5
8	36.14	2,761	99.8
9	36.14	2,699	97.5
10	36.14	2,462	89.0
11	36.14	1,730	62.5
Total		26,893	$ 971.8
Low		15,791	570.6
High		48,945	1,768.7

DMVs provide services through windows at counters. In order to utilize their increased staff as estimated above, they will need to increase the total number of hours that windows are open for customer service. Increased total window hours can be accomplished by lengthening the hours that existing windows are open, increasing the number of windows or a combination of both. At this time, data regarding current unused space at DMVs, average space per workstation, workstations per employee, etc. are currently unavailable.

V.D.3. Applicant visits

Under the final regulation, REAL ID applicants will spend more time at DMVs than they do under the status quo. First, they will spend more time with the DMV agent at the window while their application is being processed. Additionally, applicants who would have renewed their DL/ID remotely under the status quo will need to appear in-person for their initial REAL ID. Consequently they will need to travel to the DMV and wait in line. Adding the queuing time

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[64] As reported in "Department of Motor Vehicles" State of New York (undated) http://www.budget.state.ny.us/archive/fy0607archive/fy0607app1/dmv.pdf

(see Appendix F) and travel time then multiplying by the number of such transactions yields an estimate of the time increase ranging from 29.1 million to 84.4 million hours, with a primary estimate of 49.7 million hours, that these applicants will need to spend to take their application to the DMV. (See Figure V–43.) This estimate counts the processing time again because the first time it was counted it only included the DMV labor time whereas this estimate is counting the same time for applicants. The estimate also includes round-trip travel time to the DMV. DHS assumes that round-trip travel time to the DMV is equal to round-trip travel time to work.

Figure V-43: Marginal hours spent by applicants at DMVs

		Transactions that would have been remote				
Year	Increased base processing time (thousands)	# of transactions (thousands)	Average queuing time (hrs)	Average round-trip travel time (hrs)	Subtotal (thousands)	Total increase (thousand hours)
1	50	55	0.43	0.81	69	119
2	1,123	170	0.43	0.81	211	1,334
3	3,442	2,705	0.43	0.81	3,356	6,798
4	2,998	2,205	0.43	0.81	2,736	5,734
5	2,925	2,114	0.43	0.81	2,623	5,548
6	2,648	1,798	0.43	0.81	2,230	4,879
7	4,055	3,331	0.43	0.81	4,133	8,188
8	2,761	1,899	0.43	0.81	2,355	5,116
9	2,699	1,820	0.43	0.81	2,258	4,957
10	2,462	1,548	0.43	0.81	1,920	4,382
11	1,730	731	0.43	0.81	906	2,637
Primary	26,893	18,376			22,798	49,691
Low	15,791	10,709			13,286	29,077
High	48,945	28,614			35,501	84,446

Multiplying the marginal visit hours by the average cost of time (see Appendix D.) yields a monetized estimate of $769 million to $2.2 billion, with a primary estimate of $1.3 billion, to applicants of visiting the DMV under the regulation. (See Figure V–44.)

Figure V-44: Cost of marginal increase in DMV visits

Year	Cost of time	Marginal visit hours (thousands)	Total (millions)
1	$ 26.46	119	$ 3.2
2	26.46	1,334	35.3
3	26.46	6,798	179.9
4	26.46	5,734	151.7
5	26.46	5,548	146.8
6	26.46	4,879	129.1
7	26.46	8,188	216.7
8	26.46	5,116	135.4
9	26.46	4,957	131.2
10	26.46	4,382	115.9
11	26.46	2,637	69.8
Primary		49,691	$ 1,314.8
Low		29,077	$ 769.4
High		84,446	$ 2,234.4

V.D.4. Acceptable source documents

DHS had two goals when compiling the list of acceptable source documents. The first was to ensure that anyone eligible for a REAL ID will have or be able to obtain the necessary documentation to establish identity and lawful status. The second goal was to limit the list in order to contain the States' costs of verifying the document's validity with the issuing agency. Limiting the list also reduces the number of documents that DMV customer service agents will need to be familiar with in order to recognize fraudulent documents.

In addition to the eight documents listed in Figure IV–1, DHS considered accepting the Department of Defense's Common Access Card and the Transportation Security Administration's Transportation Worker Identification Credential (TWIC). While DHS has confidence in the security of these cards, anyone with either of these cards should be able to obtain one of the other documents on the list. However, only a select few of the people eligible for a REAL ID will be able to obtain a CAC or TWIC. Consequently, DHS has decided not to include DOD's CAC or TSA's TWIC in its regulation because States would then need to establish connections to two more database systems, some of which do not yet exist. The first goal of inclusiveness was met. Including the CAC and TWIC on the list, however, would violate the second goal of minimizing the States' costs of establishing connectivity with issuing agencies for verification purposes.

Finally, DHS considered including Native American tribal documents on the list. However, the Bureau of Indian Affairs indicated that, for approximately 55 years, tribes have been obtaining State-issued documentation to verify birth and thus have State-issued birth certificates.[65] Those born before this practice will need to seek birth certificates in accordance with established procedures within their birth State for obtaining birth certificates issued a year or more after birth.

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[65] Meeting with DHS in Rosslyn, VA. Oct 27, 2005.

DHS has concluded that there is no reliable procedure to verify every applicant's principal address, and that States have the best knowledge of which documents show an address of principal residence. Therefore, States will determine what they will accept to document an applicant's address. To ensure that the applicant has provided their "principal" residence, the final rule requires applicants to sign a declaration under penalty of perjury attesting to the accuracy of all information they provide.

DHS believes that there is no cost incurred in the act of presenting or accepting the source documents. Rather the costs are associated with applicants obtaining the document and DMVs scanning and verifying the authenticity of the document.

V.D.5. Remote re-issuance

DHS has determined that continuing to allow remote re-issuance of DL/IDs provides for added flexibility resulting in lower costs than in-person re-issuance. Accordingly, the DHS rule encourages remote re-issuance for REAL IDs but leaves the choice to States.

DHS also recognizes that during the enrollment period there will be a shift in the distribution between remote and in-person transactions. DHS has estimated the shift to in-person transactions and the corresponding costs (e.g. increased staffing, opportunity cost of DL/ID holders standing in lines, etc.). The estimate of the change in distribution between in-person and remote method is in Figure V–25.

V.D.6. Front-end application processing

Many States will need to revise their front-end application processing. This includes moving the photo capture to the beginning of the licensing and identification process, ensuring verifications are complete before issuing a DL/ID, etc. DHS has included these costs in the Data section.

V.E. Verification

The final rule requires States to conduct electronic verifications for the source documents required under the rule. States do not currently have connectivity to all of the systems that will be used to verify documents (e.g. EVVE, CCD). The cost estimates of verifying through those systems are included in the Data/IT section of this analysis. This section discusses the methods that DHS anticipates States will use to comply with the rule and provides estimates for systems that States currently use (e.g. SAVE, SSOLV). The cost of verifying lawful status, SSNs and resolving SSN discrepancies ranges from $1.6 to 166 million, with a primary estimate of $21.6 million.

Figure V-45: Summary of document verification costs (thousands)

Year	SAVE	SSOLV	Total
1	$ 52	$ -	$ 52
2	(312)	34	(277)
3	1,559	388	1,947
4	1,372	318	1,690
5	1,459	307	1,766
6	1,372	264	1,637
7	2,901	537	3,438
8	2,275	380	2,655
9	2,593	421	3,015
10	2,601	402	3,002
11	2,367	343	2,709
Primary	$ 18,239	$ 3,396	$ 21,634
Low	814	771	1,585
High	152,210	13,601	165,811

V.E.1. Identity and lawful status documents

When choosing which documents meet the minimum requirements, one consideration of DHS was the verifiability of the documents on the list. Where possible, DHS chose documents that have existing methods of electronic verification. Unfortunately, some of these systems are not currently fully operational.

DHS has estimated States' marginal cost to check lawful status against the SAVE database. DHS first calculated the number of total SAVE verifications that will be required under REAL ID. Extending SAVE verifications to include all aliens nationwide will result in an estimated total 6.8 to 57.3 million verifications, with a primary estimate of 26.7 million total verifications. (See Figure V–46.) The primary estimate uses the weighted mean of SAVE verifications divided by total issuances by State for the four States using SAVE in early 2006 on all foreign-born applicants to calculate the total SAVE verifications. The low estimate uses the lowest of these States' SAVE verifications as a percent of total DL/ID issuances.[66]   The high estimate uses the foreign-born people as a percent of the total population to estimate total SAVE verifications.[67]

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[66] Recent information suggests that at least twenty States are now querying SAVE. The estimated incremental compliance costs associated with this provision of the rule may be overstated.
[67] U.S. Census Bureau. *The foreign-born population: 2000*. Available at <http://www.census.gov/prod/2003pubs/c2kbr-34.pdf>. Accessed May 2, 2006.

Figure V-46: Total estimated initial SAVE verifications (thousands)

		Primary estimate		Low		High	
Year	Total issuances	% of issuances to aliens	Estimated SAVE verifications	% of issuances to aliens	Estimated SAVE verifications	% of issuances to aliens	Estimated SAVE verifications
1	750	5.60%	42	1.42%	11	12.00%	90
2	16,304	5.60%	913	1.42%	232	12.00%	1,956
3	43,236	5.60%	2,422	1.42%	615	12.00%	5,188
4	40,780	5.60%	2,285	1.42%	580	12.00%	4,893
5	42,226	5.60%	2,366	1.42%	601	12.00%	5,067
6	41,183	5.60%	2,307	1.42%	586	12.00%	4,941
7	63,203	5.60%	3,541	1.42%	899	12.00%	7,584
8	54,444	5.60%	3,050	1.42%	774	12.00%	6,533
9	59,186	5.60%	3,316	1.42%	842	12.00%	7,102
10	59,481	5.60%	3,332	1.42%	846	12.00%	7,137
11	56,337	5.60%	3,156	1.42%	801	12.00%	6,760
Total	477,130		26,731		6,787		57,250

Subtracting the projected SAVE verifications under the status quo from the estimated required verifications yields an estimated 14.6 million additional verifications. (See Figure V–47.)

Figure V-47: Estimated marginal initial SAVE verifications (thousands)

	# of SAVE verifications if status quo maintained	Primary		Low		High	
Year		Total verifications required	**Marginal verifications**	Total verifications required	**Marginal verifications**	Total verifications required	**Marginal verifications**
1	-	42	**42**	11	**11**	90	**90**
2	1,163	913	**(249)**	232	**(931)**	1,956	**793**
3	1,175	2,422	**1,247**	615	**(560)**	5,188	**4,013**
4	1,187	2,285	**1,098**	580	**(607)**	4,893	**3,706**
5	1,198	2,366	**1,168**	601	**(598)**	5,067	**3,868**
6	1,209	2,307	**1,098**	586	**(623)**	4,941	**3,732**
7	1,220	3,541	**2,321**	899	**(321)**	7,584	**6,364**
8	1,230	3,050	**1,820**	774	**(456)**	6,533	**5,302**
9	1,241	3,316	**2,075**	842	**(399)**	7,102	**5,861**
10	1,251	3,332	**2,081**	846	**(405)**	7,137	**5,886**
11	1,262	3,156	**1,894**	801	**(461)**	6,760	**5,497**
Total	12,137	26,731	**14,594**	6,787	**(5,350)**	57,250	**45,114**

SAVE verifications can be split into two categories: those requiring only a basic check and those requiring more thorough processing to complete verification. Each verification goes through the basic check. Those that cannot be resolved must then undergo the secondary check at an additional cost. The cost of the verifications is well established and some States are paying for them now. The marginal cost of SAVE verifications, based upon the marginal number of SAVE checks, ranges from $814,000 to $152 million, with a primary estimate at $18.2 million. (See Figure V–48.) Both the primary and low estimates use the percent of secondary checks from the States verifying all aliens' lawful status in 2005). Contrastingly, the high estimate uses the historic rate of secondary verifications as reported by the SAVE program. The low and high

estimates use the low and high ends of SAVE's estimated labor cost per verification, which are $6 and $7 respectively. The primary estimate uses the midpoint of this range, which is $6.50 (fully loaded).

Figure V-48: Marginal cost of SAVE checks, primary estimate[68]

	Basic verification			Secondary verification					
Year	Marginal SAVE verifications (thousands)	Unit cost	Sub-total (thousands)	% of basic checks	Number of secondary verifications (thousands)	Transmission unit cost	Manual labor to verify*	Subtotal (thousands)	Total (thousands)
1	42	$ 0.26	$ 11	14.2%	6	$ 0.48	$ 6.50	$ 42	$ 52
2	(249)	0.26	(65)	14.2%	(35)	0.48	6.50	(247)	(312)
3	1,247	0.26	324	14.2%	177	0.48	6.50	1,234	1,559
4	1,098	0.26	285	14.2%	156	0.48	6.50	1,087	1,372
5	1,168	0.26	304	14.2%	166	0.48	6.50	1,156	1,459
6	1,098	0.26	285	14.2%	156	0.48	6.50	1,087	1,372
7	2,321	0.26	603	14.2%	329	0.48	6.50	2,297	2,901
8	1,820	0.26	473	14.2%	258	0.48	6.50	1,801	2,275
9	2,075	0.26	540	14.2%	294	0.48	6.50	2,054	2,593
10	2,081	0.26	541	14.2%	295	0.48	6.50	2,060	2,601
11	1,894	0.26	492	14.2%	269	0.48	6.50	1,874	2,367
Total	14,594		$ 3,795		2,069	$ 993		$ 14,444	$ 18,239
Low	691		180	14.2%	98		$ 6.00	635	814
High	86,680		22,537	20.0%	17,336		$ 7.00	129,673	152,210

* SAVE does not charge users for this.

For its final rule, DHS has chosen electronic means of verification with issuing agencies over more labor intensive methods because it is more cost effective. To manually verify a document with its issuing agency, the inquiring State would need to contact the issuing agency and give them the information on the document. The issuing agency would then retrieve the record, if available, and would contact the inquiring State and inform them whether or not they had a document matching the applicant's information. Electronic verification, on the other hand, significantly reduces the amount of labor needed to complete the process.

As an alternative to the final regulation, States could have been required to make an independent determination of the validity of the document. Such an alternative regulatory scheme would require States to inspect the source document and its incorporated security features. The State would determine if the document, its information and its features are consistent with valid documents or if the document required further inspection. States could meet such a requirement by purchasing specialized document scanners and software. These scanners can read various types of machine readable technology (MRT) and use both the visible and non-visible spectrum of light to capture images of the document. The software then computes a score based upon the consistency of the document's features (water marks, UV features, design, visible data, data in the MRT, etc.) with what are known to be valid documents. If that score meets some minimum threshold score, the software determines that the document is valid; if not, the software raises a red flag.

DHS rejected this alternative for a number of reasons. First, it does not meet the statutory requirements of verifying documents *with the issuing agency*.[69] Second, the software may not

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[68] Unit cost data provided to DHS by the SAVE program office. Apr 27, 2006.
[69] *REAL ID Act of 2005*. Sec. 202(c)(3)(a).

be able to identify high-quality fraudulent documents. Consequently, a nefarious individual could present a high-quality fraudulent document and obtain a REAL ID under a false identity. This is a growing concern as technological advancements render it easier to manufacture high quality fraudulent documents. For the final rule, a lower quality fraudulent document could initially be accepted by the DMV. However, if the information on the face of the document does not match the records in the issuing agency's database, the applicant would not receive a REAL ID.

DHS estimated the cost of implementing such a system for comparative purposes. The alternative system to verify source document validity would cost from $105 to 848 million, with a primary estimate of $476 million. (See Figure V–49.) DHS based its unit cost estimate on information from industry experts. The unit cost in year one is to acquire the platform (scanner and software) that could verify the authenticity of documents. Yearly hardware and software maintenance costs are reflected in years 2 through 11. (Note that vendors may offer increasing discounts for initial acquisitions as the value of a client's order increases.) The low estimate for the number of platforms is equal to the number of DMV locations reported in AAMVA's first survey of 2006, implying that there would only be one scanner for each office. The high estimate is equal to the number of estimated DMV employees (2005 baseline from AAMVA's survey of 2006 plus marginal increase to process applications), implying that every employee would have their own workstation, which is not used by others on their regular day off, leave days or regular breaks throughout the workday. (The employment estimate from year two is used in both year one and two in this estimate. DHS assumes that in year one States would purchase or lease enough platforms to equip their FTEs in year two.) DHS acknowledges that these high and low estimates are extremes; however, DHS did not receive data during the public comment period that would enable the Department to refine its estimate. In lieu of more precise data, DHS used the mid-point of the high and low estimates for its primary estimate. The labor costs associated with scanning the documents are not included because the documents must be scanned under either verification scenario.

Figure V-49: Cost of alternate system to verify ID and status

Year	Platforms			Unit cost	Total (millions)		
	Primary	Low	High		Primary	Low	High
1	20,235	4,296	36,173	$ 8,750	$ 177.1	$ 37.6	$ 316.5
2	20,235	4,296	36,173	1,573	31.8	6.8	56.9
3	19,801	4,296	35,306	1,573	31.1	6.8	55.5
4	19,746	4,296	35,196	1,573	31.1	6.8	55.4
5	19,546	4,296	34,796	1,573	30.7	6.8	54.7
6	18,938	4,296	33,580	1,573	29.8	6.8	52.8
7	18,394	4,296	32,492	1,573	28.9	6.8	51.1
8	18,398	4,296	32,500	1,573	28.9	6.8	51.1
9	18,402	4,296	32,508	1,573	28.9	6.8	51.1
10	18,406	4,296	32,516	1,573	29.0	6.8	51.1
11	18,406	4,296	32,516	1,573	29.0	6.8	51.1
Total					$ 476	$ 105	$ 848

Comparing these cost estimates to those for the DHS rule is difficult, at best. The alternate system could verify foreign passports without contacting the issuing agency. However, it could not verify lawful presence because neither a foreign passport nor a visa alone demonstrates

lawful status. Consequently, States would still need to complete a SAVE verification.   The alternate system could potentially authenticate a social security card. However, it could not be reasonably expected to authenticate W-2s or other documents, if allowed as evidence of SSN under the final rule.   Consequently, applicants would be limited to bringing a social security card, which increases opportunity costs to applicants. (Limiting the number of acceptable documents increases the number of people that need to obtain that document and thus opportunity costs.) However, merely authenticating the social security card would not alert individuals, DMVs or the SSA to instances where more than one person is associated with a SSN. To do so, States would still have to run a SSOLV check. Further, the statute requires States to develop interconnectivity to share information in their DMV databases. This task is accomplished in the Department's rule but is not included in this alternative system analysis; that cost would be in addition to this alternative.

The alternate system's authentication could, however, be seen as a replacement for the verification function of EVVE. This option is still rejected on the grounds that it does not verify the authenticity with the issuing agency. Comparing cost estimates of the two options is still difficult. Not all of the start up costs for EVVE will be incurred in year one. Because DHS is unable to determine which States will incur the start up costs in which years, they have all been included in year one. NAPHSIS estimated startup costs at $109 million based on a two-phase approach.[70]   The first phase is to simply establish connectivity and verification capabilities. This phase accounts for a small fraction of the start-up estimate. The second phase will "clean" the data and will ultimately result in a reduction of recurring costs due to increased reliance on automation, which is not reflected in the DHS estimate. Some States will have completed both phases by the end of year one while others may require a few more years to complete phase II. AAMVA estimated recurring operation costs for the national deployment of EVVE at $15 million annually.[71]   Combining the $109 million implementation cost and the annually recurring $15 million costs for eleven years yields an estimated $259 million cost to establish and run EVVE for years two through eleven. (See Figure V–50.)

Figure V-50: EVVE cost estimate for comparison (millions)[72]

Year	Start up costs	Recurring costs	Total
1	$ 109.3	$ -	$ 109.3
2	-	15.0	15.0
3	-	15.0	15.0
4	-	15.0	15.0
5	-	15.0	15.0
6	-	15.0	15.0
7	-	15.0	15.0
8	-	15.0	15.0
9	-	15.0	15.0
10	-	15.0	15.0
11	-	15.0	15.0
Total	$ 109.3	$ 150.0	$ 259.3

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[70] NAPHSIS. *Phases for Implementing EVVE*. Jan 19, 2006. Sent via e-mail: Mar 14, 2006.
[71] AAMVA. *Electronic Verification of Vital Events Records: Final Report*. 2005. P5-6.
[72] Startup costs estimate: NAPHSIS. *Phases for Implementing EVVE*. Jan 19, 2006.

Using the document authentication platforms would cost an estimated $217 million more than using EVVE. (See Figure V–51.) DHS has concluded that not only does such a system fail to verify the authenticity of the source document with the issuing agency, but it is expected to be more costly than the verification system in the final regulation.

Figure V-51: Cost difference between verification alternatives (millions)

Year	Authentication platforms	EVVE verification	Difference
1	$ 177.1	$ 109.3	$ 67.8
2	31.8	15.0	16.8
3	31.1	15.0	16.1
4	31.1	15.0	16.1
5	30.7	15.0	15.7
6	29.8	15.0	14.8
7	28.9	15.0	13.9
8	28.9	15.0	13.9
9	28.9	15.0	13.9
10	29.0	15.0	14.0
11	29.0	15.0	14.0
Total	$ 476.3	$ 259.3	$ 217.0

V.E.2. Address of principal residence

DHS considered having States verify an applicant's address documents with the issuing agency as required by the statute but determined that, at this time, this is an impracticable requirement. For example, most States accept utility bills as proof of address. Data indicate that there were as many as 2,015 public power utilities,[73] 2,254 local telephone service providers,[74] 1,147 wireless companies providing service to end users,[75] and 1,270 companies delivering natural gas to residences in 2003.[76] DHS cannot compel these companies to provide access to the States in order to verify statements issued to their customers and cannot justifiably hold a State accountable if a private utility company chooses not to provide that service. Even if DHS had authority to require this of utility companies, establishing connectivity with each of these 6,686 non-State entities would be cost prohibitive.

Even if such verifications could be established in a cost effective manner, they would only verify that service was billed to a person at an address. They would not verify that the person resided there, much less that the address was their principal residence. Consequently, DHS is not

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[73] American Public Power Association. *2005-06 Annual Directory and Statistical Report*. P 41.
[74] Federal Communications Commission. *Telecommunications Provider Locator*. "Table 2: Telecommunications by Type of Service Reported." Nov 8, 2005. Available
<http://www.fcc.gov/Bureaus/Common_Carrier/Reports/FCC-State_Link/Locator/locat04.pdf>. Accessed Feb 7, 2006.
[75] Ibid.
[76] Energy Information Administration. U.S. Department of Energy. Data obtained through EIA – 176 Query System. Downloadable at <http://www.eia.doe.gov/oil_gas/natural_gas/applications/nat_applications.html>. Data retrieved Feb 7, 2006. This figure counts entities with exact name matches operating in different States as one company.

requiring that States verify these documents with the issuing agency, per se, but States must validate the address provided by applicants by requiring applicants to provide two pieces of documentation containing the street address of their principal residence. If they do not already have them in place, States must adopt methods that include requiring applicants to provide two pieces of documentation containing the street address of their principal residence. .

V.E.3.   Social Security Number

The final regulation requires States to verify each applicant's SSN when issuing either an initial REAL ID or a renewed or reissued REAL ID. Consequently, the DHS estimate of marginal social security number verifications has included all growth issuances from States not using SSOLV and re-issuances from every State. (This assumes that the States currently using SSOLV only use it at initial issuance.) Marginal growth issuance SSOLV checks were calculated by summing the projected growth issuances in States not currently using SSOLV. (Growth projections are not available for New Hampshire and Utah.) Projected REAL ID enrollments from every State are included, as are all renewals. While most States currently utilize SSOLV, they may not normally run the SSN against SSOLV for a renewal. Accordingly, DHS has included all enrollments in this estimate but has not included issuance due to lost/stolen DL/IDs (duplicate licenses) as there is no requirement in the rule to re-verify the SSN in these situations. The final regulation results in an estimated additional 232 million SSOLV verifications from years 2 through year 11. (See Figure V–52.)

Figure V-52: SSOLV total marginal checks (millions)

Year	Growth	Phase-ins	Renewals	Total
1	-	-	-	-
2	0.7	1.6	-	2.3
3	0.7	25.8	-	26.5
4	0.7	21.0	-	21.7
5	0.7	20.1	0.1	21.0
6	0.8	17.1	0.2	18.0
7	0.8	31.7	4.2	36.7
8	0.8	18.1	7.1	25.9
9	0.8	17.3	10.7	28.8
10	0.8	14.7	11.9	27.4
11	0.8	7.0	15.7	23.4
Total	7.5	174.5	49.8	231.9

SSOLV offers two options to verify SSN information: real-time and batch checks. For its primary estimate, DHS assumed that States only using real-time verification will continue to use that method. DHS also assumed that States using the batch checks will use that method for all SSN verifications due to its lower cost. To calculate the distribution, DHS multiplied the percent of the population living in a State that only uses real-time verification by the marginal SSNs to be verified. This implicitly assumes that States not currently using SSOLV will distribute themselves between batch and real-time verification the same way as States already using SSOLV. This will result in an over-statement of SSN verification costs if each of these States chooses to use batch verification for all of their transactions. Some States using both real-time and batch verification methods may continue to use real-time checks under REAL ID, which will

result in the estimate understating the SSN costs. Of the SSOLV checks currently done, 45.74 percent are completed in States that only use the real time method.[77]   The unit cost to verify SSNs through SSOLV is well established: real time verifications are $0.03 each and batch verifications are $0.0017 for each SSN verified. If the States that currently do not check SSNs distribute themselves in the same way, the primary eleven-year estimate for increased costs relating to SSOLV checks is $3.40 million. (See Figure V–53.)

Figure V-53: Marginal SSN verification costs using SSOLV, primary estimate

Year	Increase of SSNs to be verified (millions)	% in real time	Real time		Batch		Total cost (thousands)
			Real-time unit cost	Total real-time cost (thousands)	Batch unit cost	Total batch cost	
1	-	45.74%	$ 0.03	$ -	$ 0.0017	$ -	$ -
2	2.3	45.74%	0.03	32	0.0017	2	34
3	26.5	45.74%	0.03	364	0.0017	24	388
4	21.7	45.74%	0.03	298	0.0017	20	318
5	21.0	45.74%	0.03	288	0.0017	19	307
6	18.0	45.74%	0.03	248	0.0017	17	264
7	36.7	45.74%	0.03	503	0.0017	34	537
8	25.9	45.74%	0.03	356	0.0017	24	380
9	28.8	45.74%	0.03	395	0.0017	27	421
10	27.4	45.74%	0.03	376	0.0017	25	402
11	23.4	45.74%	0.03	321	0.0017	22	343
Total	231.9			$ 3,182		$ 214	$ 3,396

If all States were to complete their marginal verifications using batch processes the marginal cost would be $394,000. (See Figure V–54.) If every State were to instead use only the real time method for the marginal verifications, the cost increase would be $6.9 million over the baseline.

Figure V-54: Marginal SSN verification costs using SSOLV, low and high estimate

Year	Increase of SSNs to be verified (millions)	Low		High	
		Unit cost	Total cost (thousands)	Unit cost	Total cost (thousands)
1	-	$ 0.0017	$ -	$ 0.03	$ -
2	2.3	0.0017	4.0	0.03	70.5
3	26.5	0.0017	45.0	0.03	794.9
4	21.7	0.0017	37.0	0.03	652.3
5	21.0	0.0017	35.7	0.03	629.6
6	18.0	0.0017	30.7	0.03	541.5
7	36.7	0.0017	62.4	0.03	1,100.8
8	25.9	0.0017	44.1	0.03	778.5
9	28.8	0.0017	48.9	0.03	863.4
10	27.4	0.0017	46.6	0.03	822.7
10	23.4	0.0017	39.8	0.03	702.0
Total	231.9		$ 394.2		$ 6,956.1

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[77] DHS calculation based on data from AAMVA's first survey of 2006.

Applicants whose data does not match the information in SSOLV will need to resolve the discrepancy before they can obtain a REAL ID. Because many current holders of DL/IDs have already been verified, they are not likely to face this obstacle. Rather, the 7.5 million marginal growth applicants and same enrollment applicants from non-checking States may be at risk for having non-matching data. (See Figure V–55.) The marginal growth verifications correspond to growth issuances in States not currently verifying SSNs. The enrollment verifications are the total enrollment issuances multiplied by the percent of DL/IDs in States that do not currently verify SSNs. Note that enrollments from currently checking States will be a marginal increase in SSOLV verifications but that any data discrepancies in these States should already be resolved.

Figure V-55: Marginal initial SSOLV verifications possibly requiring resolution (thousands)

Year	Marginal growth verifications	Phase-ins from non-checking states	Initial marginal SSOLV verifications
1	-	-	-
2	728	2,338	3,066
3	734	1,788	2,522
4	740	1,713	2,454
5	746	1,457	2,203
6	752	688	1,440
7	758	2,013	2,770
8	763	1,539	2,302
9	769	1,475	2,244
10	775	1,254	2,030
11	775	592	1,367
Total	7,540	14,857	22,398

Not all of the marginal initial SSOLV verifications will result in a mismatch of data. To estimate the number of people that will have mismatching data needing resolution, DHS multiplied these initial verifications by the percent of people who have mismatches in their data, as reported by two States. For the primary estimate, DHS used the simple mean of those two States reported rates. The result is an estimated 672,000 to 1,120,000, with a primary estimate of 896,000, mismatches needing resolution. (See Figure V–56.) The nature of current mismatches may result in an over-estimate in the number of mismatches under REAL ID. Information from the SSA indicates that one reason for mismatches is applicants may provide a different name (e.g. nickname, married name, etc.) for their DL/ID than is on record with the SSA. However, REAL ID's requirements will provide the State with a history of names for the applicant. (The SSA also keeps a history of names for the individual.) Most applicants will likely provide a birth certificate as evidence of identity, which contains their legal name at birth. If they currently use a different legal name they will also need to satisfy State requirements for using an alternate name.

Figure V-56: Estimated number of SSN discrepancies (thousands)

Year	Marginal initial SSOLV verifications	Primary % Needs resolution	Primary Total needing resolution	Low % Needs resolution	Low Total needing resolution	High % Needs resolution	High Total needing resolution
1	-	4%	-	3%	-	5%	-
2	3,066	4%	123	3%	92	5%	153
3	2,522	4%	101	3%	76	5%	126
4	2,454	4%	98	3%	74	5%	123
5	2,203	4%	88	3%	66	5%	110
6	1,440	4%	58	3%	43	5%	72
7	2,770	4%	111	3%	83	5%	139
8	2,302	4%	92	3%	69	5%	115
9	2,244	4%	90	3%	67	5%	112
10	2,030	4%	81	3%	61	5%	101
11	1,367	4%	55	3%	41	5%	68
Total	22,398		896		672		1,120

At this time, DHS is unable to estimate the cost of resolving the SSN discrepancies. Any mismatches due to typographical error will be easily identified and remedied under REAL ID because States will have images of all of the source documents to compare to the data in their database. In the case where an applicant is using a legal name that they have not yet given to the SSA, the State may be able to use one of the applicant's former legal names for the verification. Using a previous legal name in such cases may reduce the need for States to contact applicants for further information/clarification. Further, using SSN cards and W-2 forms should ensure that the name in use by the applicant will result in a match when compared with the SSA database. This should minimize benign non-typographical errors.

In order to establish an estimate of the cost to resolve mismatches, the Department requested data on the proportion of mismatches resulting from data entry error, incorrect data given to DMV by the applicant and erroneous data in the SSA database. Further, the Department requested data on the costs to DMVs, individuals and the SSA to resolve each type of mismatch under both the status quo and the proposed rule. DHS received one comment indicating that a State currently processes 65,000 to 85,000 letters for SSA mismatches. However, DHS did not receive further detail on the cause for these mismatches or the cost to resolve them.

V.F. *Card production and issuance*

DHS has two notes for readers concerning this section. First, recall that one of the over-arching assumptions of the regulatory analysis for the NPRM was that the combination of regulatory standards was likely to result in all States using a central issuance process. DHS requested that States provide data on the estimated cost to move to central issuance and, if they choose to retain OTC methods, the cost to secure locations where OTC production occurs. DHS received one comment from a State indicating that it would cost the State $3 million to establish a secure central card production facility.

Second, estimating the cost of card production is a complicated task. Card vendors do not provide a menu with set prices for each security feature, card stock type, etc. Rather, a customer

gives the vendor a set of criteria for the card that the vendor uses to provide a production unit cost. This unit cost is, expectedly, dependent on those criteria but also depends greatly upon the expected number of cards to be produced. Vendors offer steep discounts for large orders. Further, the unit costs of cards reported by States typically includes more than simple card production costs. Additionally, in most jurisdictions, States put their card production out for competitive bid, and award contracts based on the lowest responsible bids that meet the criteria established in the bid package. DHS received several comments and pieces of data from DMVs and their vendors and sought to include this data in its estimates, where appropriate.

The estimated marginal cost of shifting to central issuance and producing REAL IDs ranges from $477 million to 1.4 billion, with a primary estimate of $953 million. (See Figure V–57.) The vast majority of these costs are due to improvements in document security features.

Figure V-57: Summary of card production and issuance marginal costs (millions)

Year	Shift to central issuance	DL/ID redesign	Document production	Total
1	$ 15.3	$ 284.4	$ -	$ 299.7
2	8.0	-	14.7	22.7
3	21.2	-	38.9	60.1
4	19.9	-	36.7	56.6
5	20.5	-	38.0	58.5
6	19.9	-	37.1	56.9
7	30.4	-	56.9	87.3
8	25.8	-	49.0	74.8
9	27.9	-	53.3	81.1
10	27.9	-	50.7	78.6
11	26.1	-	50.7	76.8
Primary	$ 242.8	$ 284.4	$ 425.9	$ 953.2
Low	121.4	142.2	213.0	476.6
High	364.2	426.6	638.9	1,429.7

V.F.1. Document issuance

The regulation does not require States to move to a central issuance process. However, DHS believes that States will find it more economically efficient to do so. Therefore, the analysis has assumed that each State will make such a move.

Virginia completed a cost analysis of its anticipated switch to a central issuance process in 2006 and identified 6 cost items: 1) driver license system changes needed for documents to print at headquarters (i.e. central issuance); 2) equipment; 3) construction; 4) issuance of temporary licenses and ID cards at customer service centers; 5) additional headquarters staff, and; 6) mailing costs. The Virginia DMV estimates capital start-up costs to be $803,000 and annual operational costs to be $473,000.[78]   (See Figure V–58.)

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[78] Virginia Department of Motor Vehicles. Available at
<http://www.dmvnow.com/webdoc/pdf/lls_report_app.pdf>. Accessed Apr 11, 2006: p 11- 12. Note: DHS re-categorized the mailing costs and re-categorized and renamed the un-official DL/ID in Figure 72.

Figure V-58: Virginia DMV's estimate of cost to move from OTC to central issuance[79]

Item	Amount
Implementation costs	
Driver License system changes needed for documents to print at headquarters	$ 430,000
Additional headquarters staff	167,500
Equipment	190,000
Construction	15,700
Total First year costs	**$ 803,200**
Annual operational costs	
Issuance of un-official licenses and ID cards at CSCs	$ 106,000
Mailing costs	199,600
Additional headquarters staff	167,500
Total recurring costs	**$ 473,100**

Because DHS received few and undetailed comments from other states, we have largely based our estimate on Virginia's. First, DHS calculated the fixed implementation costs of moving to central issuance and determined that systems redesign, equipment and construction costs will not significantly depend on the DL/ID population in the State. To the extent that it does (e.g. a State with many DL/IDs will need manufacturing equipment with a higher production capacity), DHS notes that in 2005 Virginia issued more than twice the number of DL/IDs as the median State and almost 1.5 times the mean of all States.[80] This portion of the estimate includes only those States that report using only the over-the-counter (OTC) issuance process. (By definition hybrid States already have a central issuance process.) Hybrid States will have some re-designing to do, and those costs are captured in the Data and Card Production sections. Using the capital implementation cost estimates provided by the Virginia DMV and extending them to the 24 States that only use OTC yields a marginal cost of $15.26 million to switch to central issuance. (See Figure V–59.)

Figure V-59: Estimated fixed initial cost for central issuance, primary estimate

Item	Per state amount (thousands)	States reporting OTC only	Total (thousands)
Systems re-design	$ 430	24	$ 10,320
Equipment	190	24	4,560
Construction	16	24	377
Total	$ 636	24	$ 15,257

When estimating the recurring costs, DHS included hybrid States because they will likely stop using their OTC processes. Consequently, all of their in-person issuances, which are presumably OTC, will need to be produced at and distributed from a central facility. DHS estimated the

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[79] DHS has taken the liberty of re-categorizing some of the elements identified by the Virginia DMV. Additionally, Virginia refers to the "unofficial licenses" as "temporary" DL/IDs. These documents are meant to be used until the holder receives their "official" DL/ID in the mail. To avoid confusing these documents with those issued to non-immigrant aliens, DHS is referring to these as "unofficial DL/IDs."
[80] AAMVA's first survey of 2006.

number of marginal central issuances by multiplying the total number of REAL ID issuances by the percentage of individuals holding DL/IDs in either OTC or hybrid States in 2005. DHS is aware that this methodology includes the central issuances in hybrid States; however, data was not available to indicate how many issuances in these States used the OTC versus the central system. DHS did not receive any data regarding this issue. Under REAL ID, there will be an additional 259 million central issuances. (See Figure V–60.)

Figure V-60: Estimated marginal central issuances (millions)

Year	In-person issuances	% in states using OTC or hybrid	Marginal central issuances
1	-	56.17%	-
2	16.3	56.17%	9.1
3	42.9	56.17%	24.1
4	40.3	56.17%	22.6
5	41.5	56.17%	23.3
6	40.2	56.17%	22.6
7	61.5	56.17%	34.6
8	52.3	56.17%	29.4
9	56.4	56.17%	31.7
10	56.4	56.17%	31.7
11	52.8	56.17%	29.7
Total	460.7		258.8

DHS used the Virginia estimate to determine the recurring cost of using a central issuance process. Unlike Virginia, DHS assumed that the un-official DL/ID is a recurring cost. The DHS estimate has a limitation similar to the Virginia estimate; neither of them account for reduced labor at customer service centers that no longer produce DL/IDs. DHS determined the unit recurring cost by dividing the estimated total costs by a calculated number of issuances. Determining the number of issuances used by the Virginia DMV also presented a challenge. Dividing the total mailing cost by the bulk postage rate calculates an estimated 538,000 issuances. This is notably below Virginia's current annual issuance level. However, using their current issuance would imply that their unit mailing cost is $0.08. A unit mailing cost of $0.08 is insufficient to cover postage. Either the DMV used a different number of issuances or they omitted the cost of postage. The analysis employs the unit costs based on the calculated, not observed or projected, issuances. Using the method above to derive unit costs, the national recurring marginal costs will be an estimated $228 million. (See Figure V–61.)

Figure V-61: Recurring cost of shifting to central issuance

Year	Marginal central issuances (millions)	Unit Costs				Marginal cost of central issuance (millions)
		Unofficial DL/ID	Production staff	Mailing costs	Subtotal	
1	-	$ 0.197	$ 0.311	$ 0.371	$ 0.879	$ -
2	9.1	0.197	0.311	0.371	0.879	8.0
3	24.1	0.197	0.311	0.371	0.879	21.2
4	22.6	0.197	0.311	0.371	0.879	19.9
5	23.3	0.197	0.311	0.371	0.879	20.5
6	22.6	0.197	0.311	0.371	0.879	19.9
7	34.6	0.197	0.311	0.371	0.879	30.4
8	29.4	0.197	0.311	0.371	0.879	25.8
9	31.7	0.197	0.311	0.371	0.879	27.9
10	31.7	0.197	0.311	0.371	0.879	27.9
10	29.7	0.197	0.311	0.371	0.879	26.1
Total	258.8					$ 227.6

DHS added the fixed cost and recurring costs to estimate the total marginal cost of switching to central issuance. This provides a primary estimate of $243 million. (See Figure V–62.) Using an upward and downward adjustment of 50 percent yields a range from $121 to 364 million.

Figure V-62: Marginal cost of switching to central issuance, primary estimate (millions)

Year	Fixed cost	Variable costs	Total
1	$ 15.3	$ -	$ 15.3
2	-	8.0	8.0
3	-	21.2	21.2
4	-	19.9	19.9
5	-	20.5	20.5
6	-	19.9	19.9
7	-	30.4	30.4
8	-	25.8	25.8
9	-	27.9	27.9
10	-	27.9	27.9
11	-	26.1	26.1
Primary	$ 15.3	$ 227.6	$ 242.8
Low (-50%)			121.4
High (+50%)			364.2

V.F.2. Design/Layout

DHS assumes that every jurisdiction will need to make modifications to the face of the card. Such adjustments include indication that the license is temporary, use of a digital photograph, and accommodation of all other informational requirements for the face of the credential. States will incur costs at the outset to design REAL IDs and the non-REAL ID. NGA, NCSL and AAMVA estimate the one-time costs for both documents at $284.4 million.[81]   Using this

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[81] NGA, NCSL and AAMVA. *The Real ID Act: National Impact Analysis.* Sep 2006, p 21.

estimate as the primary estimate to redesign the documents, the Department then adjusted by +/- 50 percent to produce a range from $142.2 to 426.6 million.

V.F.3. Security Features

DHS has adopted a performance-based approach to card security that provides flexibility for States while maintaining maximum resistance to attacks on driver licenses and ID cards. The final regulation requires REAL IDs to contain three levels of integrated security features that provide maximum resistance to counterfeiting, alteration and modification.

Because of the unique bidding and contractual negotiation processes of the States, DHS has been unable to obtain reliable line-item cost estimates for the menu of security features that may be available to meet the established standards. In order to estimate costs of various security schemes, DHS has considered the cost of existing analogous credentials. As with the design and layout of the card, the cost of the security feature is negotiated as part of a per-card cost. The following section on card production costs includes the estimate for improved security features. The inclusion of improved document security features accounts for $295 to 772 million, with a primary estimate of $428 million. (See Figure V–67 for more detail.)

V.F.4. Card production costs

In discussing the estimated cost of the card production in the NPRM, it was difficult to make a broad estimate, because States are subject to competitive bidding requirements that will vary from State to State depending on the desired card solution, volumes, and other State-specific criteria. Vendors use that information to determine a unit cost to produce the card. Clients receive increasing discounts on the unit cost as the number of credentials to be produced rises. Indeed, large orders (e.g. 10 to 20 million cards) over a 5 to 11 year period often receive a substantial discount, perhaps in the neighborhood of 50 percent, when compared with an order of a few tens of thousands.

Unit costs of cards reported by States typically includes more than simple card production costs. Depending on the State and their contract the reported unit cost may also include data storage, facial recognition analysis, IT systems and support, physical security measures and either complete card production by the vendor or the components to be assembled by the State itself. Unfortunately, the data gathered in our analysis did not indicate what costs are included in States' per-unit cost. As a result, our analysis did not account for any cost variability for what a State may include in their card production cost. Rather, the analysis focused on current card cost, security features present in their cards versus the REAL ID requirements, and the method of issuance.

For the NPRM, DHS had prepared primary, low and high estimates of the cost of card production. These were estimates for how much a State would pay based on a per-card basis. Because it is based on the current market, these costs included the card itself and its security features along with other related costs incurred by the manufacturer. As established in the Status

Quo section, card production costs under the baseline would total $657 million. (See Figure V–63, which reproduces Figure III–9.)

Figure V-63: Cost of card production under status quo, repeated

Year	Issuances (thousands)	Mean cost (weighted)	Total (thousands)
1	-	$ 1.38	$ -
2	16,304	1.38	22,500
3	43,236	1.38	59,665
4	40,780	1.38	56,277
5	42,226	1.38	58,272
6	41,183	1.38	56,832
7	63,203	1.38	87,219
8	54,444	1.38	75,133
9	59,186	1.38	81,677
10	59,481	1.38	82,084
11	56,337	1.38	77,746
Total	476,380		$ 657,405

The Final Rule reflects a performance-based approach to card security and eliminates the more prescriptive, costly requirements outlined in the NPRM. It recognizes that a "one size fits all" solution isn't practical or effective, and provides States the flexibility to build upon the security of existing drivers' licenses and identification cards to achieve a key REAL ID goal of more secure documents. Based on extensive research, confidential discussions with States and vendors, and experience with State DMV operations, this analysis concluded that the weighted, cost-per-card of a card compliant with the final rule is $2.28, which is an increase of $0.90 over the status quo weighted cost figure of $1.38 calculated for the NPRM.

This is a significant reduction from the calculated cost of $7.60 for a REAL ID card as described in the NPRM. While individual State per-card costs will vary, we believe the .90 figure is still high. First, even before 9/11, States have continually monitored and upgraded the security of their documents, depending upon their particular needs. When license contracts are up for renewal or re-bidding, States typically seek improvements to the security of their documents, which impacts the per-document cost. Second, many States have Level 1 and 2 security features[82] that exceed the requirements of the final rule, and we were unable to gather sufficient data to break out the cost for the *minimum* security requirements from the total per-card cost for each State.

Lastly, as referenced above, there are contractual differences from State-to-State concerning what is included in the per-card-cost. For example, card production costs for States with similar populations will vary by the number and complexity of security features.

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[82] Level 1 or overt security features, are those that can be determined without the aid of equipment or lights. Level 2, or covert features, are those that require basic equipment or lights to identify, such as black lights, loupes or readers. Level 3, or forensic, security features require specialized training and the use of equipment typically found in forensic laboratories.

For this analysis, we utilized four cost factors as described below. These factors were based on experience, analysis and research of all available State and vendor data, and represent what we believe to be reasonable and reflective of the maximum States might pay under each scenario.

1) Known Compliant States- States that we know have Level 1, 2 and 3 security features, as required by the rule. The cost factor for these States is as follows:

   New Card Cost = Current Cost +.25 as a positive security marking cost

2) Partially Compliant States-Central Issuance. These States currently incorporate level 1 and 2 security features, but not level 3. States that issue documents from a central location typically use more secure card stock than Hybrid or Over-The-Counter (OTC) States. These States will have to make investments in Level 3 security features, minimal investments in card stock, as well as the positive security marking. The cost factor for these States is as follows:

   New Card Cost = (Current Cost x 1.25) +.25 as a positive security marking cost

3) Partially Compliant States-Hybrid Issuance. Hybrid issuance States utilize a combination of both central issuance and over-the-counter issuance methods. For example, Florida issues cards over-the-counter for US citizens, but requires central issuance for non-US-born applicants. This gives them the opportunity to conduct an additional review before issuing a secure document. These States currently incorporate level 1 and 2 security features, but not level 3, and will have to make investments in level 3 security features, modest investments in card stock and related materials, as well as the positive security marking. The cost factor for these States is as follows:

   New Card Cost = (Current Cost x 1.50) +.25 as a positive security marking cost

4) Partially Compliant States-Over-the Counter (OTC) Issuance. OTC States are States that produce a completed document for the customer in the office. States utilizing OTC issuance will generally have to make investments in level 3 security features, moderate investments in card stock enhancements as well as the positive security marking. Facility security becomes more critical for OTC States, as card production equipment and materials must be adequately protected from loss or theft. The cost factor for these States is as follows:

   New Card Cost = (Current Cost x 1.90) +.25 as a positive security marking cost

Additionally, if a State issues a license that is not in compliance with REAL ID, the State is required by statute and regulation to indicate on the document that it is not valid for official federal purposes. According to U.S. license vendors, there is typically an upfront one time set up fee for the State, which may include license redesign, system reconfiguration, and other related costs. Based on our analysis of information received from vendors and States, we have used the figure of $10,000 per State, or $.01 per document. The actual cost will vary depending on the State, vendor and any existing contractual agreement it may have concerning design changes

Multiplying the range of unit card costs by the number of projected issuances yields a card production estimate ranging from $953 million to $1.43 billion with a primary estimate of $1.1 billion. (See Figure V–64.) This represents the total cost to produce REAL ID cards – not the marginal cost.

Figure V-64 Total REAL ID card production cost

Year	Issuances (millions)	Unit	Total (millions)
1	-	$ 2.28	$ -
2	16.3	2.28	37.2
3	43.2	2.28	98.6
4	40.8	2.28	93.0
5	42.2	2.28	96.3
6	41.2	2.28	93.9
7	63.2	2.28	144.1
8	54.4	2.28	124.1
9	59.2	2.28	134.9
10	59.5	2.28	135.6
10	56.3	2.28	128.4
Primary	476.4		$ 1,086.1
Low		$ 2.00	$ 952.8
High		$ 3.00	$ 1,429.1

Finally, DHS subtracted the status quo card production costs (Figure V-64 minus Figure V-63) from the estimated REAL ID card production costs. The marginal cost increase due to REAL ID ranges from $295 to 772 million, with a primary estimate of $429 million. (See Figure V–65.) These estimates account for the increase in issuances, increased document security features and the 2-D barcode.

Figure V-65: Marginal cost of REAL ID card production (millions)

Year	Primary estimate	Low estimate	High estimate
1	$ -	$ -	$ -
2	14.7	10.1	26.4
3	38.9	26.8	70.0
4	36.7	25.3	66.1
5	38.0	26.2	68.4
6	37.1	25.5	66.7
7	56.9	39.2	102.4
8	49.0	33.8	88.2
9	53.3	36.7	95.9
10	53.5	36.9	96.4
11	50.7	34.9	91.3
Total	$ 428.7	$ 295.4	$ 771.7

Due to the complicated nature of vendors' pricing structure, DHS does not have specific data on the individual cost of each line-item for the card production. However, the estimated total cost of producing REAL IDs can be compared to producing today's cards at the REAL ID issuance levels. Such a comparison will give an idea as to how much of the increased cost is due to increased issuance as opposed to improved document security features. Multiplying the projected REAL ID issuances by the current weighted average unit card cost produces a cost estimate of $685 million to produce REAL IDs at today's weighted average unit cost. (See

Figure V–66.) This produces an estimate of the card costs if DHS were to omit any standards affecting the unit cost of the card (e.g. document security standards).

Figure V-66: REAL ID card production cost using current card costs (millions)

Year	Real ID issuances	Unit cost	Total
1	1	$ 1.38	$ 1.0
2	16.3	1.38	22.5
3	43.2	1.38	59.7
4	40.8	1.38	56.3
5	42.2	1.38	58.3
6	41.2	1.38	56.8
7	63.2	1.38	87.2
8	54.4	1.38	75.1
9	59.2	1.38	81.7
10	59.5	1.38	82.1
11	56.3	1.38	77.7
Total	477.1		$ 658.4

Subtracting this number from the total cost of producing REAL IDs (see Figure V–64) results in an estimated marginal cost of $295 to 772 million, with a primary estimate of $428 million, for document security improvements. (See Figure V–67.) This estimate may be viewed from two perspectives. First, it is the cost of complying with DHS's final rule concerning the physical security features of documents. Alternatively, this is how much less costly compliance would be if DHS had either 1) not required a minimum standard or 2) established a minimum standard that did not require States to change their current practices regarding document security features.

Figure V-67: Marginal card production cost due to improved document security (millions)

Year	Cost of issuing Real IDs using current standards	Marginal cost of document security improvements		
		Primary estimate	Low estimate	High estimate
1	$ 1.0	$ (1)	$ -	$ -
2	22.5	14.7	10.1	26.4
3	59.7	38.9	26.8	70.0
4	56.3	36.7	25.3	66.1
5	58.3	38.0	26.2	68.4
6	56.8	37.1	25.5	66.7
7	87.2	56.9	39.2	102.4
8	75.1	49.0	33.8	88.2
9	81.7	53.3	36.7	95.9
10	82.1	53.5	36.9	96.4
11	77.7	50.7	34.9	91.3
Total	$ 658.4	$ 427.7	$ 295.4	$ 771.7

The card production savings of the regulation due solely to decreased issuances is estimated at $573 million, which is equal to the marginal issuances multiplied by the current weighted average unit card cost. (See Figure V–68. Note that adding the estimate in Figure V–68 to those in Figure V–67 gives the total marginal increase in Figure V–65.)

Figure V-68: Marginal card production cost due to increased issuance (millions)

Year	Unit card cost	Marginal issuances	Marginal cost due to increased issuances
1	$ 1.38	-	$ -
2	1.38	(68.91)	(95.10)
3	1.38	(42.88)	(59.17)
4	1.38	(46.19)	(63.75)
5	1.38	(45.58)	(62.90)
6	1.38	(47.43)	(65.45)
7	1.38	(26.19)	(36.14)
8	1.38	(35.71)	(49.28)
9	1.38	(31.73)	(43.79)
10	1.38	(33.82)	(46.67)
11	1.38	(36.96)	(51.01)
Total		(415.4)	$ (573.3)

V.F.5. Machine Readable Technology

The final rule requires 2-D barcodes on all compliant IDs. This technology is already used by the vast majority of States. All States will need to ensure they meet the data requirements of the rule. This will require States to examine their software processes, the cost of which is estimated in the Data section. States not currently using a 2-D barcode will need to print it on their new licenses. However, discussions with one vendor indicate that this printing represents no marginal increase in the unit cost of cards to the States. Further, DHS assumes that any marginal cost increases to coordinate with vendors are included in the unit cost of producing the card. The final rule calls for inclusion of a 2-D barcode because it leverages current State practices. Choosing another MRT would place an unnecessary cost burden upon the States.

Alternate technologies considered for the minimum standard included linear barcodes, contact smart-chips, optical stripe and contact-less chips. The 2-D PDF417 technology was chosen over the others based on performance capabilities, privacy concerns and cost implications.

DHS determined that some of the alternative technologies did not have adequate performance capabilities. The first in this category was the linear, or one-dimensional barcode. Mindful that the final regulation implements minimum standards, a linear barcode would not allow States to use the common MRT to hold all the data that appears on the face of the document, much less any additional data beyond that required in the regulation. For instance, if a State chose to include the photograph or a digitized fingerprint, neither of which are required by the regulation, they would not be able to include this in a linear bar code. Consequently, those States would need more than one MRT on their credentials. Because of the extreme limitation in storage space in a linear barcode (typically 30 characters), DHS opted for the two dimensional, or 2D barcode, currently in use by at lease 45 States, which will typically accommodate up to 2000 characters.

Optical stripe technology might conceivable meet the data requirements; however, driver licenses and identification documents are removed and replaced in wallets and purses, sent

through the laundry and suffer other abuses on a semi-regular basis. DHS was thus concerned that this medium is not durable enough to be reliable over time.

The contactless chip, sometimes referred to as radio frequency identification (RFID), was deemed an unnecessary technology standard. First and foremost, this technology is more expensive than for 2-D barcodes. Second, DHS determined that there was not an identifiable need for drivers' licenses and identification cards to be routinely read at a distance..

DHS has examined two costs related to the alternate MRTs: the cost of producing the cards and the cost of outfitting agencies with the appropriate equipment to read and/or encode the MRT. First, consider the cost of producing cards with various MRTs. Credentials with optical stripes cost $7, ranging from $5 to $10. Credentials with contact chips cost $3.50 but range from $2 to $8. Finally, credentials with Radio Frequency Identification cost $5 and range from $3 to $10. (See Figure V–69.)

Figure V-69: Estimated unit cost of alternative MRTs[83]

Technology	Primary	Low	High
Optical Stripe	$ 7.00	$ 5.00	$ 10.00
Contact chip	3.50	2.00	8.00
RFID	5.00	3.00	10.00

Multiplying the estimated unit costs by the total expected REAL ID issuances produces estimates of the cost of employing each of these technologies for REAL ID. It is imperative to remember that these estimates are only for a base card with the selected technology. They do not reflect the use of add-on security features. The cost to produce 477 million credentials with optical stripes ranges from $2.3 to 4.8 billion, with a primary estimate of $3.3 billion. Producing the same number of credentials with contact chips would cost from $953 million to $3.8 billion, with a primary estimate of $1.7 billion. Finally, producing 477 million credentials with RFID tags would cost from $1.4 to 4.8 billion with a primary estimate of $2.4 billion. (See Figure V–70.)

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[83] Estimates based on DHS conversations with various subject matter experts.

Figure V-70: Total cost to issue REAL IDs with alternative MRTs (millions)

Year	Real IDs issued	Optical stripe	Contact chip	RFID
1	-	$ -	$ -	$ -
2	16.3	114.1	57.1	81.5
3	43.2	302.6	151.3	216.2
4	40.8	285.5	142.7	203.9
5	42.2	295.6	147.8	211.1
6	41.2	288.3	144.1	205.9
7	63.2	442.4	221.2	316.0
8	54.4	381.1	190.6	272.2
9	59.2	414.3	207.2	295.9
10	59.5	416.4	208.2	297.4
11	56.3	394.4	197.2	281.7
Primary	476.4	$ 3,334.7	$ 1,667.3	$ 2,381.9
Low		2,381.9	952.8	1,429.1
High		4,763.8	3,811.0	4,763.8

The cost of using 2-D barcode technology lies mostly in the formatting of data and coordination between DMVs and vendor IT systems, not in a physical infrastructure of the card. (The physical infrastructure is merely the ink or laser engraved pattern on the back of the card. One industry expert likened the marginal cost of including the pattern to the cost of adding two more words onto a page printed by word processing software.) Further, no matter which technology DHS had chosen, State DMVs would need to coordinate their IT systems and the formatting of data in the MRT.

DHS has compared the estimated cost of issuing the projected number of REAL IDs using the weighted mean cost of current DL/IDs (Figure V–66) to the estimated costs of issuing REAL IDs with each of the alternative MRTs. (Note: the cost of using a linear barcode is roughly the same as a 2-D barcode as neither involves physical infrastructure of the card.) This comparison shows that adding optical stripes to today's cards at REAL ID issuance levels would add from $1.7 to 4.1 billion, with a primary estimate of $2.7 billion to the cost of card production. Doing the same with contact chips would add from $295 million to $3.2 billion, with a primary estimate of $1.0 billion. If RFID technology was used on today's cards at REAL ID issuance levels, it would add $772 million to 4.1 billion, with a primary estimate of $1.7 billion, to production costs. (See Figure V–71 for details.)

Figure V-71: Marginal cost to issue REAL IDs with alternate MRTs (millions)

Year	Optical stripe	Contact chip	RFID
1	$ -	$ -	$ -
2	91.6	34.6	59.0
3	243.0	91.7	156.5
4	229.2	86.5	147.6
5	237.3	89.5	152.9
6	231.4	87.3	149.1
7	355.2	134.0	228.8
8	306.0	115.4	197.1
9	332.6	125.5	214.3
10	334.3	126.1	215.3
11	316.6	119.4	203.9
Primary	2,677.3	1,009.9	1,724.5
Low	1,724.5	295.4	771.7
High	4,106.4	3,153.6	4,106.4

In addition to producing the cards with the alternate technology, States would need to provide themselves with the equipment to read and, in some cases, write data contained in the MRT. A basic reader for optical stripes costs on the order of three thousand dollars.[84] Contact chip readers can cost from $10 to $150 for an individual, USB-type card reader. The costs vary depending on the sophistication of the equipment. "Intelligent" readers, with the capability of performing calculations are more expensive than the simple readers that merely extract data from the MRZ. Finally, RFID readers can cost from $35 to $200 dollars. Again, the variation depends greatly upon the features of the equipment.

DHS is unable to estimate the number of readers that each State would need in order to implement an alternative MRT. Certainly they would need readers to equip their DMVs. However, States would also need to retrofit other agencies' systems, including those of law enforcement. DHS did not receive data on how many readers would be required either nationally or by State. Because it cannot determine the required number of readers, DHS is not providing a total or marginal cost estimate for this part of the alternatives analysis. However, a simple examination supports DHS' hypothesis that national implementation of these alternatives would be more expensive than the required 2-D barcode. Quite simply, nearly all States are currently using 2D barcode technology. Consequently, the agencies that require readers/scanners for the technology should already have them. There are a handful of States that will need to outfit their appropriate systems with 2D scanners. However, the cost of doing so will likely be minimal.

V.G. Data

Implementation of REAL ID will require modifications to existing and the creation of new data/IT systems. States will need to modify their DMV systems to capture and maintain all of the required information and electronically verify certain pieces of information. Federal systems will need modifications to ensure they can handle capacity and perform reliably for the DMV

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[84] MRZ reader estimates based on information from various industry experts.

environment. Other systems, like EVVE, need to be developed beyond the prototype phase. At this time, DHS is only able to estimate the cost to State DMVs, the Department, and costs for the system used to interconnect State DMVs. The following analysis draws upon work done by the DHS CIO office and joint work done by NGA, NCSL and AAMVA. DHS received comments and data regarding creation of and upgrades to these systems. Where appropriate, DHS has adjusted its estimate.

The estimated modifications of existing and creation of new systems will cost an estimated $1.6 billion over eleven years and could range from a low of $656.8 million to $2.2 billion. (See Figure V–72.) These estimates are for the decentralized system of distributed databases envisioned by the Department and reflected in the flexibility of the final rule. One alternative to this system would be to use a centralized system, likely created and maintained by the Federal government. While the initial investment in such a system would be slightly less than for the distributed system, the centralized system would incur marginal operating costs that would be redundant, given other existing systems. In any case, the Department believes that the centralized alternative would not be adopted as a means of compliance under the final rule.

Figure V-72: Data/IT cost summary

Year	States	Centralized (alternative) DHS	Total	Decentralized DHS	Total
1	$ 601.9	$ 38.8	$ 640.7	$ 41.8	$ 643.7
2	92.7	43.7	136.4	4.0	96.7
3	92.7	59.6	152.3	4.0	96.7
4	92.7	66.7	159.3	4.0	96.7
5	92.7	54.7	147.3	4.0	96.7
6	92.7	40.2	132.9	4.0	96.7
7	92.7	40.2	132.9	4.0	96.7
8	92.7	40.2	132.9	4.0	96.7
9	92.7	40.2	132.9	4.0	96.7
10	92.7	40.2	132.9	4.0	96.7
11	92.7	40.2	132.9	4.0	96.7
Primary	$ 1,528.7	$ 504.7	$ 2,033.4	$ 81.8	**$ 1,610.5**
Low	582.8	432.6	*1,015.4*	74.1	**656.8**
High	2,159.8	495.1	*2,654.9*	81.6	**2,241.4**

V.G.1. State systems

States will need to modify their current systems to accomplish the tasks necessary for REAL IDs. This work will include:
- modification of databases (e.g. to accommodate all data fields printed on the card, individual serial numbers of the card, and SSN; full legal name and recorded name if different; all additional data fields in the MRZ);
- reprogramming front- and back-end software/processes;
- acquisition of hardware (e.g. desktop stations, additional storage media, document scanners, cameras, etc.); and,

- expanding telecommunications capacities to accommodate increased verifications and other communications.

Combining the implementation and recurring cost analyses yields a primary estimate of $1.53 billion and falling between $583 million and $2.2 billion (See Table V-72).

In an effort to estimate the cost of IT and related business practice modifications, AAMVA, in conjunction with the National Governor's Association and the National Conference of State Legislatures, conducted multiple surveys of its membership. The results of their second 2006 survey indicate that the one-time implementation cost for IT and related systems will be $601.9 million. (See Figure V-73.) Adjusting the primary by +/- 50 percent provides a range from $301 to 903 million for initial implementation costs.

Figure V-73: State systems implementation estimates (millions)[85]

Item	One-time cost
Verification systems	$129.2
Driver history records	31.0
Photo capture	72.4
Lawful presence	65.5
Full legal name	185.7
Address	53.7
Images of source documents	64.5
Total (primary)	**$601.9**
Low (-50%)	301.0
High (+50%)	902.9

Based upon the same survey, the tri-party estimate for recurring costs is $814 million over five years or an average of $162.8 million per year. However, conversations with AAMVA indicate that this estimate represents the total ongoing cost of the IT systems. Sufficient detail is not available to determine the difference between costs under REAL ID and the costs of current systems. Therefore, DHS has used State responses to a 2005 AAMVA survey to estimate recurring costs.

Some States provided IT cost info in their responses to AAMVA's first survey of 2005, upon which the following recurring cost estimates are based. Analysis of those State responses yields an estimated annual recurring cost of $92.7 million, which could range from $28.2 to 125.7 million, per year for years two through ten. Over nine years, the recurring costs will range from $253.6 million to $1.13 billion with a primary estimate of $834.1 million. The national estimate is based upon the responses of 11 States that provided cost estimates for IT related functions. The following paragraphs describe how those estimates were derived.

In AAMVA's 2005 survey 11 States estimated the cost of complying with some of the requirements of REAL ID. Their estimates focused largely upon the cost for States to establish the necessary IT systems for data collection, processing, storage and transmittal. The State DMV estimates are State specific. State DMVs included, as they saw fit, items including:

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[85] National Governors Association, National Conference of State Legislatures and American Association of Motor Vehicle Administrators. *The Real ID Act: National Impact Analysis*. Sep 2006. Available at <http://www.aamva.org>. Accessed 5 Oct 2006.

- Hardware (e.g. scanners, storage media);
- Software programming (e.g. adjustments to existing systems and/or new programs);
- Connectivity;
- Business process changes;
- IT and business process training;
- Costs associated with verifying documents from non-Federal agencies (e.g. birth certificates), and;
- Recurring operations and maintenance costs.

In addition, some States also included items that are included in other areas of the analysis. In most instances, DHS was unable to determine the precise nature of what each State included in its estimate and if the inclusion of individual line-items would result in double counting. However, the instances of possible double counting—using an inclusive as opposed to exclusive criterion—showed that for most States the amount at risk of being double counted was less than 10 percent of their total estimate. Figure V–74 shows the items and percent of each estimate at risk of being double counted. Three States did not provide adequate detail for the Department to determine the possibility of double counting.

Figure V-74: Possible double counting in IT estimate section

State	Delaware	District of Columbia	Idaho	Montana	North Dakota	Pennsylvania	South Carolina	Tennessee	Virginia [b c]	Washington [c]	Wisconsin [c]
State	A	B	C	D	E	F	G	H	I [b c]	J [c]	K [c]
Possible issue double counted [a]	$1,046,766	$280,000	$60,000	$170,200	$425,000	$350,000	$773,875	$ -	Unknown	Unknown	Unknown
Total estimate [a]	$2,871,569	$18,580,000	$3,890,000	$2,160,200	$5,960,600	$10,631,250	$1,313,875	$1,765,000	Varies	$190,066,004	$3,870,850
% possible double count	**36%**	**2%**	**2%**	**8%**	**7%**	**3%**	**59%**	**0%**	**N/A**	**N/A**	**N/A**
Increased applications					X				X	X	X
Document redesign	X		X	X	X	X					
Training (Process, FDR, etc.)	X	X		X	X		X				
SSN resolution	X			X							
Bilingual staff (lawful presence requirement)	X										
Background checks	X	X		X	X		X				
SAVE verifications (included elsewhere)					X						
Other physical security requirements	X				X						
Establish non-compliant document		X	X	X							
Legislative/ rule changes					X						
Media campaign										X	

[a] Time periods vary by State but are consistent within a State's estimate.

[b] State 'I" provided four estimates with one-time costs ranging from $2.3 to $136.1 million and recurring costs from $0.8 to $62.7 million.

[c] The State did not provide adequate detail to know how much of the estimate is at risk for double counting.

Where States provided line item estimates but no timeline, the analysis divides those costs into initial and recurring categories. The initial costs are all included in the first program year. To extend all estimates for the full 11 year program estimate, the analysis utilizes each State's estimated recurring cost from year two through year eleven. Other States provided a timeline of their costs. These were maintained and are reflected in each program year. The estimates from State timelines were extended to cover the full 11 years by using either: 1) the State's estimated recurring cost for any remaining years if available, or; 2) the estimated cost incurred during the last year estimated by the State.

DHS assumed that estimates reported by the States do not double count items provided elsewhere within their own estimates. However, it is possible that the DHS interpretation of some States' responses could result in double counting. This largely appears where a State estimated the same number of labor hours at the same rate for similar programming. For instance, one State included costs to modify their drivers' license file six times, each at the same cost. The AAMVA defined items for which the State provided the same estimate are:

- Introduce full legal name;
- Establish temporary DL/ID cards that tie end of stay to expiration;
- Modifying temporary documents to show the different than usual expiration (also included as a possible double count;
- Developing access capability to SAVE;
- Establishing procedures to confirm or verify a renewing applicant's information, and;
- Resolving SSN mismatches.

Because it is not clear if the estimate intended to make all six adjustments once at the one cost or if the cost will be incurred for each change, DHS has included the amount each time it was provided by the State.

A handful of States also included costs to manually verify documents. DHS has subtracted those pieces, where possible, from State estimates because the goal is to fully automate the verifications.

V.G.2. National Systems

The rule will require some national systems. The objectives of these systems are to:

- verify:
  - o   identity source documents (via EVVE and a DOS system);
  - o   social security number (via SSOLV);
  - o   lawful status (via SAVE);
  - o   that the applicant does not hold a drivers' license in another State or that the other license is being terminated (system to be determined); and,
- "Provide electronic access to all other States to information contained in the motor vehicle database of the State" per section 202(d)(12) of the Act.

Any number of approaches can be used to establish, modify and integrate the necessary systems. Because the final architecture is not yet known, the costs are exceedingly difficult to estimate.

The source of funding is also not yet known; for analytical purposes those costs are being treated as Federal costs.

One possible approach to integrating the systems is to update AAMVAnet and leverage its current connections to both State and federal agencies. The primary estimated cost of leveraging current systems is $81.8 million over eleven years. DHS estimates that the upgrade for AAMVAnet would cost $30.8 million. Some commercial off-the-shelf (COTS) software would also cost an additional $1.0 million for implementation. Finally, DHS would need to upgrade its SAVE and SEVIS systems at an estimated cost of $4.0 million. There would be no marginal recurring costs, as those would be folded into already existing operations, refresh and maintenance costs. There would, however be a program office designed to support users. During the implementation this would cost an estimated $6.0 million and then be reduced to $4.0 million for years two through eleven. The total program office cost is estimated at $46.0 million over eleven years. Each of the above costs are shown in Figure V–75.

Figure V-75: National IT system (millions)

Year	PMO	Software AAMVA	Software COTS	O & M	SAVE	Total
1	$ 6.0	$ 30.8	$ 1.0	$ -	$ 4.0	$ 41.8
2	4.0	-	-	-	-	4.0
3	4.0	-	-	-	-	4.0
4	4.0	-	-	-	-	4.0
5	4.0	-	-	-	-	4.0
6	4.0	-	-	-	-	4.0
7	4.0	-	-	-	-	4.0
8	4.0	-	-	-	-	4.0
9	4.0	-	-	-	-	4.0
10	4.0	-	-	-	-	4.0
11	4.0	-	-	-	-	4.0
Primary	$ 46.0	$ 30.8	$ 1.0	$ -	$ 4.0	$ 81.8

Another approach is for an entirely new system to be built from the ground up. This system would require an entity, presumably DHS or its agent, to build a system that accomplishes all of the IT goals of REAL ID. This centralized system would cost an estimated $504.7 million over eleven years. While the initial investment would be slightly less than for the decentralized system, the centralized system would be forced to incur recurring costs that replicate current system operations and maintenance costs—the status quo systems may still exist and would continue to incur recurring costs. The decentralized system, on the other hand, would leverage the current systems and would not produce any substantial marginal recurring costs. In either case, States will plug into this system, thereby ensuring that they meet the data sharing goals of REAL ID. Information available at this time suggests that the cost to the States will be similar under either model as they will need to adjust their systems to connect either to the centralized or distributed systems.

Figure V-76: Alternate-National IT system (millions)

Year	PMO	Software	SAVE	Integration	Hardware	O & M	Total*
1	$ 10.5	$ 20.4	$ 4.0	$ 6.0	$ 1.0	$ 0.9	$ 38.8
2	17.0	13.5	-	4.0	1.0	8.2	43.7
3	17.0	22.2	-	6.5	1.0	12.9	59.6
4	17.0	23.8	-	7.0	1.0	17.8	66.7
5	17.0	12.5	-	3.7	1.0	20.5	54.7
6	17.0	1.0	-	0.3	1.0	20.9	40.2
7	17.0	-	-	-	1.0	20.9	40.2
8	17.0	-	-	-	1.0	20.9	40.2
9	17.0	-	-	-	1.0	20.9	40.2
10	17.0	-	-	-	1.0	20.9	40.2
11	17.0	-	-	-	1.0	20.9	40.2
Primary	$ 180.5	$ 93.4	$ 4.0	$ 27.5	$ 11.0	$ 185.8	$ 504.7

* Due to risk modeling, yearly totals are not simple sums of component costs.

V.G.3. Manual Verifications

The final regulation does not require, nor does it envision, States performing manual verifications of source documents with issuing agencies. However, a handful of States have provided estimates of the costs in their responses to the 2005 AAMVA survey, should this have been the case. These estimates are presented below.

If, for some reason, the IT systems were not available and States were nevertheless required to verify source documents, they would be obliged to do so manually. Four States specifically provided estimates of the cost to manually verify documents, which ranged from as little as $110,000 to as much as $8.7 million per year.[86] (See Figure V–77.)

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[86] AAMVA's first survey of 2005

Figure V-77: States' manual verification estimates

State	State	Comments	Amount	2005 DL/IDs on file	2005 DL/IDs on file
District of Columbia	1	Fully manually system could require as much 35 additional staff (+30%) at approximately $1.75 million/year	$ 1,750,000	<500,000	399,829
South Carolina	2	Not all states have electronic verification capabilities – if manual process is required, the impact will include 5 additional FTE's @$22,000/year	$ 110,000	Between 2.5 and 5 million	3,569,000
Washington	3	Responds that: "It is assumed that 80% of the documents can be verified in three minutes through electronic means while the other 20% will take15 minutes due to mailing requirements."	Not specified	>5 million	5,036,681
Wisconsin	4	Manual verification of documents requiring, on average, 30 minutes each.	$ 8,698,300	Between 2.5 and 5 million	4,386,956

Numerous challenges prevent extrapolating these estimates to the rest of the jurisdictions. First, some of the estimates assume a fully manual system while others assume that a portion of documents can be verified by automated processes. Second, the reported estimates do not provide sufficient detail on the underlying assumptions (e.g. wage rates, number of documents to be verified, average time to verify each document, etc.) to compare consistency and validity of assumptions. Consequently the manual verification estimates provide anecdotal evidence of the cost to manually verify source documents.

V.H. Security

The final REAL ID regulation requires States to meet minimum standards for ensuring the physical security of facilities and materials, conducting employee background checks and providing fraudulent document recognition (FDR) training to employees. These functions will cost an estimated marginal $333 to 500.7 million, with a primary estimate of $412.5 million. (See Figure V–78.)

Figure V-78: Summary of security related costs (thousands)

Year	Physical security of facilities	Employee background checks	FDR training	Total
1	$ 194,333	$ 1,435	$ 13,825	$ 209,594
2	19,433	611	1,905	21,950
3	19,433	368	298	20,099
4	19,433	393	467	20,293
5	19,433	378	363	20,174
6	19,433	347	238	20,018
7	19,433	347	238	20,019
8	19,433	368	299	20,101
9	19,433	368	300	20,101
10	19,433	368	300	20,101
11	19,433	368	301	20,102
Primary	$ 388,667	$ 5,352	$ 18,534	$ 412,553
Low	320,467	3,318	9,267	333,051
High	462,967	9,953	27,801	500,721

V.H.1. Physical security of facilities and materials

The final rule requires State DMVs to complete security plans for facilities and systems that are involved in the manufacturing and production of REAL ID cards. As stated in the Status Quo section, DHS has determined, based upon the AAMVA survey questionnaire responses, that 27 States have security programs that will likely be compliant. Of the remaining DMVs, only the production facilities will need to ensure they employ rigorous security programs. Recall that the analysis assumes DMVs will shift to central issuance systems in order to minimize these costs.

DHS has estimated the distribution of States according to their current security levels based upon their responses to AAMVA's 2005 survey. For each category DHS has estimated the average cost per State to upgrade their security to meet the minimum standards of the regulation. States that either did not respond or provided indeterminate responses are included in the "unknown" category and their estimated costs are the mean of the other categories' average estimated costs. The primary cost estimate of initial upgrades is $194 million. (See Figure V–79.)   DHS estimated recurring marginal security costs as a percent of the initial upgrade cost. Adding recurring costs of 10% per year for 10 years produces a total primary marginal estimate of $389 million.

Figure V-79: Estimated initial physical security upgrades, primary estimate (thousands)

Current security level	# of states	Average cost per state to upgrade (thousands)	Total (thousands)
Low	9	$ 10,000	$ 90,000
Medium	8	$ 5,000	40,000
High	27	$ 1,000	27,000
Unknown	7	5,333	37,333
Capital upgrades	51		$ 194,333
Recurring costs (10%) for 10 years			194,333
Total			**$ 388,666**

Because of inconsistencies in the responses to the AAMVA survey, DHS has provided high and low estimates based upon different distributions of States between current security levels. (See Figure V–80). DHS shifted the distribution by one-third to the next adjacent category. For example, one-third of eight is rounded up to three. Three States were moved from the medium to the high category for the low cost estimate. Those three States were moved from the low category and added to the medium category for the low cost estimate. The result is six States in the low category, eight in the medium category and 30 in the high category. A similar procedure was used to estimate the high category except that the categorization changes moved in the opposite direction. This method yields a low estimate of $169 million and a high estimate of $244 million in marginal initial costs to improve physical security. Adding recurring costs of 10 percent annually for ten years, which ranges from $169 to 244 million, yields a total marginal cost of $337 to 487 million.

Figure V-80: Estimated initial physical security upgrades, low and high estimates

Current security level	Average cost per state to upgrade (thousands)	Low		High	
		State distribution	Total (thousands)	State distribution	Total (thousands)
Low	$ 10,000	6	$ 60,000	12	$ 116,667
Medium	$ 5,000	8	41,667	14	71,667
High	$ 1,000	30	29,667	18	18,000
Unknown	$ 5,333	7	37,333	7	37,333
Capital improvements		51	$ 168,667	51	$ 243,667
Recurring costs (10% for 10 years)			168,667		243,667
Total			$ 337,334		$ 487,334

V.H.2. Employee background checks

The rule requires that all persons who are involved in the manufacture or production of REAL ID drivers' licenses and identification cards, or who have the ability to affect the identity information that appears on the drivers' license or identification card must undergo a background check. This check will consist of a criminal history records check (CHRC) through the FBI, an employment eligibility check and a reference check. Though some States perform various background checks, DHS has assumed that all employees must be rechecked. DHS was unable to determine both the exact scope of States' background checks and the disqualifiers that they

use. Even for States currently using the FBI's CHRC, the regulation may offer differing disqualification criteria and thus require the State to re-run the check. The FBI charges $22 to run the CHRC check. The FBI requires fingerprints, which are collected at a cost of $23.[87] Combined, the variable pieces of the background check will cost an estimated $45. The primary estimate of the total cost to run the various background checks on all employees is $5.3 million. (See Figure V–81.) Adjusting the primary estimate by +/- 50 percent provides an estimated range from $3.3 to 10.0 million.

Figure V-81: Cost of REAL ID required background checks

Year	Employees to be checked (thousands)	CHRC (FBI)	CHRC (fingerprints)	Immigration Check	Subtotal	Total (thousands)
1	31.7	$ 22	$ 23	$ 0.26	$ 45	$ 1,435
2	13.5	22	23	0.26	45	611
3	8.1	22	23	0.26	45	368
4	8.7	22	23	0.26	45	393
5	8.3	22	23	0.26	45	378
6	7.7	22	23	0.26	45	347
7	7.7	22	23	0.26	45	347
8	8.1	22	23	0.26	45	368
9	8.1	22	23	0.26	45	368
10	8.1	22	23	0.26	45	368
11	8.1	22	23	0.26	45	368
Primary	118.2					$ 5,352
Low (-50%)						3,318
High (+50%)						9,953

V.H.3. Fraudulent document recognition training

The final rulemaking requires that DMV employees accepting source identity documents for REAL ID credentials complete fraudulent document recognition training. This will require States not currently training employees to develop training programs and ensure all of their employees are trained; a fraudulent document training program approved by AAMVA will satisfy this requirement. Further, employees hired to process the increased workload in all States will need to complete the training. The primary 11-year marginal estimate is $18.5 million. (See Figure V–82.) Adjusting the primary estimate by +/- 50 percent yields a range from $9.3 to 27.8 million.

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[87] The median price reported for fingerprint collection by a private contractor, a county sheriff, the Transportation Security Clearing House and TSA program knowledge is the $23 estimate.

Figure V-82: Marginal FDR training costs (thousands)

Year	Course development and other initial costs	Training employees	Total
1	$ 12,635	$ 1,191	$ 13,825
2	-	1,905.2	1,905.2
3	-	297.9	297.9
4	-	466.7	466.7
5	-	362.8	362.8
6	-	238.1	238.1
7	-	238.1	238.1
8	-	299.3	299.3
9	-	299.9	299.9
10		299.9	299.9
11	-	300.6	300.6
Primary	$ 12,635	$ 5,899	$ 18,534
Low	6,317.4	2,949.6	9,267.0
High	18,952.1	8,848.9	27,801.0

States not currently using an appropriate fraudulent document recognition (FDR) training program will need to develop a course for their employees. States have estimated the initial cost at $12.6 million.[88]   The reported cost drivers are "class fees, facility costs, instructor salaries, materials and coverage for front-line employees."

Employees in States that do not currently use AAMVA FDR training programs will need to complete their initial training. Based on AAMVA's first survey of 2006, State DMVs that reported not using AAMVA training also reported a total of nearly 3,200 current staff. (See Figure V–83.) Adding in new employees due to turnover in the baseline population, DHS estimates that approximately 12,000 baseline employees will need FDR training.

Figure V-83: Initial FDR training for baseline employees and baseline turnover[89]

Year	Baseline employees needing training	Turnover rate	Baseline turnover	Total
1	3,186	25%	796	3,982
2	-	25%	796	796
3	-	25%	796	796
4	-	25%	796	796
5	-	25%	796	796
6	-	25%	796	796
7	-	25%	796	796
8	-	25%	796	796
9	-	25%	796	796
10	-	25%	796	796
11	-	25%	796	796
Total	3,186		8,760	11,946

[88] NGA, NCSL and AAMVA. *The Real ID Act: National Impact Analysis*. Sep 2006, p18.
[89] Baseline employees based upon responses to AAMVA's first survey of 2006.

Additionally, all employees hired to meet the increased application processing resulting from REAL ID will need FDR training.   These employees must complete the initial training upon being hired. New hires due to turnover in this population must also complete the training. DHS estimated the turnover by first calculating what percent of the previous year's marginal employees must be retained to meet DMV workloads. DHS then calculated the difference between that number and the retention rate (1- turnover rate) and used that difference as the applied turnover rate. Approximately 7,250 new employees will need training. (See Figure V–84). Due to decreasing work loads and heightened levels of staff, in years six and seven, to meet demand in previous years they will hire fewer new employees and thus have fewer FDR training sessions to complete.)

Figure V-84: Initial FDR training for marginal increase employees

Year	Annual marginal employee head count	As percent of previous year	Employee turnover rate	Applied turnover + growth rate	Employee turnover, number	Marginal new-hires
1	-		25%	0%	-	-
2	4,460		25%	25%	1,115	5,575
3	3,593	81%	25%	6%	200	200
4	3,483	97%	25%	22%	764	764
5	3,083	89%	25%	14%	417	417
6	1,866	61%	25%	-14%	(270)	(270)
7	779	42%	25%	-33%	(259)	(259)
8	786	101%	25%	26%	204	204
9	794	101%	25%	26%	207	207
10	802	101%	25%	26%	209	209
11	810	101%	25%	26%	211	211
Total					2,797	7,257

Combining the baseline and increased workload employees results in an estimated 19,200 employees needing FDR training. (See Figure V–85.)

Figure V-85: Total employees needing initial FDR training

Year	Baseline employees	Increased workload employees	Total employees
1	3,982	-	3,982
2	796	5,575	6,371
3	796	200	996
4	796	764	1,561
5	796	417	1,213
6	796	(270)	526
7	796	(259)	537
8	796	204	1,001
9	796	207	1,003
10	796	209	1,005
11	796	211	1,007
Total	11,946	7,257	19,203

To estimate the total hours required for employees to complete initial FDR training, DHS multiplied the number of employees by 12 hours (the time to complete the training) and then multiplied the required hours by the fully loaded wage rate, resulting in a primary cost estimate of $5.9 million.[90, 91] (See Figure V–86.)   Adjusting the primary estimate by +/- 50 percent yields an estimate ranging from $2.8 to 8.4 million.

Figure V-86: Cost for employees to complete initial FDR training

Year	Employees to train	Average FDR training (hrs)	Training hours needed (thousands)	Wage rate	Total (thousands)
1	3,982	12	48	$ 24.92	$ 1,191
2	6,371	12	76	24.92	1,905
3	996	12	12	24.92	298
4	1,561	12	19	24.92	467
5	1,213	12	15	24.92	363
6	796	12	10	24.92	238
7	796	12	10	24.92	238
8	1,001	12	12	24.92	299
9	1,003	12	12	24.92	300
10	1,003	12	12	24.92	300
11	1,005	12	12	24.92	301
Primary	**19,727**		**237**		**$ 5,899**
Low					2,800
High					8,399

V.I.   Certification and compliance

The final rule requires that States complete a Material Compliance checklist prepared by DHS to demonstrate compliance with certain benchmarks established by DHS, as a condition for receiving a second extension in which time the State will work toward certifying full compliance to DHS, through completion of the Full Compliance Checklist prepared by DHS. Upon full compliance, States will recertify their compliance to DHS every three years on a rolling basis as determined by DHS. Combined, the certification and compliance efforts will cost from $20.6 to 61.7 million, with a primary estimate of $41.2 million, over eleven years. (See Figure V–87.)

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[90] Illinois DMV. Response to AAMVA's first survey of 2005.
[91] U.S. Bureau of Labor Statistics. Employer Cost for Employee Compensation. Available at <http://data.bls.gov/PDQ/outside.jsp?survey=cm>. Data series: Office and administrative support occupations, State and local government (CMU3010000220000D,CMU3010000220000P) for 2005Q4. Accessed Apr 11, 2006.

Figure V-87: Summary of certification related costs (thousands)

Year	State certification	Federal program office	Total
1	$ 1,106.4	$ 2,300	$ 3,406
2	1,475.2	2,300	3,775
3	1,475.2	2,300	3,775
4	1,475.2	2,300	3,775
5	1,475.2	2,300	3,775
6	1,475.2	2,300	3,775
7	1,475.2	2,300	3,775
8	1,475.2	2,300	3,775
9	1,475.2	2,300	3,775
10	1,475.2	2,300	3,775
11	1,475.2	2,300	3,775
Primary	$ 15,858	$ 25,300	$ 41,158
Low	7,929	12,650	20,579
High	23,787	37,950	61,737

V.I.1. State certification

The final rule requires State DMVs to complete Material Compliance Checklist and a Full Compliance Checklist. Upon submission of the Full Compliance Checklist, States will also submit their security plans for manufacturing and production facilities, security plans, confirmation from the State's Attorney General that the State has legal authority to implement necessary changes, and certification from the Governor of the State or the highest ranking Executive official with oversight responsibility over the DMV, that the State is in compliance. (The risk assessment and security plan costs are included in the Security section.) Once certified as compliant, the rule requires State DMVs to recertify compliance to DHS every three years on a rolling basis. The NGA, NCSL and AAMVA estimate that the initial certification package will cost States a total of $1.1 million and that the triennial certifications will cost an average of $295,000 per year.[92]   The final rule no longer contains a requirement for quarterly exceptions process reporting. DHS does not know how often States will submit updates to their original documents. For purposes of this analysis, and although unlikely, DHS is assuming that States will submit quarterly exceptions reports. The annual recurring cost estimate is therefore $1,475,000 per year (1 annual certification + 4 quarterly reports). Multiplying the recurring costs for nine years and adding the initial costs provides a primary estimate of $14.4 million. Adjusting the primary +/- 50 percent provides a range with a low of $7.2 million to $21.6 million over eleven years.

V.I.2. Federal program office

The Federal Government has established a group that is currently working to implement the REAL ID program. Upon the promulgation of this rule, DHS will maintain a program office. This office will be responsible for reviewing State certifications, acting as a liaison between DHS and the States, completing periodic State audits to ensure compliance, and informing

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[92] NGA, NCSL and AAMVA. *The Real ID Act: National Impact Analysis.* Sept 2006, p 21.

Federal agencies or others accepting identification for official purposes about which State-issued DL/IDs are acceptable.

DHS has estimated the cost to run a compliance and enforcement program office. These costs include contract labor, travel costs and other, miscellaneous costs. (Federal personnel compensation and benefits are not included 2.5M for REAL ID staff and office support for FY08 - 09 (Hub requirements development and design).

- 3.5M for FY 10 – 12 Hub development, testing and deployment
- 1.5M for FY 13 – 17 steady state

The numbers provided take into account:

- 8 FTEs,
- 4 Contract support personnel,
- Office support,
- Travel, and
- AAMVA contract dollars.

(See Figure V–88.) Adjusting the primary estimate by +/- 50 percent produces a range from $1.15 to 3.45 million per year. Extending these costs for eleven years produces a cost estimate ranging from $11.5 to 34.5 million, with a primary estimate of $23 million.

Figure V-88: Annual program office estimate

Primary		
Contractor support	$	2,000,000
Travel	$	200,000
Misc.	$	100,000
Total	**$**	**2,300,000**
Low		
Adjustment factor		-50%
(Primary)	$	2,300,000
Total	$	1,150,000
High		
Adjustment factor		50%
(Primary)	$	2,300,000
Total	$	3,450,000

VI. BENEFITS ANALYSIS

VI.A. *Overview*

The final REAL ID rule once implemented will strengthen the security of personal identification. Though difficult to quantify, nearly all people understand the benefits of secure and trusted identification and the economic, social, and personal costs of stolen or fictitious identities. The final REAL ID rule seeks to improve the security and trustworthiness of a key enabler of public and commercial life – State-issued drivers' licenses and identification cards. The primary benefit

of REAL ID is to improve the security and lessen the vulnerability of federal buildings, nuclear facilities, and aircraft to terrorist attack. The rule will give States, local governments, or private sector entities the option of requiring the use of REAL IDs for activities beyond the official purposes defined in this regulation. To the extent that States, local governments, and private sector entities make this choice, the rule may facilitate security in processes which depend on licenses (and cards) for identification, leading to ancillary benefits from the enhanced security procedures and characteristics put in place as a result of this final rule.

First, DHS provides a rough "break-even" analysis based on the discounted cost of a single terror attack comparable to the 9/11 attacks taking place sometime over the next eleven-year span.[93] This approach provides one way of demonstrating what the potential benefits to our economy may be. In summary, if the REAL ID requirements lowered by 1.45 percent per year the annual probability of a terrorist attack that caused immediate impacts of $63.9 billion (which is an estimate of the immediate impact incurred in the 9/11 attack on New York City according to the New York City Comptroller)[94], the quantified net benefits of the REAL ID regulation would be positive. If these requirements lowered by 0.25 percent per year the annual probability of a terrorist attack that caused both immediate and longer run impacts of $374.7 billion (which is an estimate of the immediate and longer run impacts incurred in the 9/11 attack and might be considered an upper bound estimate), the quantified net benefits of the REAL ID regulation would be positive.

We also looked at the impact if REAL ID were to prevent an incident that was half the magnitude in terms of the direct short term impact (i.e., 50 percent of 63.9 billion or $32 billion). If these requirements lowered by 2.9 percent per year, the annual probability of a terrorist attack, the quantified net benefits of the REAL ID regulation would be positive.

Second, DHS developed an analysis that is based on a recent Rand Corporation working paper.[95] The principal benefit of an air transportation security rulemaking such as REAL ID is derived from the reduction that REAL ID will provide to the nation's exposure to a terror attack involving commercial aviation. It is exceedingly difficult to quantify this exposure with certainty, since the nature of the damages from an attack depends on many factors and the few past examples of such attacks are imperfect proxies for what may occur in the future. In addition, it is difficult to estimate the likelihood with which a successful attack may occur over any given time period. In fact, this likelihood and the degree to which authorities are able to gauge it may change over time as geopolitical and other (contributing) circumstances change.

For the final rule on REAL ID, benefits will begin to be enjoyed when REAL IDs begin to be issued in 2008 but will only be enjoyed fully once the enrollment period, over the second five years is complete.

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[93] This type of analysis is recommended by OMB Circular A-4 when it is difficult to quantify and monetize the benefits of rulemaking.

[94] Thompson, William C. "One Year Later: The Fiscal Impact of 9/11 on New York City," Report of the Comptroller of the City of New York, September 4, 2002.

[95] LaTourrette, Tom and Henry H Willis, *Using Probabilistic Terrorism Risk Modeling for Regulatory Benefit-Cost Analysis: Application to the Western Hemisphere Travel Initiative Implemented in the Land Environment*, Rand Center for Terrorism Risk Management Policy, Working Paper WR-487-IEC, May 2007.

The final rule on REAL ID is likely to produce potential ancillary benefits as well. These benefits are numerous. The REAL ID final rule will make it more difficult to fraudulently obtain a legitimate license and more costly to create a false license. These other benefits include reducing identity theft, unqualified driving, and fraudulent activities facilitated by less secure drivers' licenses such as fraudulent access to government subsidies and welfare programs, illegal immigration, unlawful employment, unlawful access to firearms, voter fraud, and possibly underage drinking and smoking. DHS assumes that REAL ID will bring about changes on the margin that will potentially increase security and reduce illegal behavior. Because the size of the economic costs that REAL ID serves to reduce on the margin are so large, a relatively small impact of REAL ID may lead to significant benefits. The quantitative analysis of the primary benefit, and several ancillary benefits, of REAL ID are presented below. This analysis suggests that benefits taken together justify the rule's economic costs.

VI.B. Limitations:

The ability to achieve an acceptable level of national security is contingent upon implementing a layered system that integrates the capabilities of both government and commercial interests worldwide. Specifically, a layered approach to national air transport security means applying some measures of security to each of the following vulnerability points: transportation, staff, passengers, conveyances, access control, cargo, and baggage. For example, the Federal government has made expenditures, promulgated rules and implemented policies including the hiring of more Federal Air Marshals, the arming of pilots, and the hardening of cockpit doors to improve aviation security. DHS acknowledges that we cannot separately quantify the incremental benefits of each layer at this time. But in deciding whether to implement a new security layer, the United States must take into account both its effectiveness and the cost to improve aviation security in reducing terrorism risks Americans face. DHS has estimated the potential benefits of preventing a single terror attack comparable to the 9/11 attacks that could take place over the next 11 years however, we are silent on the potential benefits of preventing an attack on a nuclear power plant or on a Federal building. To the extent that this rulemaking reduces the likelihood of these kinds of attacks (nuclear facilities and Federal buildings), then DHS has not quantitatively or qualitatively estimated the potential benefits of preventing a terrorist attack on these types of facilities.

VI.C. Review of Public Comments

DHS received detailed comments on the methodology used in this discussion. Generally, commenters questioned whether it was appropriate for the REAL ID rule to claim to prevent another 9/11 attack or questioned that a second attack would be of the same economic magnitude. Commenters suggested alternate means of calculating benefits, including adjusting the quantified estimate to account for delaying, rather than preventing, another 9/11. One commenter proposed an estimate of baseline terrorism risk. While DHS appreciates these comments, the Department reiterates that the purpose of the analysis is to show the level of effectiveness the rule would have to achieve relative to a given baseline risk in order to break-even.

VI.D. Primary Benefit of REAL ID

VI.D.1. Break-Even Analysis

The primary benefit of REAL ID is to increase incrementally U.S. national security by reducing the vulnerability to criminal or terrorist activity of federal buildings, nuclear facilities, and aircraft. The chances of a terrorist attack on such targets being successful would generally increase if identity documents that grant access to them are in the possession of the attackers. This is demonstrated by the fact that several of the 9/11 hijackers had fraudulently obtained drivers' licenses in their possession at the time of that attack. Even when possession of such identity documents is not an absolute requirement for carrying out an attack, terrorist planners appear to see value in having identity documents available in order to minimize risk and maximize flexibility in adjusting to circumstances. Denying access to valid identity documents would, on the margin, raise the cost and risk of conducting a terrorist operation.

The U.S. faces the possibility that a terrorist group will be able to carry out a successful attack on the U.S. homeland. This possibility can be quantified as the annual likelihood, or probability, that a successful attack is carried out. DHS and other government agencies at the federal, State and local levels have taken many measures in recent years to reduce this probability, and the fact that a successful attack has not been carried out since 9/11 suggests that these measures may have had a significant impact on the terrorist threat that the homeland faces. Each measure that DHS and other agencies have undertaken has contributed to some degree to enhancing security. REAL ID is another measure that is intended to reduce risk on the margin. No single measure can entirely eliminate the risk of a successful terrorist attack, but if properly designed and implemented, all measures can collectively reduce the risk to a very low level. The quantitative analysis that is presented here suggests the degree to which REAL ID must contribute to the reduction in the risk of a successful attack in order to justify its cost.

Methodology 1

The annual risk that the U.S. faces with regard to a potential terrorist attack can be represented as the chance that an attack will successfully take place, multiplied by the consequences of that attack. This can be mathematically represented as $\Pi * K$, where Π is the annual chance of a successful attack and K is the consequences of an attack in monetary terms.

Homeland security measures such as REAL ID impact either the chance or consequences of a successful attack, or both. REAL ID is highly unlikely to impact the consequences of a successful attack, but it may impact, on the margin, the chance of a terrorist attack being attempted and succeeding. Let Π_B be this chance prior to the introduction of REAL ID, and Π_A be the chance after REAL ID comes into effect. Then the security impact of REAL ID in the course of one year can be measured in dollar terms as $(\Pi_B - \Pi_A) * K$.

This analysis introduces several sources of uncertainty. Although the consequences of various types of terrorist attack can be measured and estimated, the characteristics of past attacks may not be reflective of future attacks. In addition, evaluating the probability that attacks of any type will be attempted and will succeed is very difficult. Rather than try to measure the absolute probability ΠB and determine how REAL ID might affect it, we follow a slightly different approach. Let the cost of the REAL ID regulation, which has been estimated, be C. Then for REAL ID to be fully justified on national security grounds alone, it must be the case that its benefit is at least as great as its costs. The annual risk-reduction benefit of REAL ID is (ΠB – ΠA)*K, and the sum of this benefit over eleven years must equal REAL ID's cost, C. If we can determine a dollar value for K, then we can measure the marginal impact that REAL ID must bring about on the probability of a successful terrorist attack on a federal target for it to be fully justified by its security benefit.

The economic consequences of the 9/11 attack are used as a benchmark for evaluating this breakeven probability change. REAL ID is being adopted on the basis of the findings of the 9/11 Commission report, and helping to prevent another catastrophic attack like 9/11 is the primary goal of REAL ID. 9/11 caused roughly 3,000 deaths and many injuries, large-scale destruction of property, and a range of impacts on economic activity such as depressing business in New York City and reducing the amount of air travel. It also may have caused a range of longer-run indirect business impacts such as higher operating costs, higher inventory levels, higher risk premiums, and economic impacts associated with shifting resources to the military. We do not attempt to quantify these latter impacts. Figure VI–1 below gives estimates of the values of various economic impacts of the 9/11 attack. Some care has been taken to ensure that estimates reflect a depression in overall activity rather than a shift from one geographic location or type of activity to another.

The resulting estimate of $374.7 billion for both immediate and longer-run impacts is dominated by the impact that 9/11 is estimated to have had on the airline sector, which was developed by comparing the actual level of passenger flights on U.S. carriers to its pre-9/11 trend.

Figure VI-1: Estimates of the Values of Various Economic Impacts of a 9/11 Attack

Economic Impacts of 9/11	First Year		Second Year		
	Low	High	Low	High	Average
	(billion 2002/03 USD)				
Immediate impacts	*$55.8*	*$72.0*			*$63.9*
Physical capital destruction[96]	$21.8	$21.8			
Casualties:					
Number of lives	3,000	3,000			
Value of life lost:					
SVL of $3m (low) or $5.8m (high)	$9.0	$17.4			
7-day shutdown of airline system[97]	$13.5	$21.3			
Lost New York City gross city product in 3 months after 9/11[98]	$11.5	$11.5			
Longer-run economic impacts	*$153.1*	*$233.6*	*$98.0*	*$154.6*	*310.8*
Airline sector impacts[99]	$137.3	$217.8	$98.0	$154.6	
Lost New York gross city product[100]	$15.8	$15.8	NA	NA	
TOTAL (With second-year impacts discounted at rate of 7%)	*$300.0*	*$449.4*			*$374.7*

We assume that terrorist groups are seeking to inflict another attack with consequences on the order of magnitude of 9/11. We also assume that they are engaged in a campaign such that in every year during the period over which the costs and benefits of REAL ID are being evaluated, there is a positive and identical probability of being successfully attacked. Under this assumption, the expected present value of the consequences of the terrorist campaign against the U.S. homeland equals the sum of the expected values of consequences in each particular year over an eleven-year period:

$$\Pi_{yr1}*K_{yr1} + \{1/(1+\delta)\}*\Pi_{yr2}K_{yr2}+ \{1/(1+\delta)^2\}*\Pi\ yr3*K_{yr3} + \ldots. + \{1/(1+\delta)^9\}*\Pi_{yr11}*K_{yr11} ,$$

or over the last five-year period

$$\{1/(1+\delta)^5\}*\Pi\ _{yr7}*K_{yr7} + \{1/(1+\delta)^7\}*\Pi_{yr8}*K_{yr8} + \ldots. + \{1/(1+\delta)^{10}\}*\Pi_{yr11}*K\ _{yr11} ,$$

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[96] Thompson, Jr., William. Comptroller City of New York, "One Year Later, the Financial Impact of 9/11 on New York City," September 4, 2002. <http://www.comptroller.nyc.gov/bureaus/bud/reports/impact-9-11-year-later.pdf>.
[97] Gordon, P. "Draft - The Economic Impacts of a Terrorist Attack on U.S. Commercial Aviation System," Under FEMA Grant N00014-050630, October 1, 2005. http://www.usc.edu/dept/create/assets/001/50796.pdf. The range depends upon the choice of multipliers used. For example Balvanyos and Lave's estimate of $2 billion per day, which is used in this calculation is based upon changes in consumer surplus.
[98] Thompson, Jr., William.
[99] Gordon, P.
[100] Thompson, Jr., William.

where δ is the discount rate and K is the monetary value of consequences in real 2006 dollars. Because we assume that Π and K do not change from year to year, this can be re-written as:

$$\Pi*K + \{1/(1+\delta)\}* \Pi*K + \{1/(1+\delta)^2\}* \Pi*K + \ldots + \{1/(1+\delta)^{10}\}* \Pi*K$$

or

$$\{1/(1+\delta)^5\}*\Pi*K + \{1/(1+\delta)^6\}*\Pi*K + \ldots + \{1/(1+\delta)^{10}\}*\Pi*K .$$

A more compact way to express this formula is as

$$D*\Pi*K ,$$

where D equals either $\{1 + 1/(1+\delta) + 1/(1+\delta)^2 + \ldots + 1/(1+\delta)^9\}$ or $\{1/(1+\delta)^5 + 1/(1+\delta)^6 + \ldots + 1/(1+\delta)^{10}\}$ depending on whether an 11- or 5-year period is being considered respectively. This expression is the sum of the expected discounted annual consequences of a terrorist campaign against the U.S. homeland over a five- or eleven-year period. As noted earlier, the final REAL ID rule is anticipated to bring about a reduction in the annual probability of a successful attack from $\Pi_B - \Pi_A$, and the security benefit of REAL ID over the five- or eleven-year period is therefore $D*(\Pi_B - \Pi_A)*K$. For the benefits of the final REAL ID rule to equal the costs of the rule, it must be the case that

$$D*(\Pi_B - \Pi_A)*K = C ,$$

or

$$\Pi_B - \Pi_A = C/(D*K) .$$

Assuming that costs and benefits are discounted at 7 percent, a cost of REAL ID of $6.9 billion (which is the discounted cost of the final rule) at the 7 percent discount rate, and the high cost impact of $374.7 billion at the 7 percent discount rate, the value of C/D*K, in 2006 dollars, is 0.25 percent. For REAL ID to be fully justified by its primary security benefit, it must bring about a marginal reduction in the annual chance of a successful 9/11-type attack of 0.25 percent.[101]

Looking at only immediate impacts, and assuming that costs and benefits are discounted at 7 percent, a cost of REAL ID of $6.9 billion, and the intermediate attack consequences cost impact of $63.9 billion at the 7 percent discount rate, the value of C/(D*K) is 1.45 percent. For REAL ID to be fully justified by its primary security benefit in immediate impacts alone, it must bring about a marginal reduction in the annual chance of a successful 9/11-type attack of 1.45 percent.

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[101] For example, if the absolute probability of an attack in any given year is 10%, then the absolute probability of an attack $374.7 billion in any given year after this rule is put into place must drop to 9.75% in order for the final rule to be justified. If the absolute probability of an attack in any given year is 1 percent, then the absolute probability of an attack in any given year after this rule is put into place must drop to 0.75% in order for the rule to be justified. An advantage of this approach is that no absolute probability of an attack in any given year need be assumed, as long as the probability of attack in that year is higher than the reduction in probability needed to justify the rule.

Without further information on the absolute level of ΠB, it is difficult to say whether 0.25 percent or 1.45 percent is a very large reduction in the chance of successful attack, or a more moderate reduction.

If we consider an impact of $32 billion to represent the direct short-term cost of a less successful attack than what happened in New York City, and if the requirements lowered by 2.9 percent the annual probability of a terrorist attack of that magnitude, the quantified net benefits of the REAL ID regulation would be positive.

Methodology 2

This second methodology is also aimed at framing the relationships between the effects of the rulemaking (in increasing domestic security and reducing the risk of terror attack), the cost of implementing the rule, and the baseline risks of domestic terror attacks which would be improved by the rulemaking. Given the complex and unavoidably uncertain and evolving nature of these relationships, it is difficult to quantify any of them with precision or confidence. This is especially true of the rulemaking's impact on the risk of successful terror attacks and the underlying baseline likelihood of such attack. In this setting, the break-even analysis provides a framework for exploring the relationships between possible values for these uncertain quantities, impacts and consequences.

For this break-even analysis of the REAL ID rulemaking, a methodology reported in a recent Rand Corporation working paper[102] is adapted to more clearly depict the relationships between the REAL ID benefit and cost factors. The goal of the analysis is to organize the available information on these benefits and cost factors in a way that will aid decision makers in their assessment of the rule.

Stated simply, a rulemaking such as REAL ID is cost beneficial if the expected benefit from implementing the rule – a benefit largely comprised of a reduction in the risk of a terror attack on US citizens, assets or interests due to REAL ID – exceeds the expected costs of implementing the rule. As discussed and demonstrated elsewhere in this regulatory evaluation, these expected costs have many components, including costs to States, monetary and time costs to individuals, and costs to the federal government.

The principal benefit of an air transportation security rulemaking such as REAL ID is derived from the reduction that REAL ID would provide to the nation's exposure to a terror attack involving commercial aviation. It is exceedingly difficult to quantify this exposure with certainty, since the nature of the damages from an attack depend on many factors and the few past examples of such attacks are imperfect proxies for what may occur in the future. In addition, it is difficult to estimate the likelihood with which a successful attack may occur over

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[102] LaTourrette, Tom and Henry H Willis, *Using Probabilistic Terrorism Risk Modeling for Regulatory Benefit-Cost Analysis: Application to the Western Hemisphere Travel Initiative Implemented in the Land Environment,* Rand Center for Terrorism Risk Management Policy, Working Paper WR-487-IEC, May 2007.

any given time period. In fact, this likelihood and the degree to which authorities are able to gauge it may change over time as geopolitical and other contributing circumstances change.

Because of this inherent uncertainty about the extent of costly harm to the nation that a successful aviation-related terror attack may lead to, the breakeven analysis presented here for the REAL ID rulemaking starts with a range for possible damages defined by two estimates based on the costs of the 9/11 attacks on New York City. First, based on the estimate of physical capital loss by the New York City Comptroller, the loss of 3,000 lives, the costs of a seven day shutdown of the US commercial aviation system and the short term (3 month) damage to New York City gross city product, sums to $63.9 billion. A second estimate is set at half that amount, or $32 billion, to represent a lower bound on the costs that would result in the event of a costly but less successful attack than tragically occurred in New York City.

This range for potential costs to the nation due to a successful aviation-related terror attack becomes a range for potential benefits to the nation when the effects of security rulemakings are understood as ways of reducing the risk or likelihood of the attack and its consequent impact of ever occurring. For this breakeven analysis, we use a single attack involving commercial aviation over the next eleven years as the scenario for developing terrorism cost estimates. For discounting purposes, it is necessary to know how many years the cost of such an attack should be discounted. Since the exact timing of a successful attack would be uncertain, and might involve any individual domestic flight over the next eleven years, a weighting procedure based on the total number of domestic commercial passenger flights forecast by the FAA for the next eleven years is used to create a weighted discounted expected loss due to a terror attack. This weighting and discounting procedure is presented in Figure VI-2. As the table indicates, the undiscounted range considered for weighted cost impacts for the nation due to a successful terror attack range from $32 billion to $63.9 billion. At the 3 percent discount rate, the weighted cost impacts range from $27.4 billion to $54.8 billion and at the 7 percent discount rate the range is $22.8 billion to $45.6 billion. For this specification, there can be two sources of uncertainty: the likelihood with which a successful terror attack takes place, and the timing of its occurrence. The discounted and undiscounted costs that are reported represent a range of "certainty equivalent" expected costs (with respect to the likelihood of an attack occurring at some point) for an event that involves one of the many domestic flights that will be undertaken over the 11 year time span.

Note that these values represent the discounted cost of a single terror attack comparable to the 9/11 attacks on New York City taking place sometime over the 11 year span. If there is believed to be a probability but not a certainty that such an attack occurs, then an expected discounted cost can be derived by adjusting the "certainty equivalent" discounted cost using the probability or likelihood attributed to the attack. In the breakeven charts that follow, the horizontal axis represents this probability or likelihood of an attack, which can range from zero to 100 percent, representing certainty that an attack will occur over the time period of interest.

Figure VI-2: Distribution by Annual Domestic Commercial Passenger Flights of Successful Terror Attack

Operations Data (FAA Aerospace Forecast 2007)			Weighting and Discounting for Higher Impact $63.9 Billion					Weighting and Discounting for Lower Impact $32 Billion				
Year	Annual Domestic Commercial Aircraft Operations (,000s)	Proportion of Total Domestic Commercial Aircraft Operations	Annual Undiscounted Proportional Share of Impact	3% Discount Factor	Discounted Annual Proportional Share of Impact	7% Discount Factor	Discounted Annual Proportional Share of Impact	Annual Undiscounted Proportional Share of Impact	3% Discount Factor	Discounted Annual Proportional Share of Impact	7% Discount Factor	Discounted Annual Proportional Share of Impact
2008	14,090	0.077	$4,941.8	1.000	$4,941.8	1.000	$4,941.8	$2,470.9	1.000	$2,470.9	1.000	$2,470.9
2009	14,497	0.080	$5,084.6	0.971	$4,936.5	0.935	$4,752.0	$2,542.3	0.971	$2,468.3	0.935	$2,376.0
2010	14,938	0.082	$5,239.1	0.943	$4,938.3	0.873	$4,576.0	$2,619.5	0.943	$2,469.2	0.873	$2,288.0
2011	15,414	0.085	$5,406.1	0.915	$4,947.4	0.816	$4,413.0	$2,703.1	0.915	$2,473.7	0.816	$2,206.5
2012	15,912	0.087	$5,580.8	0.888	$4,958.5	0.763	$4,257.6	$2,790.4	0.888	$2,479.2	0.763	$2,128.8
2013	16,443	0.090	$5,767.0	0.863	$4,974.7	0.713	$4,111.8	$2,883.5	0.863	$2,487.3	0.713	$2,055.9
2014	16,992	0.093	$5,959.5	0.837	$4,991.0	0.666	$3,971.1	$2,979.8	0.837	$2,495.5	0.666	$1,985.5
2015	17,560	0.096	$6,158.8	0.813	$5,007.6	0.623	$3,835.4	$3,079.4	0.813	$2,503.8	0.623	$1,917.7
2016	18,160	0.100	$6,369.2	0.789	$5,027.9	0.582	$3,707.0	$3,184.6	0.789	$2,514.0	0.582	$1,853.5
2017	18,770	0.103	$6,583.1	0.766	$5,045.4	0.544	$3,580.8	$3,291.6	0.766	$2,522.7	0.544	$1,790.4
2018	19,417	0.107	$6,810.0	0.744	$5,067.3	0.508	$3,461.9	$3,405.0	0.744	$2,533.6	0.508	$1,730.9
Total	**182,192**	**1**	**$63,900.0**		**$54,836.4**		**$45,608.1**	**$31,950.0**		**$27,418.2**		**$22,804.1**

Once the ranges of weighted discounted values for a single successful attack over the eleven-year period are calculated, the expected impact on the nation of an attack can be clarified. For any given discount rate, the expected impact value is the discounted weighted value multiplied by the likelihood with which a successful attack might occur. The lower the likelihood of a successful attack, the lower the expected impact over the eleven year period. Figure VI-3 illustrates this expected value relationship between the likelihood of an attack over the eleven-year period (horizontal axis) and the expected weighted consequence or value of a successful attack, for both the undiscounted high and low values.

Figure VI-3: Likelihood of a Successful Attack over the Next Eleven Years and Corresponding Expected Impact to the Nation from this Risk

Expected Economic Impact of Successful Attack
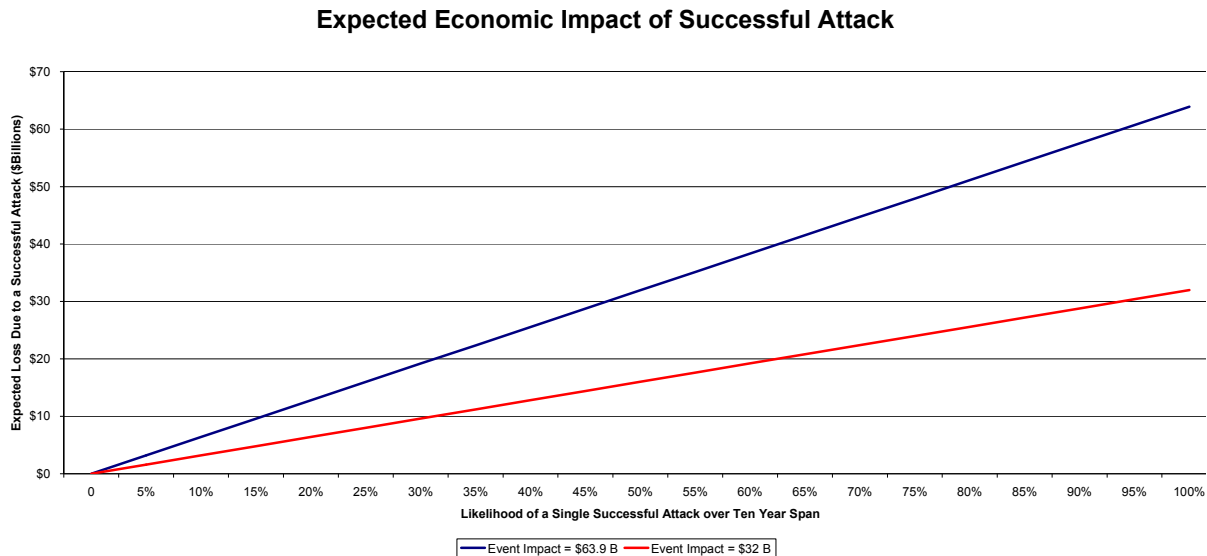
Eleven year discounted and undiscounted costs of REAL ID, which are to be compared to the expected impact value, are taken from the analysis and calculations reported in Section V of this Regulatory Evaluation. These values are $9.9 billion in the undiscounted case, $8.4 billion at a 3 percent discount rate, and $6.9 billion at a 7 percent discount rate.

It is possible to construct breakeven curves using either of two possible variables along the horizontal axis – the likelihood of a successful attack over the eleven year period and the expected value of the impact of an attack over the eleven years. In this analysis the former – likelihood of a successful attack over the eleven year period is used. This is a value that may change with circumstances and sociopolitical factors and about which expert opinions may differ. The figures below depict break-even frontiers for each of the values for the cost to the nation of a successful terror attack on the scale of the 9/11 attacks, with the benefits and costs undiscounted or discounted at 3 percent or 7 percent rates. Visual inspection indicates that the discounting rates make little difference in the breakeven curves, but each of the three discounting examples is shown. Parameters governing the break-even figures are as follows:

- Along the x or horizontal axis are values for the *baseline likelihood that a successful terror attack occurs within the eleven year period* – one whose success could be prevented or disrupted by REAL ID. Values for this likelihood range from 0 percent (impossibility) to 100 percent (certainty that an attack would occur sometime within the eleven year period). For any given estimate of the national loss due to a terror attack, the lower the likelihood *l* of an attack, the lower the *expected* national loss due to a terror attack would be. For example, using the analysis that we just developed, the value of 100 percent assumes that over the next eleven years, the potential exists for one successful 9/11 type of attack.
- Along the y or vertical axis are values for the *proportion of the baseline likelihood l that is eliminated by the implementation of the REAL ID identification card rule.* For example, if the baseline risk of an attack *l* is 10 percent, and the proportion of that baseline risk that is eliminated by REAL ID is 50 percent, then with REAL ID in place, the remaining likelihood of a terror attack is 5 percent. To put it another way, the breakeven curve using the undiscounted direct impact of $64 billion shows that if the potential reduction in the baseline is about 16 percent ($64 billion * .1564 = $10 billion), then the undiscounted costs equate to the undiscounted benefits.
- The position of the curve is determined by the consequence or value of a successful attack that could be avoided with successful implementation of the final REAL ID rule. Increases in that value (such as the increase from the lower bound of $32 billion to the upper bound of $63.9 billion) shift the breakeven frontier or curve to the southwest, since for any given likelihood of terror attack (along the horizontal axis), a smaller proportional reduction in that likelihood is necessary for justifying the reported cost of the REAL ID rule.

Whether REAL ID is cost beneficial or not in this example depends on the reduction in the expected loss that would result by implementing REAL ID, and on the costs involved with implementing REAL ID. For any given values for national loss associated with a successful terror attack and implementation cost for REAL ID, the *break-even cost curves* define which values for the baseline likelihood of terror attack and the proportion by which that likelihood is reduced by the implementation of REAL ID, result in the cost of implementing REAL ID being

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precisely offset by the reduction in expected loss caused by REAL ID. In other words, when the proportionate risk reduction is to the northeast of the *break-even cost curves*, then the rule is cost-beneficial. When the proportionate risk reduction is precisely on the curves, then the expected costs equal the expected benefits. Those points in the plane that are to the southwest are not cost-beneficial.

Figure VI-4: REAL ID Breakeven Risk Reduction Frontier, Undiscounted Rule Cost and Rule Benefit (Risk Reduction) Values – Undiscounted Cost = $9.9 Billion
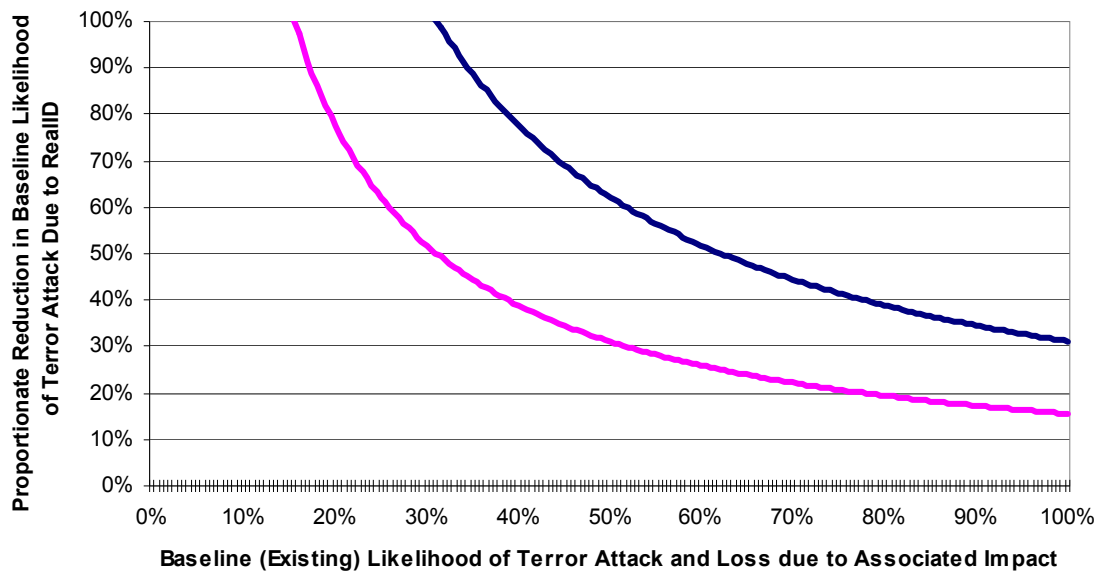
Legend:
— B/E Frontier - Upper Bound for Undiscounted Event Impact ($64B)
— B/E Frontier - Lower Bound for Undiscounted Event Impact ($32 B)

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Figure VI-5: REAL ID Breakeven Risk Reduction Frontier, Rule Cost and Rule Benefit (Risk Reduction) Values Discounted at 3% -- Discounted Cost = $8.4 Billion

x-axis: Baseline (Existing) Likelihood of Terror Attack and Loss due to Associated Impact

y-axis: Proportionate Reduction in Baseline Likelihood of Terror Attack Due to RealID
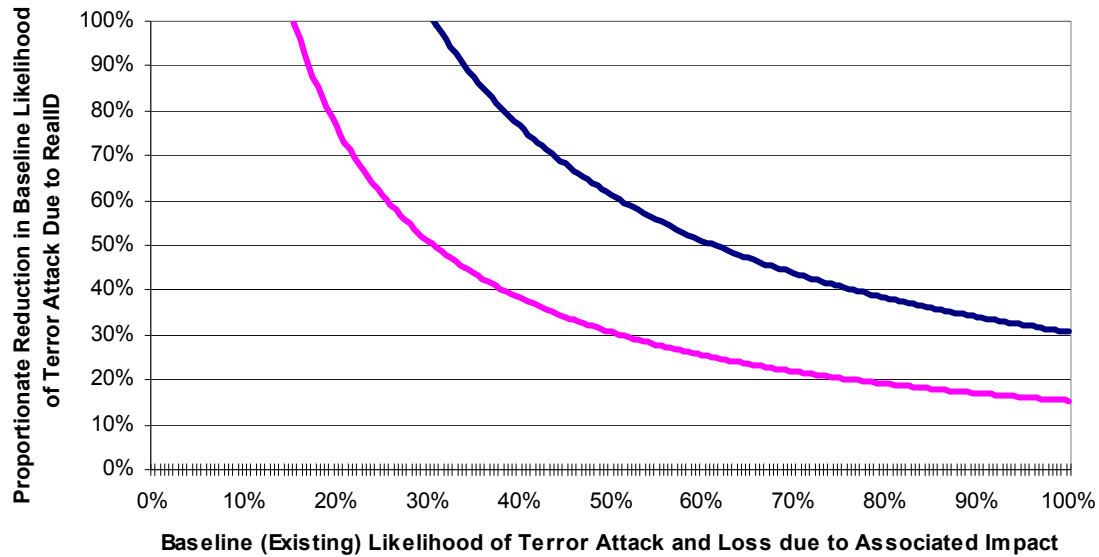
— B/E Frontier - Upper Bound on Discounted (3%) Event Impact ($54.8 B)
— B/E Frontier - Lower Bound on Discounted (3%) Event Impact ($27.4 B)

Figure VI-6 REAL ID Breakeven Risk Reduction Frontier, Rule Cost and Rule Benefit (Risk Reduction) Values Discounted at 7% -- Discounted Cost = $6.9 Billion

x-axis: Baseline (Existing) Likelihood of Terror Attack and Loss due to Associated Impact

y-axis: Proportionate Reduction Due in Baseline Likelihood of Terror Attack Due to RealID
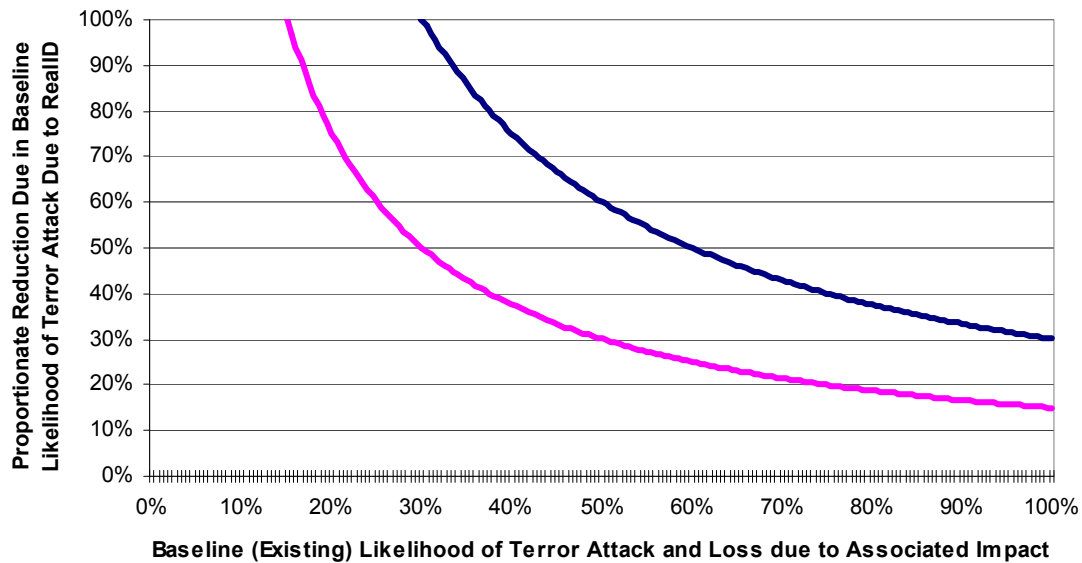
— B/E Frontier - Upper Bound on Discounted (7%) Event Impact ($45.6 B)
— B/E Frontier - Lower Bound on Discounted (7%) Event Impact ($22.8 B)

The location of the curves within the plane is defined by the likelihood values, the proportion by which REAL ID reduces this likelihood, and the cost of REAL ID is determined by the baseline cost to the nation – in terms of lives lost, assets destroyed and economic activity lost or disrupted – of a terror attack. Thankfully, such attacks have been very infrequent, but this infrequency, along with the enormous variety of ways in which terror attacks may be realized, makes it very difficult to estimate the likely cost of such an attack.

As noted above, the historical example of the damage to the nation of the attack on the World Trade Center on September 11, 2001, is available as a starting point for such an analysis. Two estimates for the cost of this attack are used to bound a range of possible impacts of a successful future terror attack. While these estimates are based on actual consequences and measured effects of the 9/11 events, it is not plausible to regard them as representative of average or expected future consequences and effects, for several reasons:

- The value, material and symbolic, of the World Trade Center was unique. Future attacks may not have as large or symbolic a target as this one, and therefore the costs associated with such attacks would be lower.
- In the wake of that first attack, it is reasonable to believe that Americans, affected industries and the government have become more resilient and more able to respond effectively in the wake of a possible future attack. For this reason, the impacts of a possible future successful attack would be smaller, relative to that first attack.

It is possible that the scale of losses resulting from a future terror attack (that might be forestalled or made less likely by the REAL ID program) would not be as sizeable as that associated with the historical 9/11 World Trade Center attack. At this time, it is not feasible to reliably estimate what this reduced value might be. Hence, it is reasonable to regard a range extending below an upper bound of $63.9 billion as representing a plausible set of values within which the loss or impact that would be caused by a successful future attack would lie (IF such an attack occurred). For that reason, DHS, as discussed earlier, postulated a value of approximately $32 billion as a lower bound on the range of certainty equivalent consequences of a terror attack.

VI.D.2. Other Direct Impacts to Be Considered

Consumer Surplus Losses

The following analysis on consumer surplus examines the impact of a terrorist incident only on the aviation sector. It does not consider the impact on any other sector. DHS acknowledges that a complete and balanced analysis should look at the gains and losses associated with each industry segment (including substitution effects and time shifting of demand). But one cannot ignore the fact that this rulemaking will have a direct impact upon the airline industry. With these important caveats in mind, the following analysis presents an economic impact on the aviation industry.

The first methodology presented above makes attempts at determining the short and long term impact (See Figure VI–1, airline sector impacts) associated with an event like 9/11. The second

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methodology looks at the costs of a seven-day shutdown of the US commercial aviation system and the short term (3 month) damage to New York City's gross city product (sums to $63.9 billion). However, the second methodology makes no attempt to account for the loss in consumer surplus to commercial aviation. These differences discussed in the research below look at the disruptions of economic activity in the wake of the 9/11 attack. Unfortunately, reliable estimates of overall welfare losses—both producer and consumer surplus—in the U.S. economy due to these disruptions are not available; however, it is possible to approximate consumer losses related to commercial aviation, which was one of the hardest hit sectors in the U.S.

To estimate consumer surplus losses evidence from two studies is cited. The first is an analysis of the economic implications of a terrorist attack on commercial aviation in the United States by Balvanyos and Lave.[103] They estimate that consumer surplus from commercial air travel in 2003 is $1.9 billion per day. In the other study, Ito and Lee[104] (2005) use monthly time series data to estimate the short and long term effects of 9/11 on demand for commercial air travel. They conclude that in the first month after the attack, there was a transitory 31 percent decline in demand attributable to the attack, and for the following years, there was a more persistent decline of 7.4 percent.[105] Assuming that declines in consumer surplus are proportionate to these declines in demand, then consumer surplus losses in the first month following a 9/11 attack are $19.4 billion (in 2006 dollars), and the longer term losses over the following two years are $104.2 billion.[106]

By combining the direct impact losses of $63.9 billion (see above) and the consumer surplus losses of ($13.6 + $51.6 + $52.5 = 117.7 billion) $117.7 billion the economic impact is approximately $181.6 billion. The lower bound estimate is $90.9 billion.

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[103] Balvanos, Tunde and Lester B. Lave, *The Economic Implications of Terrorist Attack on Commercial Aviation in the USA*. CREATE Homeland Security Center. Under FEMA Grant N00014-05-0630. September 4, 2005.
[104] Ito, Harumi and Darin Lee. "Assessing the Impact of the September 11 Terrorist Attacks on U.S. Airline Demand," *Journal of Economics and Business* 57 (2005): 75-95.
[105] Ito and Lee reported that as of November 2003, the ongoing demand shock had yet to dissipitate.
[106] (A) 1st month decline in CS = (daily CS)*(percent decline in CS)* (cpi adjustment 2003-2006)*(days in month)
    =1900 * 0.31 * 1.096 * 30 = $19.4 billion (in 2006 $) for thirty days or for three weeks = 1900 * 0.31 *1.096 * 21 = $13.6 billion.

(B) Remainder of first year decline in CS = (daily CS)*(percent decline in CS)*(cpi adjustment 2003-2006)*(days in 11 months)
    = 1900 * 0.074 * 1.096 * 335 = $51.6 billion

(C) PV of 2nd year decline = (daily CS)*(percent decline in CS)*(cpi adjustment 2003-2006)*(days in 12 months)*(1 year 7% discount factor)
    = (1900 * 0.074 * 1.096 * 365)/1.07 = $52.5 billion

First month 31% decline is (A), and the longer term 7.4 % decline is (B) + (C) = $104.2 billion

It can be correctly argued that after 9/11 air carriers attracted passengers by reducing air fares so that individuals could fly at a lower cost than they could have before. Because the cost of flying had fallen, there would be a decline in producer surplus when this occurs, air carriers would need to decide when not to fly because of the lower air fares. This decline in producer surplus has not been addressed in this analysis.

Driving Fatalities as a Direct Result of 9/11

In addition, to the annual risk that the U.S. faces with regard to a potential terrorist attack on the air system (which this final rule will help to reduce), there is a risk from the impact of a terrorist incident like 9/11 on driving fatalities. DHS reviewed two studies on this issue as they relate to 9/11- the first by Blalock et al and the second by the University of Michigan Transportation Research Institute.

Blalock et al[107], using data on 1994 to 2003 driving fatalities attempt to isolate the pure 9/11 effect over and above other possible causes of driving deaths. They test the hypothesis that commercial driving fatalities respond to economic, road, and weather conditions but are uninfluenced by the fear and security inconvenience stemming from 9/11. Their results are summarized by three points. First, that the terrorist attacks on September 11, 2001 caused an increase in non-commercial driving fatalities; second that there was no noticeable increase in commercial driving fatalities following September 2001; and substitution of road travel for air travel was the primary mechanism for explaining the increase in non-commercial driving fatalities. From a quantitative perspective, their findings reveal an additional 242 (242 * 3 = 726) driving fatalities per month or 726 additional fatalities for the period from October 2001 to December 2001.[108] Their further analysis suggests that the 9/11 effect weakened during 2002 and that a total of about 1,200 lives lost can be solely attributed solely to the reaction to 9/11.

A second study by Michael Sivak and Michael Flannagan of the University of Michigan Transportation Research Institute[109] reports that in the three months following the attacks, there were 1,018 more traffic fatalities than projected based on trends for earlier months in 2000 and 2001 – 9 percent more deaths than expected. Furthermore, the largest increase occurred on local roads, not interstate highways that would be the main alternative to flying. Local roads, both urban and rural, accounted for 45 percent of the increase in traffic deaths.

The authors stated: "This suggests that a substantial proportion of the people who decided not to drive to the destination that they originally intended, but instead increased local, short-trip driving."

The two studies support the fact that for three months after 9/11 non-commercial fatalities increased between 726 and 1,018. The Blalock study suggests that they can account for as many as 1,200 lives lost solely attributed to the reaction to 9/11. If we value a human life at between $3.0 million and $5.8 million and assume that 726 lives lost were attributable to 9/11 then the benefits of reducing a terrorist incident of this size due to reduced highway fatalities is about $2.178 billion. Alternatively, if we assume the high end of the estimates (i.e., 1,018 fatalities and $5.8 million per fatality) then the benefits of reduced highway fatalities is about $5.9 billion.

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[107] Blalock, Garrick, Vrinda Kadiyali, and Daniel H. Simon Department of Applied Economics and Management and Johnson Graduate School of Management, Cornell University" The Impact of 9/11 on Driving Fatalities: The Other Lives Lost to Terrorism." Cornell University. February 25, 2005.

[108] Given the unusual circumstances of September 2001, the authors choose to exclude this month from the sample.

[109] As reported by The University of Michigan: The University Record Online for faculty and staff of the University of Michigan. "Roadway Deaths Up after 9/11 Due Largely to Local Driving. http://www.ur.umich.edu/0405/Nov22_04/09.shtml.

Taking the midpoint of both estimates, we assume that the benefits would be $3.8 billion (872 fatalities * $4.4 billion per fatality). DHS believes that these estimates are low because they exclude driving-related injuries and property damage.

VI.E. Ancillary Benefits of REAL ID: Overview

The potential ancillary benefits of REAL ID are numerous, as it will be more difficult to obtain fraudulently a legitimate license and will be substantially more costly to create a false license. These other benefits include reducing identity theft, unqualified driving, and fraudulent activities facilitated by less secure drivers' licenses such as fraudulent access to government subsidies and welfare programs, illegal immigration, unlawful employment, unlawful access to firearms, voter fraud, and possibly underage drinking and smoking. DHS assumes that REAL ID will bring about changes on the margin that will potentially increase security and reduce illegal behavior. Because the size of the economic costs that REAL ID serves to reduce on the margin are so large, however, a relatively small impact of REAL ID may lead to significant benefits.

VI.E.1. Identity Theft

Financial crime using identity theft as a means is growing. This form of crime includes opening bank accounts, check cashing, and credit card purchases. A recent survey suggests that in 2006, roughly 8.9 million U.S. adults were victims of some form of identity theft.[110] It also estimates that the average monetary cost to victims of resolving the theft is $422 and that the average number of hours spent by the victim to resolve the theft equal to 40. Using the average hourly U.S. wage rate in January 2007 of $17 to value this time, the value of time spent on resolving identity theft by households was $6.1 billion in 2006 and total resources in monetary terms spent by victims on resolving identity theft was $9.8 billion.[111] We use this as a measure of the total resource cost to households of resolving and defending against identity theft in 2006. This estimate is conservative, as it does not include a monetized measure of the stress and emotional suffering of victims, which is believed to be significant.[112] The cost of identity theft to private businesses is not valued here but is also presumably significant. Assuming a 3 percent inflation rate and 1 percent real growth rate in identity theft resolution/prevention resource costs and a 7 percent discount rate, the discounted value of these costs over eleven years is roughly $65.5 billion, and $20.3 billion over the second five-year period. (We assume that REAL ID benefits with respect to identity theft will begin to be enjoyed immediately to a certain extent but will

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[110] *2006 Identity Fraud Survey Report*, Council of Better Business Bureaus and Javelin Strategy & Research. Accessed 26 Feb 07 <http://www.bbbonline.org/IDTheft/safetyQuiz.asp>

[111] U.S. citizens also spend resources to prevent identity theft. No estimate is available on the total amount spent on prevention measures. Three firms provide the public most account monitoring services designed to detect identity theft: Equifax, Experian, and TransUnion. Equifax is a public corporation and reported revenues of $114 million in 2005 on protection/monitoring products. (See form 10-K for EQUIFAX INC, March 2 2006. Accessed 26 Feb 07 http://biz.yahoo.com/e/060302/efx10-k.html) Assuming that the other two firms had similar sales on such products, households were apparently spending roughly $300 million on identity theft protection in 2005. This does not include the value of purchases of document shredders and shredding services

[112] It is important to note that this measure does not include the value of the fraud actually committed. This is a transfer from the victim(s) of the crime (household and/or business) to the perpetrator, and it is not clear that it should be incorporated into a welfare loss measure.

only be enjoyed fully once the enrollment period assumed to be over the second five years is complete).

The final REAL ID rule will only have the ability to impact those types of identity theft that require a drivers license for successful implementation, and only to the extent that the rulemaking leads to incidental and required use of REAL ID documents in everyday transactions, which is an impact that also depends critically on decisions made by State and local governments and the private sector. The main types of identity theft, and the percentage of incidents reported to the US government that each accounts for, are reported by the Federal Trade Commission.[113] Of the listed types of identity theft, the types that are likely to require the presentation of an identity document like a drivers license include bank fraud (existing and new accounts), employment related fraud, evasion of legal sanctions, medical fraud, insurance fraud, house/apartment rental fraud, and property rental fraud.[114] These types of identity theft accounted for 28 percent of all reported incidents in 2005. Applying this percentage to the resource cost to households of $20.3 billion -$65.5 billion yields a value of $5.7 billion -$18.3 billion. If the final REAL ID rule reduces the successful commission of drivers license-necessary identity theft types by 10 percent, a benefit of $0.6 billion could be enjoyed during the last five years. Even though we expect some benefits to accrue immediately after this rule has been promulgated, at this time we are not readily able to apportion an appropriate percentage. Therefore we have chosen to account only for benefits during the last five years of this rulemaking.

VI.E.2. Unqualified Driving and Traffic Accidents

One potential benefit of REAL ID will be to make it more difficult for unqualified drivers to obtain and use fraudulent drivers' licenses. A study of fatal automobile accidents in the U.S. between 1993 and 1997[115] revealed that, of the 184,700 fatal crashes that occurred over the five years, roughly 11 percent involved at least one driver with an invalid (suspended, revoked, expired, canceled, or denied) license. It is uncertain how many of those drivers (1) had fraudulent licenses and (2) would not have driven without the fraudulent ID; however, even a small decrease in unqualified drivers on the road as a result of REAL ID requirements could yield large benefits.

To quantify these potential benefits, we first estimated the expected future welfare losses associated with all traffic accidents in the U.S. over the eleven-year period 2008-2018. Data on traffic fatalities in the U.S. indicate that the fatality rate declined by an average of 1.2 percent per year from 1977 to 2006, ending with 14.3 fatalities per 100,000 residents (42,600 total fatalities) in 2006.[116] Assuming that this rate of decline would continue through 2018 and using Census

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[113] Federal Trade Commission, *Consumer Fraud and Identity Theft Complaint Data January-December 2005*. Accessed 26 Feb 07 < http://www.consumer.gov/sentinel/pubs/Top10Fraud2005.pdf>

[114] Several types of identity theft such as credit card fraud are entirely excluded.

[115] Griffin, Lindsay I. and Sandra DeLaZerda. "Unlicensed to Kill," A Report Prepared for the AAA Foundation for Traffic Safety, June 2000.

[116] See Griffin footnote. Also see National Highway Traffic Safety Administration (NHTSA). "Traffic Safety Facts 2005: A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System." Published 2006. See http://www-nrd.nhtsa.dot.gov/Pubs/TSF2005.PDF. DOT HS 810.631 and

population projections for the U.S.[117], Figure VI–7 reports estimated annual traffic fatalities (without REAL ID) for eleven years. Data on nonfatal traffic injuries show an average decline of 2.6 percent per year from 1989 to 2006, ending with 860 nonfatal injuries per 100,000 residents (2.6 million injuries) in 2006 (See NHTSA, 2007). The rate of property damage only (PDO) accidents has also declined by an average of 1.5 percent per year from 1996 to 2005, ending with 1,460 such accidents per 100,000 residents in 2005. Assuming that these rates of decline would also continue for eleven years Figure VI–7 reports estimates of nonfatal injuries and PDO accident vehicles for the eleven year period.[118]

Estimates of the value of welfare losses associated with future fatal, nonfatal, and PDO accidents are also shown below. As in previous sections, expected future deaths were valued using a VSL estimate of $3.0 million. Unit values for nonfatal injuries and PDO accidents were taken and adapted from the methodology used by NHSTA to estimate the total economic losses associated with traffic accidents in 2000.[119]   In that study, unit costs (per person costs of injury and non-injury related damages) were estimated for six separate MAIS injury severity categories. The weighted average of these unit cost estimates (weighted by the relative frequency of the six injury categories in 2000) is $19,452 (in 2006 dollars). Blincoe et al. also estimate average per vehicle damage costs for PDO accidents, which is the equivalent to $2,964 in 2006 dollars. Applying these per unit values, Figure VI–7 reports estimates of the total expected (without REAL ID) welfare losses from traffic accidents for eleven years. In 2007, the present discounted (at 7 percent) value of these annual losses amounts to $1.4 trillion.

National Highway Traffic Safety Administration (NHTSA). "Traffic Safety Facts: 2006: Traffic Safety Annual Assessment – A Preview," July 2007. See http://www-nrd.nhtsa.dot.gov/Pubs/810791.PDF.DOT HS 810 791.

[117] U.S. Census Bureau. "U.S. Interim Projections by Age, Sex, Race, and Hispanic Origin," detailed Excel file accessible at http://www.census.gov/ipc/www/usinterimproj/usproj2000-2050.xls. Last updated May 31, 2007.

[118] To convert the number of PDO accidents to the number of PDO accident vehicles, we assumed that the average number of vehicles per PDO accident is 1.75, based on national estimates from 2005 (NHTSA, 2006) and 2000 (Blincoe, 2002).

[119] Blincoe, L., A. Sea, E. Zaloshnja, T. Miller, E. Romano, S. Luchter, and R. Spicer (2002). "The Economic Impact of Motor Vehicle Crashes." Washington, DC: National Highway Traffic Safety Administration (NHTSA), DOT HS809446.

Figure VI-7: Estimated Future Welfare Losses from U.S. Traffic Accidents
(Over 11 years, Without REAL ID)

	Fatalities		Nonfatal Injuries		PDO Accident Vehicles		Total Welfare Loss (million 2006 $)	
Year	Number	Welfare Loss (million $)	Number	Welfare Loss (million $)	Number	Welfare Loss (million $)	All Accidents	Accidents Involving Drivers with Invalid Licenses
1	42,383	127,148	2,487,474	48,386	7,380,381	21,878	197,411	14,608
2	42,246	126,739	2,444,421	47,548	7,335,647	21,745	196,032	14,506
3	42,106	126,317	2,401,839	46,720	7,290,355	21,611	194,647	14,404
4	41,963	125,888	2,359,839	45,903	7,244,854	21,476	193,266	14,302
5	41,819	125,457	2,318,515	45,099	7,199,451	21,341	191,897	14,200
6	41,674	125,022	2,277,821	44,307	7,154,043	21,207	190,537	14,100
7	41,528	124,583	2,237,721	43,527	7,108,536	21,072	189,182	13,999
8	41,379	124,137	2,198,184	42,758	7,062,861	20,936	187,832	13,900
9	41,228	123,683	2,159,186	42,000	7,016,959	20,800	186,483	13,800
10	41,074	123,221	2,120,708	41,251	6,970,794	20,663	185,136	13,700
11	40,917	122,751	2,082,746	40,513	6,924,366	20,526	183,790	13,600
						Eleven Year Total (undiscounted)	2,096,212	155,120
						Eleven Year Total (7% discount)	1,435,831	106,251

Assuming that, without REAL ID, the percent of all future accidents involving drivers without valid licenses is 7.4 percent[120]– i.e., the same as reported in Griffin et al. (2000) for fatal accidents from 1993-7 – Figure VI–7 also reports the eleven-year welfare losses associated specifically with these accidents. In 2007, the present discounted (at 7 percent) value of these annual losses amounts to $106 billion.

Therefore, for example, even if REAL ID only reduces the number of future accidents involving drivers with invalid licenses by 1 percent, by keeping these unqualified drivers off the road, the avoided eleven-year welfare losses would be about $1 billion.

The estimates assume that the REAL ID benefits with respect to traffic accidents will begin to be enjoyed immediately to a certain extent but will only be enjoyed fully once the enrollment period, assumed to be finished after the last five years, is complete. Because we are unable to readily apportion an appropriate percentage during the first years after this rule will be promulgated we have chosen to account only for benefits during the last five years of this rulemaking or approximately $500 million discounted.

VI.E.3. Other Ancillary Benefits of REAL ID

OMB Circular A-4 states that a regulatory analysis should look beyond the direct benefits of a rulemaking and consider important ancillary benefits. There are several other potential ancillary

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[120] This estimate excludes unlicensed drivers who would likely be unaffected by the introduction of REAL ID.

benefits that REAL ID might bring that we have not attempted to quantify. These include possible reductions in the following:

- *Fraudulent access to public subsidies and benefit programs.* Programs such as Medicare, Medicaid, and in-State tuition rates can be accessed by fraudulently identifying oneself;
- *Illegal immigration.* REAL ID might reduce the rate of hiring of non-work authorized aliens. This will depend on the identity documentation that State authorities or private employers will require for lawful employment and other purposes[121];
- *Unlawful employment.* Sexual predators can gain employment to sensitive positions through fraudulent identification;
- *Unlawful access to firearms.* Background checks to permit firearm purchase requires identification. Fraudulent identification could allow a criminal to unlawfully gain access to firearms that could be used in committing a crime;
- *Voter fraud.* Fraudulent voting can occur when an individual fraudulently identifies himself or herself.

REAL ID may reduce on the margin the rate at which these fraudulent activities take place. The degree to which it does so will partly depend on State and local authority and/or private employer decisions as to what form of identification is acceptable for particular purposes, and the effectiveness with which identification checks are implemented.

VI.F. Enabled Opportunities

We finally note that REAL ID might provide benefits in other ways that can be labeled "enabled opportunities." A more secure and widely used form of identification provides an incremental layer of security on which others may depend. It may encourage wider acceptance of a drivers' license for identification purposes in new applications and may reduce the number of vetting processes that a person must undergo in private settings which maintain various levels of security by creating efficiencies in identification and vetting processes. Because of the more robust databases put in place due to this rulemaking, citizens may be able to address issues with database errors before problems arise (e.g. claiming Social Security benefits), which may mitigate potential losses. Finally, internal government processes would be improved, cross-jurisdictional communications would be better enabled, and more efficient cross-checking of databases for government purposes can be carried out.

VI.G. Conclusion

DHS provides a rough "break-even" analysis based on two methodologies: 1) the discounted cost of a single terror attack comparable to the 9/11 attacks taking place sometime over the next

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[121] Although not calculated in this analysis, the data base presented in the Preamble to this rulemaking includes examples of individuals who were prevented from boarding an airplane because of the fraudulent documentation papers that they presented. It is important to note that these individuals were stopped for reasons other than carrying an fraudulent ID with them and upon their being searched, it was determined that the possessed fraudulent papers.

eleven-year span, and 2) the rule having an impact on the annual probability of the U.S. experiencing 9/11 type attacks in the 11 years following the issuance of the rule. These two methodologies demonstrate what the potential benefits to our economy will be. Based upon the first methodology, if the REAL ID requirements lowered by 1.45 percent per year the annual probability of a terrorist attack that caused immediate impacts of $63.9 billion (which is an estimate of the immediate impact incurred in the 9/11 attack on New York City according to the New York City Comptroller)[122] , the quantified net benefits of the REAL ID regulation would be positive. If these requirements lowered by 0.25 percent per year the annual probability of a terrorist attack that caused both immediate and longer run impacts of $374.7 billion (which is an estimate of the immediate and longer run impacts incurred in the 9/11 attack and might be considered an upper bound estimate), the quantified net benefits of the REAL ID regulation would be positive.

We also looked at the impact if REAL ID were to prevent an incident that was half the magnitude in terms of the direct short term impact (i.e., 50 percent of 63.9 billion or $32 billion). This represents a lower bound on the costs that would result in the event of a costly but less successful attack than what tragically occurred in New York City. If these requirements lowered by 2.9 percent per year, the annual probability of a terrorist attack, the quantified net benefits of the REAL ID regulation would be positive.

Based upon the second methodology reported in a recent Rand Corporation working paper the principal benefit of an air transportation security rulemaking such as REAL ID is derived from the reduction that REAL ID will provide to the nation's exposure to a terror attack involving commercial aviation. It is exceedingly difficult to quantify this exposure with certainty, since the nature of the damages from an attack depends on many factors and the few past examples of such attacks are imperfect proxies for what may occur in the future. In addition, it is difficult to estimate the likelihood with which a successful attack may occur over any given time period. In fact, this likelihood and the degree to which authorities are able to gauge it may change over time as geopolitical and other (contributing) circumstances change.

For the final rule on REAL ID, benefits will begin to be enjoyed immediately to a certain extent but will only be enjoyed fully once the enrollment period, over the second five years is complete. In many cases, benefits estimates for the last five years are provided.

The final rule on REAL ID is likely to produce potential ancillary benefits as well. These benefits are numerous and will make it more difficult to fraudulently obtain a legitimate license and more costly to create a false license. These other benefits include reducing identity theft, unqualified driving, and fraudulent activities facilitated by less secure drivers' licenses such as fraudulent access to government subsidies and welfare programs, illegal immigration, unlawful employment, unlawful access to firearms, and voter fraud. DHS assumes that REAL ID will bring about changes on the margin that will potentially increase security and reduce illegal behavior. Because the size of the economic costs that REAL ID serves to reduce on the margin are so large, however, a relatively small impact of REAL ID may lead to significant benefits. The quantitative analysis of the primary benefit, and several ancillary benefits, of REAL ID is

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[122] Thompson, William C. "One Year Later: The Fiscal Impact of 9/11 on New York City," Report of the Comptroller of the City of New York, September 4, 2002.

presented above. This analysis suggests that benefits taken together justify the rule's economic costs.

VII. FINAL REGULATORY FLEXIBILITY ANALYSIS

The Regulatory Flexibility Act of 1980[123] (RFA), as amended, was enacted by Congress to ensure that small entities (small businesses, small not-for-profit organizations, and small governmental jurisdictions) are not unnecessarily or disproportionately burdened by Federal regulations. The RFA requires agencies to review rules to determine if they have "a significant economic impact on a substantial number of small entities." The following analysis suggests that the rule will not have a significant economic impact on a substantial number of small entities.

Reason for regulatory action

The Department is implementing the regulations in order to enact the requirements outlined in the REAL ID Act.[124]

Objectives of the rule

This rule establishes minimum standards for the issuance of State-issued drivers' licenses and non-driver identification cards (DL/IDs). These minimum standards will:
- Enhance the security features of DL/IDs rendering them more difficult to counterfeit, tamper with or cannibalize;
- Ensure that holders of unexpired REAL IDs are lawfully present in the United States;
- Enhance physical security of materials and production locations to reduce the likelihood of theft of materials and infiltration of DMVs by nefarious individuals;
- Enhance identity source document requirements and verifications to reduce the number of DL/IDs issued by DMVs to persons committing identity fraud; and,
- Ensure that a driver is licensed in only one State.

In short, these standards are designed to ensure that holders of unexpired REAL IDs are who they say they are and that they are lawfully present in the United States.

Issues Raised in public comments

DHS did not receive any public comments on the Initial Regulatory Flexibility Analysis that was issued in support of the NPRM during the public comment period. All public comments are available for the public to view at the Federal Docket Management System: http://www.regulations.gov.

As part of this rulemaking effort, DHS has summarized and responded to all public comments relating to the Regulatory Evaluation issued with the NPRM. Comment summaries and

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[123] Regulatory Flexibility Act, Pub. L. No 96-354, 94 Stat. 1164 (codified at 5 U.S.C. § 601).
[124] *REAL ID ACT of 2005*. Pub. L. 13, 109th Cong., 1st sess. (May 11, 2005), 201, 202.

responses are located in the preamble to the final rule, which is also available at http://www.regulations.gov and in the Federal Register.

Description and estimate of the number of small entities

The rule directly regulates States, which by definition are not small entities. The rule indirectly regulates entities that accept State-issued DL/IDs for Federal official purposes. The rule defines those purposes as accessing Federal facilities, entering nuclear power plants and boarding federally regulated commercial aircraft. The entities that accept DL/IDs for those purposes include the Federal Government, operators of nuclear power plants and entities examining personal identity documents of people boarding federally regulated commercial aircraft. The rule does not require action from any of these three entities. However, these entities are likely to engage in some activity to ensure that they comply with the Act. The remainder of this section estimates the number of small entities that are affected in this indirect way.

The Federal Government is not a small entity. Therefore, no small entities are affected by the prohibition on accepting State-issued DL/IDs that are not REAL IDs to access Federal facilities.

Nuclear power plants, though not directly regulated, may experience indirect impacts from this regulation. A nuclear power plant qualifies as a small entity if "including its affiliates, it is primarily engaged in the generation, transmission, and/or distribution of electric energy for sale and its total electric output for the preceding fiscal year did not exceed 4 million megawatt hours."[125] With only three exceptions, every nuclear power plant in the United States produced more than 4 million megawatt hours in fiscal year 2005.[126] However, companies producing more than 12 million megawatt hours own each of those three plants.[127] None of the nuclear power plants qualifies as small businesses using the SBA definition. Therefore, no small entities are affected by the prohibition on accepting State-issued DL/IDs that are not REAL IDs to enter nuclear power plants.

Entities examining identity documents of people who are boarding federally regulated commercial aircraft will not be directly regulated by the rulemaking. However, they may experience indirect effects. Different types of entities examine personal identity documents of people boarding federally regulated commercial aircraft. Currently, this responsibility falls on the entity with which passengers check their luggage, the entity examining boarding passes and IDs immediately in front of TSA screening checkpoints, and, when completed to fulfill federal requirements, the entities examining IDs directly before allowing passengers to board aircraft. The easiest group of entities to identify in this category is the airlines that enplane from and/or

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[125] Small Business Administration. *Small Business Size Standards Matched to North American Industrial Classification System*. Footnote #1. Available at <http://www.sba.gov/size/sizetable2002.html#fn1>. Accessed Jul 14, 2006.

[126] Calculations based on data from the Energy Information Administration. U.S. Department of Energy. *Monthly Nuclear Utility Generation by State and Reactor, 2004 and Monthly Nuclear Utility Generation by State and Reactor, 2005*. Available at <http://www.eia.doe.gov/cneaf/nuclear/page/nuc_generation/gensum.html>. Accessed Jul 14, 2006.

[127] Conclusion based on an internet search conducted on July 14, 2006 of the three specific power plants and the companies that own and operate them.

deplane into the sterile area of an airport.[128] The Small Business Administration considers
companies operating either scheduled or non-scheduled chartered passenger air transportation to
be small entities if they have fewer than 1,500 employees.[129] Using these criteria, DHS has
identified 24 specific small entities that offer scheduled or non-scheduled air passenger
transportation and that enplane from or deplane into an airport sterile area. Other federally
regulated commercial aircraft include charter flights, air taxis, scenic air tours and other similar
operations where the transportation of passengers for compensation comprises the majority of
their revenues. Many of these entities would qualify as small entities under the SBA definition.
SBA data show that, overall, 2,719 of the 2,877 firms engaged in air transportation (NAICS 481)
had fewer than 500 employees in 2004.[130]   Nearly all firms in the air transportation industry fall
well below the 1,500-employee size standard to qualify as a small entity. (Note that the federal
requirements may not require all of these firms to examine passenger identity documents prior to
boarding.)

Estimate of compliance requirement

Because States are not small entities, the estimate of their compliance requirements are not
detailed in this final regulatory flexibility analysis. The entities indirectly regulated in their
acceptance of State-issued DL/IDs for Federal official purposes have no explicit regulatory
requirements with which they must comply. However, DHS is estimating some of the indirect
impacts that small entities may face due to the regulation. For the purpose of this analysis, DHS
assumes that they will train employees that accept identification in order to comply with the
REAL ID rule, which will prohibit the acceptance of State-issued DL/IDs unless they are REAL
IDs for Federal official purposes. Of the three types of entities accepting DL/IDs for Federal
official purposes, the small entities are those examining identification documents of people
boarding federally regulated commercial aircraft.

DHS estimates that each employee accepting DL/IDs for official purposes will require two hours
of training. This training will assist personnel in identifying the differences between REAL IDs
and other State-issued DL/IDs. The training will also inform personnel about which States are or
are not compliant during the enrollment period. In order to assess the cost of this training, DHS
calculated the fully loaded wage rate of $22.95 per hour for airline ticket counter agents and
$22.50 per hour for airport checkpoint staff. Multiplying the wage rates by the estimated two
hours to complete the training yields estimates of $45.90 and $45.01 per-employee for ticket
counter agents and checkpoint staff, respectively. The next step to determine if firms' action will
have a significant impact is to divide the summed products of wage rates and trained employees
by firm revenue. Doing so yields the impact on the firm as a percent of their total receipts.
However, data on how many employees firms will train do not exist on an industry level, much
less at the firm level throughout the industry. Alternatively, a threshold analysis can determine

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[128] "Sterile area" is defined in 49 CFR 1540.5 and generally means an area with access limited to persons who have
undergone security screening by TSA. Therefore, only TSA-regulated airports have sterile areas.

[129] U.S. Small Business Administration. Small Business Size Standards Matched to North American Industrial
Classification System. NAICS 481111 and 481211. Available at < http://www.sba.gov/size/sizetable2002.html>.
Accessed Jul 14, 2006.

[130] U.S. Small Business Administration. *U.S. Data Classified by Employment Size of Firm: All industries, 2003-
2004*. Available at <http://www.sba.gov/advo/research/data.html>.   Accessed 4 Oct 2006.

at what point the revenue to trained employee ratio would constitute a one or three percent impact for a firm.

The Department has determined threshold levels that will cause an indirect impact equal to or less than one percent and equal to or greater than three percent of an entity's total revenue. If a firm's ratio is higher than the one percent threshold, the economic impact for that firm is not significant. If the ratio is lower than the three percent threshold, the economic impact will be larger than three percent of the firm's revenue. The threshold values are measured as the ratio of total revenue to the number of employees to be trained regarding REAL ID. If the amount of a firm's revenue per trained counter agent is more than $4,590, then the effect is less than one percent of total revenue. If one percent requires a revenue per agent of $4.590, then the three percent threshold revenue per agent lies at $1,530. If a firm's revenue per counter agent is less than $1,530, then the effect will be greater than three percent. The same approach can be applied to airport checkpoint staff yielding $4,501 at one percent and $1,500 at three percent. (See Figure VII–1.)

Figure VII-1: FRFA threshold for significant impact

Employee type	Airport ticket counter agent		Airport checkpoint staff
Fully loaded wage	$	22.95	$ 22.50
Hours of training		2	2
Training cost per employee	$	45.90	$ 45.01

Impact size (as % of revenue)	Total revenue to trained employee ratio (X : 1)		
1%	$	4,590	$ 4,501
2%		2,295	2,250
3%		1,530	1,500

Applying the one percent threshold—the most stringent—to the 24 scheduled service firms specifically identified as small entities suggests that training employees regarding REAL ID will not impose a significant economic impact on a substantial number of small entities. Dividing a firm's total 2005 revenue by $4,590 yields an estimate of how many employees would need to be trained before the indirect impact reaches the one percent of total revenue threshold. Comparing that estimate to the number of employees at each firm in 2005 reveals that companies would need to train anywhere from 6 to 56 times their total number of employees, including those who will not examine identification documents.[131]

The aggregated nature of industry-wide data does not allow for a firm-by firm analysis of the more than 2,719 small firms involved in air transportation. However, analysis of firms grouped by receipts in 2002 provides insight into the likelihood that entities will experience a significant indirect impact. Dividing receipts by the one percent threshold of $4,590 for each group estimates the number of employees that would result in a one percent impact on each group. The ratio of actual reported employees to threshold employees reveals that every group for which

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[131] Data from BTS (Form 41, Schedule P10); Duns and Bradstreet; Yahoo! Finance, and; Hoovers.com.

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data is available would need to train multiple times more employees regarding REAL ID than they actually employ. The smallest ratio (largest impact) is for scheduled passenger air transportation (NAICS 48111) that earned less than $100,000, implying that they would need to train more than 11 times the number of people than they employed before the impact would reach one percent of their receipts.[132] The largest ratio (smallest impact in terms of percent of revenues) would fall on nonscheduled chartered passenger firms (NAICS 481211) earning more than $100 million. These firms would need to train more than 85 times the size of their workforce to reach the one percent impact threshold.

The combination of the firm specific analysis and the analysis of aggregated firms within receipt categories suggests that the indirect impact of training agents regarding REAL ID for the official purpose of boarding federally regulated commercial aircraft will not constitute a significant economic impact on a substantial number of small entities.

The above analyses show that it is unlikely that the prohibition on accepting State-issued DL/IDs unless they are REAL IDs will have a significant economic impact on a substantial number of small entities. Further, the only directly regulated entities are States, which by definition are not small entities. Therefore, the Department concludes that this rule will not have a significant economic impact on a substantial number of small entities.

Significant alternatives considered

Significant alternatives to the requirements implemented by DHS do not appear in this section because the final rule does not have a significant economic impact on a substantial number of small entities. However, significant alternatives are discussed in the cost estimate and alternatives analysis section of the regulatory evaluation.

Duplicative, overlapping and conflicting rules

DHS is unaware of any duplicative, overlapping or conflicting regulations that will directly affect small entities.

VIII. INTERNATIONAL TRADE

The Trade Agreement Act of 1979 prohibits Federal agencies from engaging in any standards or related activities that create unnecessary obstacles to the foreign commerce of the United States. Legitimate domestic objectives, such as safety, are not considered unnecessary obstacles. The statute also requires consideration of international standards and, where appropriate, that they be the basis for U.S. standards. There is no international standard for State-issued driver licenses or non-driver identification cards. DHS has determined that this rule will not have an impact on trade.

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[132] Data from U.S. Small Business Administration. *U.S. All Industries by Receipt Size: 2002*. Available online at <http://www.sba.gov/advo/research/data.html>. Accessed 4 Oct 2006.

IX. UNFUNDED MANDATES ANALYSIS

Section 202 of the Unfunded Mandates Reform Act of 1995 (UMRA) requires Federal agencies to prepare a written assessment of the costs, benefits, and other effects of proposed or final rules that include a Federal mandate likely to result in the expenditure by State, local, or tribal governments, in the aggregate, or by the private sector, of more than $100 million in any one year (adjusted for inflation with base year of 1995). Before promulgating a rule for which a written statement is needed, section 205 of the UMRA generally requires agencies to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objective of the rule. Agencies are also required to seek input from the States in the preparation of such rules.

The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows DHS to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the agency publishes with the final rule an explanation why that alternative was not adopted.

This final rule calls for voluntary action on the part of States and, therefore, the Department of Homeland Security does not consider it an unfunded mandate. As set forth in section 202(a)(1) of the REAL ID Act, the law is binding on Federal agencies—not on the States. Indeed, in the Conference Report, Congress specifically stated that the "application of the law is indirect, and hence States need not comply with the listed standards." Conf. Rep. at 177.

 Moreover, as indicated above, UMRA excludes from its scope, regulations which are required for national security reasons. National security was a primary motivator for the REAL ID Act; indeed, the Act itself is an effort to implement recommendations of the 9/11 Commission, and Congress took pains to explain the connection between REAL ID and national security, with over a dozen references to "terrorists" or "terrorism" in the Conference Report. See 9/11 Commission Public Report, Chapter 12.4; Conf. Rep., 179 - 183.

Notwithstanding the voluntary nature of the REAL ID Act, DHS assumes that States will willingly comply with the regulation to maintain the conveniences enjoyed by their residents when using their State-issued drivers' licenses and non-driver identity cards for official purposes, particularly as it pertains to domestic air travel. While, for the reasons set forth above, DHS believes that the REAL ID Act does not constitute an unfunded mandate, DHS nevertheless believes that many States may find noncompliance an unattractive option.

Based on that knowledge, DHS has taken steps to comply with the requirements of UMRA. Specifically, DHS has analyzed the estimated cost to States and considered appropriate alternatives to, and benefits derived from, the final regulation. Moreover, DHS has solicited input from State and local governments in the preparation of this final rule.

APPENDIX A: POPULATIONS

State populations

Many of the calculations used in the analysis are based upon the estimated and projected population age 16+ of the States. (See Figure Appendix A–1). These numbers are used to estimate DL/ID to population ratios, the number DL/ID holders in a given year, gross growth in DL/ID issuance, etc.

Figure Appendix–1: Estimated[133] and projected[134] population age 16+

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Alabama	3,541,779	3,561,755	3,580,561	3,597,863	3,614,400	3,629,340	3,643,243	3,656,421	3,668,987	3,681,630	3,694,519	3,708,532	3,724,962	3,738,878
Alaska	499,933	506,745	513,271	519,159	524,513	529,462	534,121	538,572	542,766	546,883	551,067	555,374	560,139	565,008
Arizona	4,504,367	4,627,916	4,752,547	4,877,853	5,004,011	5,130,117	5,258,151	5,387,899	5,519,202	5,652,505	5,789,554	5,930,682	6,079,212	6,231,331
Arkansas	2,163,293	2,181,689	2,199,778	2,216,871	2,233,133	2,248,434	2,263,702	2,279,441	2,295,012	2,310,494	2,325,966	2,341,587	2,357,608	2,373,265
California	27,666,498	28,093,135	28,517,175	28,923,493	29,309,702	29,677,782	30,031,798	30,369,836	30,684,746	30,982,314	31,271,792	31,564,291	31,880,630	32,198,679
Colorado	3,594,767	3,633,051	3,669,887	3,705,060	3,738,492	3,769,744	3,800,236	3,830,294	3,859,505	3,888,637	3,919,100	3,950,883	3,986,275	4,021,979
Connecticut	2,760,424	2,783,585	2,804,954	2,824,330	2,842,335	2,858,303	2,872,628	2,886,084	2,897,911	2,907,698	2,917,124	2,924,564	2,931,145	2,936,605
Delaware	660,054	669,711	679,224	688,110	696,674	704,691	712,286	719,499	726,181	732,885	739,444	745,908	752,599	758,895
District of Columbia	448,966	445,678	442,530	439,252	435,748	431,722	427,142	422,270	416,944	411,239	405,152	399,293	394,319	389,286
Florida	14,099,092	14,403,688	14,708,657	15,011,655	15,316,148	15,620,787	15,926,486	16,236,015	16,549,006	16,867,332	17,193,936	17,531,805	17,893,215	18,264,518
Georgia	6,826,000	6,938,568	7,048,309	7,154,599	7,258,804	7,358,454	7,455,154	7,550,369	7,643,071	7,734,584	7,826,848	7,920,644	8,023,393	8,123,765
Hawaii	1,006,005	1,018,640	1,030,616	1,041,225	1,050,673	1,059,232	1,066,671	1,073,141	1,078,257	1,082,548	1,086,175	1,089,354	1,094,169	1,099,079
Idaho	1,067,787	1,086,332	1,104,705	1,122,617	1,140,247	1,157,441	1,174,633	1,192,093	1,209,527	1,226,974	1,245,035	1,263,473	1,282,334	1,301,142
Illinois	9,826,724	9,885,362	9,940,285	9,989,343	10,034,243	10,074,274	10,110,621	10,142,265	10,167,060	10,188,852	10,209,000	10,228,973	10,254,828	10,279,027
Indiana	4,834,697	4,867,347	4,898,789	4,928,040	4,955,161	4,979,674	5,002,551	5,024,793	5,044,696	5,064,390	5,084,230	5,104,200	5,124,921	5,142,497
Iowa	2,336,670	2,347,875	2,358,304	2,367,317	2,375,030	2,381,106	2,386,023	2,390,090	2,393,389	2,396,091	2,398,661	2,400,794	2,402,231	2,402,483
Kansas	2,130,601	2,143,671	2,155,352	2,166,282	2,175,953	2,184,537	2,192,717	2,200,408	2,207,084	2,213,869	2,221,058	2,228,195	2,235,284	2,241,728
Kentucky	3,272,452	3,295,451	3,317,844	3,339,031	3,358,532	3,376,557	3,393,917	3,410,194	3,425,456	3,440,711	3,456,474	3,472,402	3,488,939	3,504,177
Louisiana	3,485,760	3,505,901	3,525,109	3,542,594	3,558,486	3,571,929	3,583,260	3,593,183	3,602,104	3,611,231	3,620,553	3,630,620	3,642,426	3,653,682
Maine	1,071,358	1,082,563	1,092,984	1,102,635	1,111,239	1,118,859	1,125,817	1,132,243	1,138,077	1,143,439	1,148,540	1,153,151	1,157,527	1,161,372
Maryland	4,376,960	4,438,455	4,497,541	4,553,495	4,606,203	4,655,280	4,702,309	4,746,908	4,788,802	4,828,863	4,868,746	4,908,115	4,950,323	4,991,207
Massachusetts	5,179,391	5,218,995	5,256,628	5,290,561	5,322,325	5,350,280	5,376,005	5,398,967	5,419,204	5,437,716	5,454,815	5,470,906	5,489,206	5,506,429
Michigan	7,946,639	8,015,039	8,079,181	8,136,491	8,186,993	8,231,741	8,272,275	8,307,295	8,337,734	8,365,726	8,391,601	8,415,128	8,438,623	8,456,317
Minnesota	4,047,393	4,097,183	4,144,896	4,190,140	4,233,203	4,273,985	4,313,063	4,351,011	4,387,299	4,422,765	4,458,162	4,493,238	4,529,023	4,563,138
Mississippi	2,230,836	2,245,909	2,260,137	2,273,548	2,286,446	2,297,533	2,307,781	2,317,161	2,325,565	2,334,301	2,343,246	2,352,693	2,363,893	2,373,968
Missouri	4,512,192	4,547,718	4,582,056	4,614,159	4,643,954	4,671,042	4,696,205	4,720,546	4,743,182	4,766,135	4,788,816	4,811,038	4,833,942	4,855,877
Montana	743,531	751,854	759,585	766,844	773,475	779,658	785,424	790,846	795,883	800,732	805,601	810,227	814,694	819,094
Nebraska	1,349,904	1,355,637	1,360,613	1,364,962	1,368,423	1,371,341	1,374,084	1,376,355	1,378,193	1,379,860	1,381,917	1,384,018	1,386,546	1,389,251
Nevada	1,820,145	1,874,422	1,929,188	1,984,413	2,039,837	2,095,651	2,151,992	2,208,870	2,265,750	2,322,783	2,380,527	2,438,749	2,498,216	2,558,501
New Hampshire	1,043,847	1,059,482	1,074,766	1,089,172	1,102,992	1,116,164	1,129,052	1,141,432	1,153,303	1,164,721	1,175,820	1,186,486	1,197,201	1,207,708
New Jersey	6,868,160	6,932,646	6,993,382	7,049,681	7,102,952	7,152,674	7,200,137	7,245,248	7,286,509	7,325,342	7,362,866	7,399,156	7,435,475	7,472,466
New Mexico	1,472,008	1,491,290	1,509,304	1,525,597	1,540,518	1,553,644	1,565,437	1,576,274	1,585,917	1,595,028	1,604,038	1,612,603	1,620,932	1,629,080
New York	15,198,282	15,289,544	15,372,674	15,444,147	15,505,251	15,554,100	15,594,841	15,626,338	15,644,489	15,654,318	15,659,084	15,661,619	15,672,169	15,677,470
North Carolina	6,805,285	6,916,802	7,027,993	7,136,687	7,243,166	7,346,903	7,447,615	7,547,322	7,645,894	7,745,481	7,847,178	7,951,513	8,062,550	8,171,288
North Dakota	506,797	508,803	510,482	511,905	512,973	513,773	514,227	514,430	514,373	514,132	513,607	512,910	511,997	511,136
Ohio	8,981,186	9,022,215	9,060,865	9,093,987	9,121,783	9,143,656	9,161,919	9,177,583	9,188,006	9,197,297	9,205,503	9,213,156	9,222,733	9,228,453
Oklahoma	2,733,466	2,747,673	2,761,503	2,774,759	2,786,428	2,796,813	2,806,395	2,815,775	2,825,433	2,835,825	2,846,626	2,857,460	2,869,177	2,881,693
Oregon	2,848,288	2,884,398	2,919,951	2,954,518	2,987,948	3,020,641	3,053,757	3,087,727	3,121,941	3,156,318	3,191,584	3,227,842	3,264,950	3,302,352
Pennsylvania	9,933,146	9,992,485	10,047,263	10,095,381	10,137,824	10,173,407	10,203,082	10,227,560	10,245,272	10,259,671	10,272,698	10,284,531	10,297,247	10,306,404
Rhode Island	863,896	872,570	880,901	888,579	895,583	901,743	907,124	911,629	915,482	918,858	921,681	923,850	925,858	927,421
South Carolina	3,326,796	3,372,029	3,416,063	3,457,786	3,497,395	3,534,169	3,569,423	3,603,388	3,635,925	3,668,293	3,700,639	3,733,534	3,767,954	3,800,904
South Dakota	599,274	602,807	605,982	608,927	611,451	613,598	615,393	617,112	618,562	619,811	621,197	622,389	623,390	624,329
Tennessee	4,682,463	4,732,455	4,782,370	4,830,161	4,875,950	4,919,997	4,963,635	5,006,359	5,047,670	5,089,436	5,132,057	5,175,254	5,220,929	5,265,291
Texas	17,133,078	17,426,874	17,717,444	18,003,410	18,283,280	18,555,275	18,823,578	19,092,912	19,360,449	19,629,547	19,904,240	20,191,543	20,503,068	20,823,035
Utah	1,733,358	1,759,979	1,786,953	1,813,483	1,839,810	1,865,796	1,892,761	1,920,338	1,948,699	1,977,916	2,008,827	2,041,376	2,074,850	2,109,208
Vermont	510,234	516,530	522,568	528,140	533,350	538,265	542,777	546,769	550,427	553,816	557,112	560,129	563,080	565,512
Virginia	5,945,479	6,031,564	6,116,452	6,198,063	6,277,184	6,353,047	6,426,721	6,497,373	6,566,140	6,633,716	6,701,768	6,770,266	6,842,723	6,914,092
Washington	4,892,614	4,960,852	5,029,180	5,097,033	5,163,610	5,228,246	5,292,828	5,357,575	5,422,917	5,489,662	5,557,754	5,627,127	5,698,864	5,771,227
West Virginia	1,471,739	1,476,881	1,481,657	1,485,575	1,488,314	1,490,217	1,491,500	1,492,291	1,492,366	1,492,005	1,491,511	1,491,038	1,490,308	1,489,166
Wisconsin	4,379,277	4,420,681	4,459,968	4,496,006	4,529,398	4,559,653	4,587,679	4,613,631	4,637,459	4,660,161	4,682,710	4,704,527	4,725,743	4,745,731
Wyoming	402,203	405,578	408,722	411,513	414,004	416,171	417,971	419,654	421,277	422,842	424,405	425,816	427,009	428,262
Total	230,335,094	233,048,013	235,697,149	238,226,452	240,645,547	242,936,408	245,148,147	247,291,789	249,339,143	251,347,383	253,360,564	255,402,962	257,588,829	259,753,406

Population born before 1958

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	95,783,602	93,673,604	91,540,166	89,385,262	87,211,526	85,021,305	82,817,511	80,602,916	78,378,883	76,146,730	73,907,820	71,663,093	69,412,491	67,156,837

Population born after 1958 and older than 16 y/o

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total	130,036,767	134,866,922	139,658,883	144,354,117	148,960,271	153,456,929	157,889,576	162,266,711	166,559,104	170,822,483	175,099,649	179,413,983	183,879,265	188,330,689

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[133] Years 2000-2004. US Census Bureau. Mar 10, 2005. Available at <http://www.census.gov/popest/datasets.html>. Accessed Feb 3, 2006.

[134] Years 2005-2017. US Census Bureau. Apr 2005. Available at <http://www.census.gov/population/projections/DownldFile3.xls>. Accessed Feb 3, 2006.

To estimate the number of DL/IDs on file in future years, DHS calculated the DL/ID to population ratio (presented in Figure Appendix–3) by dividing DL/IDs on file as reported by States in AAMVA's first 2006 survey by the US Census' projected population for each State age 16+. In the few cases where States did not provide data to the AAMVA survey, DHS used the mean State response as reported in the Federal Highway Administration's Highway Statistics series for years 2000 through 2004 and the ratio from the AAVMA data for 2005. (See Figure Appendix–2.) To calculate the number of DL/ID holders in any given year, the DL/ID to population age 16+ ratio is limited to one.

Figure Appendix–2: Mean ratio of drivers to population age 16+ over years 2000-2005[135]

State	Mean	Variance	State	Mean	Variance
US[†]	0.8787		MO	0.8911	0.0002
AL	1.0636	0.0115	MT	0.9609	*
AK	1.0053	0.0002	NE	0.9723	0.0028
AZ	0.9076	0.0030	NV	0.8815	0.0002
AR	0.9263	0.0009	NH	0.9550	*
CA	0.8326	*	NJ	0.8578	*
CO	0.9146	0.0015	NM	0.8862	0.0005
CT	0.9642	0.0024	NY	0.7562	0.0019
DE	0.8935	0.0017	NC	0.9206	0.0001
DC	0.7072	0.0016	ND	0.9097	0.0001
FL	0.9898	0.0026	OH	0.8696	0.0009
GA	0.8910	0.0006	OK	0.8513	0.0004
HI	0.8447	0.0011	OR	0.9368	0.0004
ID	0.8969	0.0001	PA	0.8474	*
IL	0.8316	0.0004	RI	0.8281	0.0008
IN	0.9278	0.0060	SC	0.9096	0.0001
IA	0.8645	0.0007	SD	0.9375	0.0001
KS	0.9268	0.0002	TN	0.9274	0.0002
KY	0.8636	0.0001	TX	0.8486	0.0016
LA	0.9315	0.0263	UT	0.9177	*
ME	0.9084	0.0002	VT	1.0839	0.0010
MD	0.8385	0.0004	VA	0.8792	0.0002
MA	0.9063	0.0001	WA	0.9220	0.0002
MI	0.9042	*	WV	0.8960	0.0005
MN	0.7948	0.0042	WI	0.8763	0.0006
MS	0.9048	0.0102	WY	0.9299	0.0052

* Variance is less than 0.00005

† Mean of states weighted by population age 16+

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[135] For years 2000-2004, number of drivers per state obtained from: Office of Highway Policy Information, US Department of Transportation. Highway Statistics. Section III: Driver Licensing. Available at: <http://www.fhwa.dot.gov/policy/ohpi/qfdrivers.htm>. Accessed Apr 26, 2006. For the year 2005, data from AAMVA's first survey of 2006.

Figure Appendix–3: Ratio of IDs and DL/IDs on file to population age 16+ in 2005[136]

State	Ratio (IDs)	Ratio (both)	State	Ratio (IDs)	Ratio (both)
US*	0.1456	1.0644	MO	0.1598	1.0763
AL	0.1817	1.4643	MT	0.0214	0.9837
AK		1.0006	NE	0.0950	1.1773
AZ	0.2106	1.2268	NV	0.2309	1.1286
AR	0.1331	1.0741	NH		
CA	0.1298	0.9555	NJ	0.0437	0.9027
CO	0.1755	1.1047	NM	0.1713	1.0936
CT	0.0987	0.9662	NY	0.1061	0.9579
DE	0.3788	1.3035	NC	0.1263	1.0665
DC	0.2066	0.8906	ND	0.1471	1.0699
FL	0.3121	1.3953	OH	0.1111	0.9501
GA	0.1012	0.9961	OK	0.0942	0.9609
HI	0.2908	1.1967	OR	0.1053	1.0884
ID	0.0702	0.9693	PA	0.0604	0.9061
IL	0.3293	1.2009	RI	0.0769	0.9175
IN	0.1017	1.1665	SC	0.1449	1.0728
IA	0.0607	0.9765	SD	0.1602	1.1180
KS	0.1405	1.0833	TN	0.1198	1.0524
KY	0.1008	0.9788	TX	0.2184	1.1424
LA	0.2794	1.5237	UT		
ME	0.2539	1.1733	VT	0.0226	1.1706
MD	0.0914	0.9701	VA	0.0677	0.9386
MA	0.1157	1.0142	WA	0.0817	1.0294
MI	0.1007	1.0067	WV		
MN	0.0618	0.9880	WI	0.1159	1.0018
MS	0.0788	1.1796	WY		0.9881

Enrollment estimation

DHS calculated the schedule of enrollment issuances by State 's' and year 'y' using the generalized forms in Figure Appendix–4. The enrollment period for each State was the lesser of their typical validity period or five years for individuals born on or after May 11, 1965 or eight years for individual born before May 11, 1965. The initial population for each State is their projected DL/ID holders in 2008. The lost/stolen rate is the national weighted average of 10.169 percent. These equations state that:

1) Total national enrollment issuances for a given year are equal to the sum of all States for that year;
2) Enrollments for any given State and year are equal to the number of expiring DL/IDs being replaced with REAL IDs in that State in that year plus the number of lost/stolen DL/IDs being replaced with REAL IDs in that State for that year;
3) The number of expiring REAL IDs being replaced with REAL IDs in any given State and year is equal to:
   a. The number of people holding DL/IDs in that State in 2008 divided by the lesser of their typical validity period or five years—this assumes that in States with

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[136] DL/ID data from: AAMVA. First survey of 2006. Population data from: U.S. Census Bureau. Available at <http://www.census.gov/population/projections/DownldFile3.xls>. Accessed Feb 3, 2006.

validity periods equal to or less than five years that DL/IDs are distributed evenly in the DL/ID's life-cycle or that in States with validity periods greater than five years people will plan on spreading themselves evenly over the enrollment period, possibly to avoid long lines at the end of the enrollment period, less;

    b. The cumulative number of lost/stolen DL/IDs among the initial population divided by the enrollment period because some people will have already received a REAL ID when replacing a lost/stolen card in a previous year—for example, in a State with a four-year renewal cycle one-fourth of the cumulative lost/stolen DL/ID holders would have had an ID expiring in year three—and thus should not be double counted;

4) The number of lost/stolen DL/IDs replaced with a REAL ID in a given State and year is equal to the number of previously issued DL/IDs at the end of the previous year less the number of expiring DL/IDs replaced with REAL IDs in the given year, all multiplied by the national lost/stolen rate—this prevents the double counting of DL/IDs that are lost/stolen after having already been replaced with REAL IDs;

5) The number of still-valid, previously issued DL/IDs in a given State and year is equal to the number of DL/ID holders in that State in 2008 less the number of DL/IDs replaced with REAL IDs, and;

6) If the predicted number of enrollments will be greater than the number of still-valid, previously issued DL/IDs in a given State in a given year, then the State can complete its enrollment period in that year by issuing REAL IDs to all of those who still hold a previously-issued DL/ID—this number may be less than the estimated enrollments for the year due to the early replacement of lost/stolen DL/IDs and implies that the State can complete the enrollment process in less than 12 months of the State's final enrollment year.

Figure Appendix–4: Generalized forms for phase-in issuance

$$Total\ national\ phase-ins_y = \sum_{s}^{S} Phase-ins_{s,y}$$

$$Phase-ins_{s,y} = Expiration\ s_{s,y} + Lost\ /\ Stolen_{s,y}$$

$$Expirations_{s,y} = \frac{\left(Initial\ population_s - \sum_{1}^{y-1} Lost\ /\ Stolen_{s,y} \right)}{Phase-in\ Period_s}$$

$$Lost\ /\ Stolen_{s,y} = \left(StillValid_{s,y-1} - Expirations_{s,y} \right) \times Lost\ /\ Stolen\ rate$$

$$StillValid_{s,y} = Initial\ population_s - Phase-ins_{s,y}$$

$$IF \quad StillValid_{s,y-1} - Phase-ins_{s,y} < 0$$
$$THEN \quad Phase-ins_{s,y} = StillValid_{s,y-1}$$

APPENDIX B: ACQUIRING SOURCE DOCUMENTS

Economic cost to acquire source documents

DHS has estimated the level of effort required for citizens to obtain the necessary source documents. DHS has assumed that lawfully present foreign-born non-citizens will have acceptable source documents readily available. Native born citizens, however, may have never received or do not have ready access to the documents specified in the final rule. (Note that all citizens, native or naturalized, are eligible for at least one of the documents on the list.)

Obtaining a State-issued birth certificate requires less effort than any other REAL ID identity source document available to native-born citizens. (To compare the documents, see Figure Appendix–7.) The distribution of States by the fees charged for birth certificates is represented in Figure Appendix–5. The mean cost of State-issued birth certificates for all 51 States when weighted by population age 16+ is $15.81. (DHS was unable to determine the State of birth for people alive in 2005. The population of each State in 2005 should be a reasonable proxy for the demand on State vital statistics offices for certified copies of birth certificates. DHS did not receive any comments or data on this issue.) See Figure Appendix–6 for other descriptive statistics.

Figure Appendix–5: Distribution of States by birth certificate fees[137]

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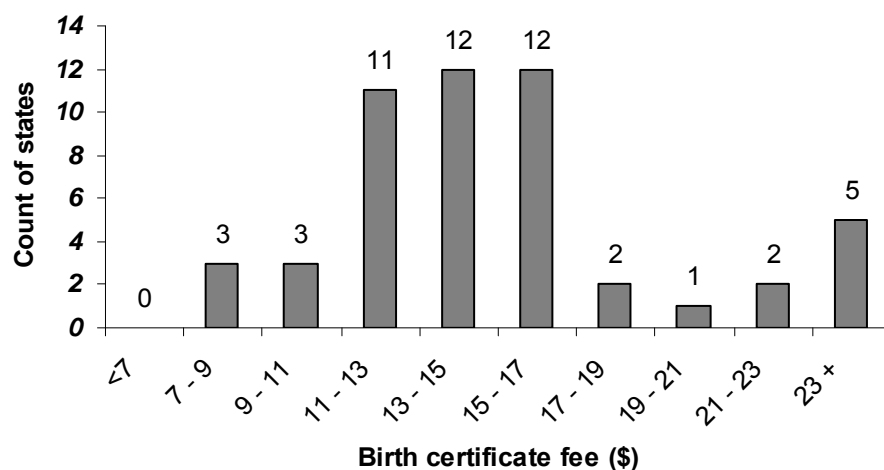
[137] State vital statistics websites. Accessed Jun 6, 2006.

Figure Appendix–6: Birth certificate application fee statistics

Measure	Value
Count of sample	51
Mean (simple)	$ 14.08
Standard deviation	6.2677
Weighted mean	$ 15.81
Median	$ 12.00
Mode	$ 15.00
Low	$ 7.00
High	$ 42.50

Figure Appendix–7 shows the monetized estimated effort required to obtain birth certificates ($31.08), passports ($196.38), certificates of naturalization ($410.10) and social security cards ($46.61). Application fees are those paid to the issuing agency and/or any intermediary. "Other fees" covers postage for birth certificate applications sent by mail and photographs for passports. It also includes an estimated cost of travel to obtain the certificate of naturalization, which must be applied for in person at a USCIS office. (Most States have at least one USCIS office but some, like Wyoming and the Dakotas, do not.) For SSN card replacements, it also includes the cost to SSA to process the application, which is not passed to applicants. The preparation time is used to collect information, fill out and submit (e.g. SSA "interviews" for replacement cards) applications. Queuing time is that time spent in line in order to submit the application. (Most birth certificate applications can be filed via mail or online. The Department is aware that some people will choose to stand in-line but is unable to estimate the proportion of people who will do so. DHS did not receive data relating to this issue.) "Other time" includes travel time and time spent obtaining photographs for the application. DHS received data regarding birth certificate fees in some States as well as survey data indicating the likely need for birth certificates among persons over 50. This information coincided with the data DHS presented in its NPRM. DHS did not however, receive information, such as wait times, regarding applicant effort required to obtain source documents. Changing two of the assumptions—the proportion of people filing birth certificate applications in-person and the amount of time for photos and travel to obtain a passport—would further support the policy decisions made by the Department by increasing the cost of alternative options by at least as much as they would increase the cost of the chosen option.

Figure Appendix–7: Effort required to obtain source documents

Document	State-issued birth certificate, average		Notes:
Application fee	$	15.81	Weighted mean of fees reported on state websites.
Other fees	$	0.39	Postage
Fees required (subtotal)	**$**	**16.20**	
Preparation time (hrs)	0.56	(= 34 mins)	DHS estimate
Queuing time (hrs)	0.00		DHS assumes applicants will file via mail or online.
Other time (hrs)	0.00		
Total time (hrs)	0.5625	(= 34 mins)	
Value of time ($/hr)	$	26.46	**
Opportunity cost (subtotal)	**$**	**14.88**	
Total cost to obtain document	**$**	**31.08**	
Document	**U.S. passport**		Notes:
Application fee	$	97.00	Department of State. Available at <http://travel.state.gov/passport/get/fees/fees_837.html>. Accessed May 5, 2006.
Other fees	$	20.00	DHS estimate of photo and other costs (travel, shipping, etc.).
Fees required (subtotal)	**$**	**117.00**	
Preparation time (hrs)	1.42	(= 85 mins)	OMB approval No. 1405-0004
Queuing time (hrs)	0.33	(= 20 mins)	DHS estimate.
Other time (hrs)	1.25	(= 75 mins)	DHS estimate (obtaining photo, travel time, etc.).
Total time (hrs)	3.00	(= 180 mins)	
Value of time ($/hr)	$	26.46	**
Opportunity cost (subtotal)	**$**	**79.38**	
Total cost to obtain document	**$**	**196.38**	
Document	**Certificate of Naturalization (replacement)**		Notes:
Application fee	$	220.00	USCIS. *G-1055 Fee Schedule*. Available at <http://www.uscis.gov/graphics/formsfee/forms/files/g-1055.pdf> Accessed May 5, 2006.
Other fees	$	60.00	DHS estimate (photo and transportation).
Fees required (subtotal)	**$**	**280.00**	
Preparation time (hrs)	0.92	(= 55 mins)	OMB approval No. 1615-0091
Queuing time (hrs)	0.50	(= 30 mins)	DHS estimate.
Other time (hrs)	3.50	(= 210 mins)	DHS estimate (photo and transportation).
Total time (hrs)	4.92	(= 295 mins)	
Value of time ($/hr)	$	26.46	**
Opportunity cost (subtotal)	**$**	**130.10**	
Total cost to obtain document	**$**	**410.10**	
Document	**Social security card**		Notes:
Application fee	$	-	
Other fees	$	25.00	This is SSA's cost to process the replacement application. It is not passed via fees to applicants.
Fees required (subtotal)	**$**	**25.00**	
Preparation time (hrs)	0.28	(= 17 mins)	
Queuing time (hrs)	0.53	(= 32 mins)	
Other time (hrs)		(= 0 mins)	
Total time (hrs)	0.82	(= 49 mins)	
Value of time ($/hr)	$	26.46	**
Opportunity cost (subtotal)	**$**	**21.61**	
Total cost to obtain document	**$**	**46.61**	

**Value of time estimates from: U.S. Bureau of Labor Statistics. Employer Cost for Employee Compensation available at <http://data.bls.gov/PDQ/outside.jsp?survey=cm>. Data series: Total compensation, All occupations, All Civilian [CMU1010000000000D,CMU1010000000000P (c)] 2005Q4. Accessed Apr 10, 2006.

Identity source documents

To estimate the total number of native-born people that need to obtain identity source documents, DHS created estimates for the proportion of the population having at least one of the documents readily available (see Figure Appendix–8). Each estimate is for the group of people subject to all of the preceding assumptions. For example, of the native citizens without a U.S. Passport, 25 percent will not have a State-verifiable birth certificate. This equals 17 percent of the REAL ID initial application population. Enrollment applicants would normally have simply renewed their DL/ID and, under the status quo, would have only needed their expiring DL/ID. Therefore, any enrollment applicant needing to obtain a birth certificate under the final rule will do so as a direct result of REAL ID. However, many of the growth applicants would have needed to acquire a birth certificate even under the status quo. Only those who would have used other documents (e.g. baptismal certificates, high school yearbooks, etc.) under the status quo will seek a birth certificate as a direct result of the final rule.

DHS considered two interpretations of what qualifies as an "acceptable" birth certificate considered by DHS. The first option is to allow birth certificates issued by State or local governments that are verifiable with the State vital records database. The second option is to accept only birth certificates that were issued by a State government. DHS chose the first option because more people have them readily available, they may be easier to obtain and accepting birth certificates issued by local governments does not degrade security because they are verified with the State government. (For further discussion, see the relevant section of the economic analysis.)

Figure Appendix–8: Percent of REAL ID population to seek a birth certificate

Of those remaining (sub-category exclusive of those above it)	Primary	Low	High	
All (REAL ID initial applicants)	100%	100%	100%	*A*
Native citizens[138]	88%	88%	88%	*B*
Without a U.S. Passport[139]	79%	76%	82%	*C*
Without State-verifiable birth certificate	25%	10%	40%	*D*
Would have used "other"/unacceptable documents	20%	10%	30%	*E*
Enrollment applicants needing birth certificate	**17%**	7%	29%	*=(A x B x C x D)*
Growth applicants needing birth certificate	**3%**	1%	9%	*=(A x B x C x D x E)*

Note: According to the U.S. Department of State, in June 2007, slightly more than 25% of the U.S. population now holds a valid U.S. passport.

DHS then calculated the number of applicants that will need to obtain a birth certificate. Under the requirement to accept any State-verifiable birth certificate, 17 million to 63.8 million, with a primary estimate of 35.8 million, people will need to seek a birth certificate. (See Figure Appendix–11.) (Break downs of enrollment and growth estimates are in Figure Appendix–9 and Figure Appendix–10, respectively.)

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[138] In 2004, 12 percent of the population was foreign-born. U.S. Census Bureau. American Fact Finder. Available at <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed May 3, 2006.

[139] The primary estimate (79.42%) is the estimated percent of U.S. residents NOT holding a valid U.S. passports in 2005. The low estimate (76.12%) is the estimated percent U.S. residents age16+ NOT holding a valid U.S. passport in 2005. The high estimate (82%) is the commonly accepted percent of U.S. residents NOT holding a valid U.S. passport.

Figure Appendix–9: Birth certificate acquisition for enrollees (thousands)

Birth Certificate Acquisition for Enrollees (thousands)

Year	Enrollment	Primary (=17%)	Low (=7%)	High (=29%)
1	-	-	-	-
2	1,621.5	282	108	468
3	25,761.0	4,477	1,723	7,436
4	21,004.1	3,651	1,405	6,063
5	20,131.7	3,499	1,346	5,811
6	17,121.2	2,976	1,145	4,942
7	31,728.3	5,514	2,122	9,158
8	18,081.7	3,143	1,209	5,219
9	17,330.7	3,012	1,159	5,002
10	14,739.0	2,562	986	4,254
11	6,958.3	1,209	465	2,008
Total	174,477	30,324	11,669	50,361

Figure Appendix–10: Birth certificate acquisitions for growth issuances (thousands)

Birth Certificate Acquisition for Growth Issuances (thousands)

Year	Growth	Primary (=3%)	Low (=1%)	High (=9%)
1	-	-	-	-
2	14,518	505	97	1,257
3	14,690	511	98	1,272
4	14,855	516	99	1,286
5	15,017	522	100	1,300
6	15,176	528	101	1,314
7	15,330	533	103	1,327
8	15,484	538	104	1,341
9	15,639	544	105	1,354
10	15,797	549	106	1,368
11	15,975	555	107	1,383
Total	152,482	5,300	1,020	13,204

Figure Appendix–11: Marginal applicants needing to acquire birth certificates (thousands)

Year	Primary	Low	High
1	-	-	-
2	786.4	613	1,725
3	4,987.9	2,234	8,708
4	4,166.9	1,921	7,349
5	4,020.9	1,868	7,111
6	3,503.2	1,673	6,256
7	6,047.3	2,655	10,486
8	3,680.8	1,748	6,560
9	3,555.7	1,703	6,357
10	3,110.7	1,535	5,622
11	1,764.7	1,021	3,392
Total	35,624	16,969	63,565

The Department anticipated that if the final regulation required State-*issued* as opposed to State-*verifiable* birth certificates, more DL/ID applicants would need to obtain a birth certificate. However, DHS did not have data indicating what percent of birth certificates currently held have been issued by county or other local governments. If county and other local-government issued birth certificates are verifiable with the State office of vital statistics, they will be acceptable under the final regulation. Under the alternative, they would not be acceptable and people holding this and no other acceptable identity source document would need to obtain a State-issued birth certificate. DHS did not receive any data on this issue.

SSN replacement cards

The final regulation specifies the list of documents acceptable to document an applicant's SSN. In an effort to determine how many applicants will need to seek a replacement SSN card, assuming no other documentation was allowed, the Department calculated the number of SSN cards issued per 1000 new DL/IDs issued by State and difficulty of providing evidence of SSN required by DMVs. The Department then modified that population to account for people who will be able to show either a W-2 or a pay stub containing their SSN.

A minority of States currently require applicants to bring their social security card as evidence of their SSN. The remaining States have widely varying practices regarding what documents are acceptable for this purpose. The list of acceptable SSN documentary evidence of some States requires a relatively higher level of effort on the part of applicants. Such "high effort" documents are either restricted to highly specific sub-sets of the general population (e.g. social security benefit forms, prison release papers, military IDs etc.) or are other government-certified forms (e.g. certified tax returns). Another set of States accepts a list of documents that requires relatively little effort by applicants. These "low effort" documents are typically available to most people age 16+ and often include the following provided that they show the holder's SSN: payroll documents (e.g. pay stubs, W-2's, etc.); uncertified tax returns; medical insurance cards; student records, etc. Finally, slightly more than half of State DMVs do not require any evidence of SSN. Some of these DMVs encourage applicants to bring their social security card but do not require they do so. Others only require that the number be provided on the application. While these States do not require documentary evidence of SSN, they do verify SSN with the SSA. Figure Appendix–12 presents the mean SSN cards issued ratio by category and the number of States in each.

Figure Appendix–12: SSN card issuance statistics[140] [141] [142]

	Mean SSN replacement cards issued per 1,000 new DL/IDs	States with complete data	Standard Deviation	States with the process
Card only	634.94	7	282.6971	8
High effort	904.51	8	656.8459	9
Low effort	487.75	8	323.0212	8
No evidence required	544.85	24	328.1599	26
All States	609.77	47	407.1790	51

State process

DHS considered requirements similar to the seven States that required a SSN card for DL/ID applications. This would require applicants in States where that is not the case to replace their lost or stolen SSN cards. One way to estimate this is to determine the difference between SSN card replacement rates of the card only States and each of the other three categories. That difference should approximate change in the number of replacement cards issued before and after the implementation of such a requirement.

However, due in part to a small number of States that require the SSN card, the variance is too high to ensure a statistically significant difference between most of the means. (See Figure Appendix–13.) Indeed, there is no statistically significant difference at the α = .10 level between the means of States whose DMV's require a SSN card and those who do not. Nor is there a statistically significant difference between the means of States who require some form of documentation and those who do not. However, if the "high effort" and "card only" States are grouped and are compared to the "low effort" and "no evidence" States, there is a statistically significant difference between the means at the α = .10 level. The difference of replacement cards in a State before and after implementing REAL ID's SSN evidence requirement should be similar to the difference between the means of the two categories: 1) card only and high effort States, and; 2) low effort and no evidence States. The difference between those means is 248.1 issuances per 1,000 new DL/IDs.

Figure Appendix–13: Difference between SSN card issuance rates

	Mean SSN replacement card rate	Standard deviation	Count	P-value (one sided)*	F-test (two sided)	Difference between rates
SSN cards only	634.94	282.70	7	0.40961	0.30004	—
(other than SSN card only)	605.36	427.93	40			
Card only and high effort	778.71	518.99	15	0.05225	0.02697	248.14
Low effort and no evidence	530.58	322.63	32			
Some evidence required	677.51	474.01	23	0.13668	0.08661	—
No evidence required	544.85	328.16	24			

DMV SSN evidence

[140] SSN card issuance data for FY2005 provided by the U.S. Social Security Administration directly to the U.S. Department of Homeland Security.
[141] New DL/ID issuance data from the first AAMVA survey of 2006.
[142] SSN evidence requirements obtained from State DMV websites. Accessed Jun 26, 2006.

Subtracting the mean of "low effort" and "no evidence" States from the mean of "card only" and "high effort" States (see Figure Appendix–13) produces the estimated number of initial DL/ID applicants per 1,000 that would need to obtain a replacement SSN card if SSN cards were the only acceptable evidence of SSN. DHS multiplied this ratio by the sum of people in "low effort" and "no evidence" States to estimate that 59.2 million people are without ready access to their SSN card and are living in States with "low effort" or "no evidence" jurisdictions. Each of these people would need a replacement SSN card due to the REAL ID rule if SSN cards were the only acceptable SSN documentation. (See Figure Appendix–14.)

Figure Appendix–14: Applicants seeking SSN replacement cards

Year	Initial applications in State with "low" effort (thousands)	Difference in SSN card issuance rate (low vs. high effort)	Total people without SSN card (thousands)	NPRM Total without card or W-2, thousands (without W2 =34%)	FINAL RULE ASSUMPTION FOR Total without card or W-2, thousands (10% of NPRM value)
1	-	248.14	-	-	-
2	40,040	248.14	9,935	3,378	338
3	34,733	248.14	8,618	2,930	293
4	36,725	248.14	9,113	3,098	310
5	35,565	248.14	8,825	3,001	300
6	25,788	248.14	6,399	2,176	218
7	13,849	248.14	3,436	1,168	117
8	14,007	248.14	3,476	1,182	118
9	14,168	248.14	3,516	1,195	120
10	14,332	248.14	3,556	1,209	121
11	9,482	248.14	2,353	800	80
Total			59,227	20,137	2,014

DHS is allowing a W-2 or a pay stub as alternate evidence of SSN. Adjusting the estimate of people without SSN cards in these States by those who have ready access to a W-2 or a pay stub containing their SSN yields an estimate of how many DL/ID applicants will need to obtain a replacement SSN card under the DHS final rule. From the period of November 2003 through November 2004, labor force participation rates ranged from 65.9 to 66.2 percent.[143] Each person participating in the labor force should have access to a pay stub and/or a W-2. (DHS recognizes that many employers do not include SSN on the pay stub as a measure to protect personal information. However, all W-2 forms contain the employees SSN.) If the working and non-working populations have access to their SSN cards at the same rate, then approximately 20.1 million people live in a "low effort" or "no evidence" State and will have neither a W-2 from the most recent calendar year nor a SSN card.

DHS acknowledges two weaknesses of this methodology to estimate SSN card replacements. First, there may be basic differences between the populations being compared. Those who worked and those whose did not work may not have the same likelihood of having access to their

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[143] U.S. Bureau of Economic Analysis. *Table D.1 Domestic Perspectives*. Jan 2005. Available at <http://www.bea.gov/bea/ARTICLES/2005/01January/D-Pages/0105DpgD.pdf>. Accessed Oct 11, 2006.

SSN card (e.g. SSN cards may be used for employment eligibility on the I-9 form whereas a non-worker may not have needed to replace a lost/stolen card). Further, while similar, the resident population age 16+ is not the same as the DL/ID population. This analysis assumes that labor participation rates in the DL/ID population are the same as those in the resident population age 16+. Second, the regulation implicitly acknowledges that some people may have worked at some point in their life, but not in the previous year; it does not require the W-2 be from the most recent tax year. Accordingly, the lifetime labor participation rate is higher than the rate for any one given year. This analysis only considers those who held employment in the most recent tax year. While acknowledging these assumptions, the Department did not receive comments or data that would permit refinement of this estimate.

Several adjustments to the methodology discussed above have been made in the final analysis. Previously, current labor force participation rates were used to measure the number of individuals who needed to obtain a social security number. However, this means that substitute documents (to the social security card) needed to be current when in fact, they were not needed. In other words, this resulted in an overestimate of the number of times that individuals had to contact the Social Security Administration.

Neither the proposed rule nor the final rule requires that a W-2 form, pay stub, or any other acceptable document be current and therefore as long as the individual can present this evidence, regardless of the age of the document, then the substitute is acceptable.

DHS believes that most if nearly everyone can provide a substitute document but suspects that in rare instances, an individual may have to contact the Social Security Administration. Because we believe that the added burden is exceedingly small, DHS is assuming that an additional adjustment factor of 90 percent (that is 10 percent of 19.3 million or 1.93 million individuals annually) will need to contact the Social Security Administration and obtain a social security card as a result of this final rule.

APPENDIX C: CURRENT VERIFICATIONS

SAVE

In 2005, DMVs ran 1.12 million initial SAVE verifications. (See Figure Appendix–15.) The weighted average of verifications as a percent of issuances was 0.24 percent for States that verified some, but not all, aliens for the entire year and 5.60 percent for States that verified all aliens for the entire year.

Most States use SAVE to verify questionable documents and applications. The limited use of SAVE in these situations is evidenced by the SAVE verifications as a percent of DL/IDs issued. The range of percents is well below the 2000 US Census estimate of foreign-born people as a percent of the total population. Their range of SAVE verifications as a percent of DL/ID issuances is also well below the US Census estimate of foreign-born people as a percent of the total population.

Figure Appendix–15: Total DMV SAVE usage in 2005[144] [145]

Category	Number of initial verifications	SAVE verifications as percent of issuances		
		Weighted mean	Low	High
States verifying all aliens' status	1,070,224	5.60%	1.42%	6.74%
States verifying some aliens for the entire year	34,632	0.24%	0.13%	0.35%
States not using SAVE for the entire year	18,051			
Total SAVE verifications	**1,122,907**	**1.365%**		
Foreign-born citizens as percent of total population (2004)				12.00%

Closer examination of States using SAVE to verify all foreign-born applicants' lawful status also shows high variance. Figure Appendix–16 shows the wide range in the ratio of verification percentages in such States. This indicates that foreign-born people do not consistently apply for DL/IDs at the same rate as native people. (The ratio may correspond to the nature of the transportation infrastructure within a State, as well as population densities. Note that Wyoming's ratio is considerably higher than California's ratio.)

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[144] Verification data from USCIS-SAVE program office.
[145] Foreign-born data from U.S. Census Bureau. American Fact Finder. Data for 2004. Available at <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed May 3, 2006.

Figure Appendix–16: Ratio of initial SAVE verifications to foreign-born population, select States

State	Initial verifications as % of issuances (2005) [146]	Foreign-born as % of State population (2004) [147]	Ratio of verifications % to foreign-born %
California	6.23%	26.78%	0.233
Florida	6.74%	17.92%	0.376
Maryland	1.42%	10.98%	0.130
Indiana	2.07%	3.92%	0.529
Wyoming	2.08%	2.95%	0.705
Mean			0.394
Variance			0.0527
Standard deviation			0.2296
Weighted mean			**5.60%**

The SAVE program office reports that, historically, 20 percent of all initial verifications require a secondary verification. However, their program data specific to DMV usage indicates that 14.2 percent of initial verifications run by DMVs require the secondary verification. (See Figure Appendix–17.) The State is not charged a fee if it sends the information for the secondary verification by mail or fax. If it sends the information electronically, SAVE assesses a fee of $0.48. SAVE also reports that it costs, on average, $6 to $7 for them to process the secondary verification. This cost is not passed to users.

Figure Appendix–17: Secondary SAVE verification data[148]

Item	Data
Rate of secondary verifications, overall historic	20%
Rate of secondary verifications, States verifying all aliens in 2005	14.2%
Manual transmission charge	None
Automated transmission charge	$0.48
Average labor cost to SAVE per verification	$6 - 7

SSOLV

Currently, 39 of the responding 44 States, accounting for 92.66 percent of the responding State DL/ID population, verify social security numbers with the Social Security Administration. (See Figure Appendix–18.) Of these States, 25 only use the real-time method of verification and the 14 remaining States use a combination of real-time and batch or batch only methods.

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[146] Verification data from USCIS-SAVE program office.
[147] Foreign-born data from U.S. Census Bureau. American Fact Finder. Data for 2004. Available at <http://factfinder.census.gov/home/saff/main.html?_lang=en>. Accessed May 3, 2006.
[148] Meeting with USCIS-SAVE Program Office. DHS headquarters. Washington, DC. Apr 27, 2006.

Figure Appendix–18: SSOLV current usage data[149]

Category	Number of States	Percent	Weight
Verifies SSN	39	92.66%	Existing DL/IDs
Does not verify SSN	5	7.34%	Existing DL/IDs
Uses batch method *	14	59.26%	DL/IDs in States specifying method
Only uses real-time method *	25	45.74%	DL/IDs in States specifying method
No response	7		
% of verifications needing resolution, low	1	3%	None
% of verifications needing resolution, high	1	5%	None

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[149] Data from AAMVA. First survey of 2006.

APPENDIX D: HOURLY COST OF COMPENSATION

DHS used base wages and benefits as the value of time to estimate the cost of the rule. This is the case whether the individual is "on the clock" (e.g. employee training) or must spend their own personal time to complete tasks (e.g. obtaining source documents). All hourly rates and indices are provided by the U.S. Bureau of Labor Statistics (BLS), unless otherwise noted. In some cases, BLS provides employers' total cost of compensation for occupations that DHS believes are roughly equivalent to those in the analysis. Figure Appendix–19 provides those occupations and rates.

Figure Appendix–19: BLS provided cost of compensation

Employee	Total cost of compensation	Wages and salaries	Period	Series	Source
DMV counter agents and DMV clerical staff	$ 24.92	$ 15.60	2005Q4	Office and administrative support occupations, State and local government [CMU3010000220000D, CMU3010000220000P]	U.S. Bureau of Labor Statistics. Employer Cost for Employee Compensation available at <http://data.bls.gov/PDQ/outside.jsp?survey=cm>. Accessed Apr 11, 2006.
DMV managers	$ 44.51	$ 31.69	2005Q4	Management, professional, and related occupations State and local government [CMU3010000100000D, CMU3010000100000P].	U.S. Bureau of Labor Statistics. Employer Cost for Employee Compensation available at <http://data.bls.gov/PDQ/outside.jsp?survey=cm>. Accessed Apr 11, 2006.
All workers	$ 26.46	$ 18.59	2005Q4	All occupations, All Civilian [CMU1010000000000D, CMU1010000000000P (c)]	U.S. Bureau of Labor Statistics. Employer Cost for Employee Compensation available at <http://data.bls.gov/PDQ/outside.jsp?survey=cm>. Accessed Apr 12, 2006.

In other instances, the Employer Cost for Employee Compensation tables do not provide the desired granularity. In those cases, DHS computed the fully loaded wage by multiplying the simple hourly wage by the fringe multiplier and inflated according to the employment cost index (ECI). Figure Appendix–20 shows those calculations.

Figure Appendix–20: Calculated fully loaded wage rates

Occupation	Simple wage	Fringe multiplier	ECI multiplier	Wages and benefits
Airline ticket counter agent	$ 16.02	1.380	1.038	$ 22.95
Airport checkpoint staff	$ 15.22	1.423	1.039	$ 22.50
Attorney	$ 46.83	1.391	1.045	$ 68.07
Technical DL/ID expert	$ 28.85	1.391	1.000	$ 40.13
FPS agent	$ 10.91	1.423	1.039	$ 16.13

BLS reports the average wage rates shown in Figure Appendix–21. DHS was unable to determine a specific standard occupational classification (SOC) number for technical experts working for State DMVs. DHS based its annual hourly estimate for these workers upon an estimated annual salary.

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Figure Appendix–21: Simple (unloaded) hourly wage rates[150]

	Airline counter agent	Airport checkpoint staff	State attorneys	Technical DL/ID expert
Series:	Scheduled air service ticket agents	Protective service occupations	Lawyers	*
Source:	U.S. Bureau of Labor Statistics	U.S. Bureau of Labor Statistics	U.S. Bureau of Labor Statistics	*
SOC:	43-4181	33-9099	23-1011	*
Year:	2004	2004	2004	2006
Period:	Nov	Nov	Nov	Mar
Measure:	Mean	Mean	Median	*
Simple wage:	$16.02	$15.22	$46.83	$28.85

* Based on an estimated $60,000 annual salary.

Figure Appendix–22 shows the fringe multiplier and the fully loaded and simple wage rates of occupations that DHS believes are analogous to those in Figure Appendix–20 above.

Figure Appendix–22: Fringe multiplier calculation

	Airline ticket counter agent	Airport checkpoint staff and FPS agents	Attorney and DL/ID technical expert	Office and administrative support, state and local government
Real ID occupation analogue:				
Source:	BLS Employer Cost for Employee Compensation	BLS Employer Cost for Employee Compensation	BLS Employer Cost for Employee Compensation	BLS Employer Cost for Employee Compensation
Series ID:	CMU2010000200000D, CMU2010000200000P	CMU1010000000000D, CMU1010000000000P (c)	CMU3010000120000D, CMU3010000120000P	CMU3010000220000D, CMU3010000220000P
Compensation component:	Total compensation	Total compensation	Total compensation	Total compensation
Employer/Employee Characteristics:	Sales and office occupations	All occupations	Professional and related occupations	Office and administrative support occupations
Sector:	Private industry	All civilian	State and local government	State and local government
Year:	2005	2005	2005	2005
Period:	QTR 4	QTR 4	QTR 4	QTR 4
Cost of compensation (per hour worked):	$ 19.61	$ 26.46	$ 44.32	$ 24.92
Percent of total compensation:	100%	100%	100%	100%
Source:	BLS Employer Cost for Employee Compensation	BLS Employer Cost for Employee Compensation	BLS Employer Cost for Employee Compensation	BLS Employer Cost for Employee Compensation
Series ID:	CMU2020000200000D, CMU2020000200000P	CMU1020000000000D, CMU1020000000000P (C)	CMU3020000120000D, CMU3020000120000P	CMU3020000220000D, CMU3020000220000P
Compensation component:	Wages and salaries	Wages and salaries	Wages and salaries	Wages and salaries
Employer/Employee Characteristics:	Sales and office occupations	All occupations	Professional and related occupations	Office and administrative support occupations
Sector:	Private industry	All civilian	State and local government	State and local government
Year:	2005	2005	2005	2005
Period:	QTR 4	QTR 4	QTR 4	QTR 4
Cost of compensation (per hour worked):	$ 14.21	$ 18.59	$ 31.87	$ 15.60
Percent of total compensation:	72.5%	70.2%	71.9%	62.6%
Fringe multiplier:	**1.380**	**1.423**	**1.391**	**1.597**

Figure Appendix–23 calculates the percent increase in the simple wage from January, 2005 to March, 2006. This is used in Figure Appendix–20 above to inflate the November, 2004 simple wages to 2006 dollars.

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[150] U.S. Bureau of Labor Statistics. *November 2004 National Occupational Employment and Wage Estimates.* Available at: <http://www.bls.gov/oes/current/oes_nat.htm>. Accessed May 11, 2006.

Figure Appendix–23: Employment Cost Index

Change period (months):	Office and administrative support				All civilian			
	Private industry		All civilian		All workers		Professional and related	
	12	3	12	3	12	3	12	3
Ending	Dec-05	Mar-06	Dec-05	Mar-06	Dec-05	Mar-06	Dec-05	Mar-06
Percent change:	2.9%	0.9%	3.0%	0.9%	3.1%	0.8%	3.8%	0.7%
Calculated 15 month change:	3.83%		3.93%		3.92%		4.53%	

APPENDIX E: DISCUSSION OF OPPORTUNITY COSTS

The concept of "opportunity cost" is a fundamental concept in modern economics and serves as an important measure of the value of goods, services and other economic concepts for consumers. The opportunity cost of a good or service is the next best alternative that is foregone when the chosen good or service is acquired or consumed. This concept can be applied broadly to other consumer activities, such as the use of another scarce resource, time. DHS did not receive any public comments regarding recent research on the value of time and how surveys on the willingness to pay for security might be considered in selecting an appropriate economic opportunity cost value.

Modern conceptions of the value of time are often traced back to a seminal 1965 paper by future Nobel laureate economist Gary Becker, *A Theory of the Allocation of Time*. In this paper, Becker postulates that for individuals and households, time is often an essential input, along with specific consumer goods, for activities that are fundamental to human satisfaction, such as sleep or leisure activities. In addition, to acquire the real resources that make these satisfying activities possible, consumers and households must also allocate time to productive activities that result in income or other sources of value that can be used to obtain other desired goods. Becker then goes on to characterize the use and value of time by individuals in such activities as leisure and travel. Because such time is spent enjoyably but not "productively" in the sense that no income is obtained, at the margin the value of a unit of time is the amount that using that time productively could earn – the individual's wage rate.

Subsequent work in economic analysis and policy analysis has extended these insights toward specific applications in the valuation of leisure activities at State parks and other public facilities, the valuation of travel infrastructure improvements that allow travelers to complete journeys more rapidly and efficiently, and the valuation of time delays and expenditures that are imposed on travelers or others by transportation system inefficiencies or other travel related obligations, such as waiting in line. While these benefits and costs for leisure seekers and travelers can be measured using national or regional average wage rates, in many cases analysts are also interested in understanding how variability in wage rates and in time valuation affect the benefits and costs that may be associated with changes in travel or transportation system characteristics.

A.   INTRODUCTION

A fundamental concept in modern economics, especially the theory of consumer choice, is the notion of "opportunity cost." For any good or service that may be acquired by a consumer, its opportunity cost is the next best alternative that is foregone. While a consumer certainly gives up money to purchase a good or service, the consumer also gives up the opportunity to spend those resources to acquire some other affordable good or service – the good or service most valued by not acquired can be viewed as the opportunity cost of the chosen purchase.

Similar reasoning can be applied to analyze the choices made when people allocate another scarce resource – time – to alternate uses. People will always have to allocate some portions of

their time to productive or remunerative activities and to necessary biological functions like sleep. However, individuals also have some discretion about the ways in which these requirements and the pleasures of discretionary time are allocated. In this setting, the concept of opportunity cost is also a fitting tool for characterizing the individual's choice between alternative uses of available time.

The objective of this paper is to clarify and provide some background for the treatment of the opportunity cost of time in analyses of the transportation industry. In the transportation industry, time actually devoted to traveling is one of the larger costs faced by a traveler. Because of this, travel time savings can provide significant benefits. For this reason, much emphasis is placed on methodologies for calculating the value of passenger time. In these analyses, the opportunity cost of time spent traveling is based on the forgone possibility of spending time at work or leisure. Because the time spent traveling is affected by possible unpleasant conditions of travel such as waiting, crowding, lack of comfort and delay, there are a variety of ways in which changes to travel circumstances can be analyzed using the opportunity cost of time approach. Some of the variables that affect the value of passenger time are the mode of transportation, purpose of transportation (work or personal), travelers' income and distance traveled. Consideration of these and other variables affecting value of travel time calculations, as well as the methodological background for opportunity cost analyses of time allocations, are presented in the following sections.

The motivation behind this literature review and methodological recommendation is TSA's need to have a reliable foundation for its treatment of the opportunity costs of time expenditure, since many of its regulations lead to modest but real time requirements for sizeable numbers of individuals. These time impositions may take the form of applications or data collection necessary to complete newly required documents or registration, or may involve waiting or delay that is incurred in the course of transportation security screening or monitoring. To accurately model and account for these types of costs that are imposed on individuals, it is necessary to use average values for time or opportunity costs and measures of the variability of such costs across individuals. Advances in processing software and data reporting have made consideration of opportunity cost variability more manageable and hence more easily documented for decision makers. These new data reporting and analysis possibilities only increase the importance of a solid basis for calculations and analysis that includes time opportunity costs considerations.

B.   LITERATURE REVIEW

1. "A Theory of the Allocation of Time" by Gary S. Becker[151]

One of the most influential early works addressing the value of time in consumer decision problems is the Nobel laureate Gary Becker's 1965[152] study, "A Theory of the Allocation of Time". Becker attempts to develop a general treatment of the allocation of time in non-work related activities. The author's starting point is the then traditional theory in which a

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[151] Gary S. Becker. "A Theory of the Allocation of Time". The Economic Journal, Vol. 75, No. 299 (Sep., 1965).
[152] Gary S. Becker. "A Theory of the Allocation of Time". The Economic Journal, Vol. 75, No. 299 (Sep., 1965) , pp. 493-517

household's utility is a function of goods purchased on the market and is subject to a resource constraint (income). Becker's innovation is to incorporate non-working time into this framework by assuming that households combine time and market goods to produce more basic commodities that are also part of the household's utility function.   One such commodity, for example, is sleeping where inputs are a house, a bed, and time, while another might be a leisure activity such as exercise, which requires a commitment of time and access to necessary equipment These commodities (Z_i) can be symbolized as:

$$Z_i = f_i (x_i, T_i)   [1]$$

where x_i is a vector of market goods and T_i a vector of time inputs used in producing the ith commodity Z_i.

"In this formulation households are both producing units and utility maximizers. They combine time and market goods via the "production functions" f_i to produce the basic commodities Z_i and they choose the best combination of these commodities in the conventional way by maximizing a utility function

$$U = U(Z_i, ...Z_m) \equiv U(f_1,...f_m) \equiv U(x_1,...x_m; T_1,...T_m)   [2]$$

subject to a budget constraint

$$g(Z_i,...Z_m) = Z [3]$$

where g is an expenditure function of Z_i and Z is the bound on resources."[153] Assuming that the utility function above is maximized subject to separate constraints on the expenditure of market goods and time, and to the production function [1], the goods constraint is subject to constraints on time as well as income. It is recognized that time can be converted into goods by using less time at consumption and more at work, and in this setting the full price of any item is the sum of the prices of the goods and the time used per unit.

To make this point more apparent, Becker introduces the concept of *full income*, a sum of money income and income forgone by the use of time and goods to obtain utility. The total marginal cost of a commodity is the sum of the marginal cost of using goods in producing the commodity and the marginal cost of using time. The rest of Becker's paper develops implications of this theory, with a section dedicated to transportation.

This method for estimating the value of time in transportation related analyses is important because in most transportation settings, such as changes in transportation mode, the value of time-savings has tended to surpass other benefits.   In these analyses, Becker notes that the methodology for determining value of time varies from the simple assumption that the value of an hour equals average hourly earnings to more complex considerations of the distinction between standard and overtime hours, the internal and external margins, etc.

One way Becker uses to tackle the value of time problem in transportation is to compare the ratio of the number of persons traveling by airplane to those traveling by slower mediums. More people tend to use faster mediums for longer distances (presumably due to greater importance of the savings in time) so marginal value of time could be estimated from the relation between medium and distance traveled. The length and mode of commuting to work is another extensively studied area of transportation. It is usually assumed that the direct commuting costs (train fare, for example) vary positively while living costs (space) vary negatively with the

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[153] Gary S. Becker. "A Theory of the Allocation of Time". The Economic Journal, Vol. 75, No. 299 (Sep., 1965) , pp.495-496.

distance commuted. Therefore, a rise in income would cause a longer commute if space is a superior good. However, a rise in income resulting at least partially from the rise in earnings would increase the cost of commuting a certain distance because the opportunity cost of time would increase. "This increase in commuting costs would discourage commuting in the same way that the increased demand for space would encourage it. The outcome depends on the relative strengths of these conflicting forces: one can show with a few assumptions that the distance commuted would increase as income increased if, and only if, space had an income elasticity greater than unity."[154]

In conclusion, Becker States that forgone earnings (primarily determined by the use of time) are important and that full income is substantially above money income and therefore, more attention should be paid to the efficiency and allocation of the use of time. In later years, the transportation-related applications of Becker's insights into the role of time in human choice behavior has included both the value of time as a factor in household transportation choices and the effective benefits or costs to passengers of changes, positive and negative, respectively, to the total time commitment required by specific transportation choices.

2. "Time is Money: a Re-Assessment of the Passenger Social Savings from Victoria British Railways" by Timothy Leunig[155]

A recent study by Leunig (2005) estimates passenger railway social savings for England and Wales. Though the study does not focus on time saved in aviation it is still useful because it provides a clear application of a methodology for valuing time saved. In this study, it is assumed that the value of time saved during work hours equals the gross wage rate plus overhead costs. The author argues that the wages used should depend on the type of transport used and he differentiates between premium class travelers (first and second class travel) and third class travelers. Third class travelers are assumed to be typical members of the working class making standard working class wages while the premium class travelers were assumed to be more affluent.

Leunig also addresses the difference in value for time savings of people traveling during work time and people traveling during personal time. The author concludes that "those traveling on business should have their time proxied by wage costs, whereas those who were traveling on their own time should have their time valued at 46% of their take home wages if the time saved would otherwise have been spent in a train or carriage, and at 92% of wages if the time saved would otherwise have been spent walking."[156] The value of 46 percent is a standard value recommended by British Department of Transport in 2004.

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[154] Gary S. Becker. "A Theory of the Allocation of Time". The Economic Journal, Vol. 75, No. 299 (Sep., 1965) , pp. 511.
[155] Leunig, T. (2005). Time is money: a re-assessment of the passenger social savings from Victoria British Railways [online]. London: LSE Research Online. Available at : http://eprints.lse.ac.uk/archive/00000537
[156] Ibid p.30

3. **"The Economic Value of Hiking: Further Considerations of Opportunity Cost of Time in Recreational Demand Models" by James F. Casey, Tomislav Vukina and Lean E. Danielson[157]**

Another approach to valuing time is to take into consideration the benefits of spending it in a recreational activity. In "The Economic Value of Hiking: Further Considerations of Opportunity Cost of Time in Recreational Demand Models", Casey et al. (1995) compare the contingent valuation method of valuing opportunity cost of time and a standard travel cost method based on a percentage of wage-rate. Central to their approach is the inclusion of a contingent valuation type question about hiker's willingness to accept compensation to forgo a precisely defined recreational experience. The data needed for contingent valuation is collected through a survey that includes the following question: *"If someone offered you an opportunity to work overtime instead of visiting Grandfather Mountain, at what hourly rate would they have to pay you for you to accept the offer?"*

The study area for the contingent valuation is Grandfather Mountain Wilderness Preserve (GMWP), a thirty-mile network of alpine hiking trails. Names and addresses of GMWP visitors (from October 1993 through June 1994) were obtained from hiking permits and then a survey was mailed to 453 households. Of these, only 42 surveys were returned completed and usable. "For the group of single purpose visitors the average revealed value of individual hiker's time was $46.83 an hour, while the average calculated wage rate equals $26.27 an hour".[158] The study proceeds to compare the results of a standard wage rate model to those of the revealed value of time model. "The estimated results seem to suggest that the demand for recreation (hiking trips) is more appropriately specified by using a contingent valuation type of question for the value of time variable than by using the more traditional hourly earnings. Model 2 (revealed value of time) outperforms Model 1 (wage rate) in terms of higher adjusted R2, and the revealed value of time variable is more significant than the wage earnings variable".[159]

The estimation results of the two models were used to calculate the aggregate consumer surplus derived by all participating hikers for the observed time period (1,700 hiker permits were sold for 1993-1994, each permit was used by hiking groups that on average included 2.6 single purpose individuals). Thus estimated consumer surplus based on the two different value of time measurements vary significantly: $5,332,730 for the wage cost model and $12,786,176 for the revealed value of time cost model, illustrating the importance (and difficulty) of finding the most suitable methodology for measuring the opportunity cost of time.

4. **"Searching for the Opportunity Cost of an Individual's Time" by W. Douglass Shaw[160]**

W. Douglass Shaw (1992) study, "Searching for the Opportunity Cost of an Individual's Time", addresses why a method for estimating the value of time that is based on the wage-rate may be

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[157] James F. Casey, Tomislav Vukina and Lean E. Danielson. "The Economic Value of Hiking: Further Considerations of Opportunity Cost of Time in Recreational Demand Models" Journal of Agricultural and Applied Economics 27 (2), December, 1995: 658-668

[158] Ibid p.662.

[159] Ibid p.662.

[160] W. Douglass Shaw. "Searching for the Opportunity Cost of an Individual's Time", Land Economics. February 1992: p.107-115.

flawed for leisure or recreational activities. The wage-based model, as we already know, assumes that the value of individual's leisure time can be measured based on that individual's market wage. This would imply that an individual earning very low market wage puts very low value on leisure time. In actuality, a low wage earner may have a low opportunity cost of time not a low value of time. Further, individuals with low or nonexistent market wage may be unemployed by choice (retired, students, etc.), employed in non-market work, or involuntarily unemployed and each situation may differently affect the opportunity cost of these individuals.

Though it is often ignored in economic literature, the timing of the decision to allocate time may affect the relevant value of time in an activity because individuals may allocate time differently at different times of the year, week, etc. Also, the time spent in an activity may yield consumer surplus at a particular moment (for example, for an individual on a fishing trip, a surplus may occur at the moment he/she catches the "big fish" but this may occur hours after fishing started).

Shaw questions the use of wage rate as a valid measure of the opportunity cost of time because individuals not earning an observable wage rate may have opportunity cost of time considerably higher than some market wage: "Far from having a low opportunity cost of time, unemployed individuals may have much higher time values than employed individuals".[161] Shaw refers to two papers in the recreation demand literature that incorporate separate time constraints for different activities. Separate time constraints are incorporated in order to account for institutional obstacles in scheduling activities. For example, most jobs are only offered on a full-time basic conventional work week basis (Monday-Friday) and separate time constraint methods allows "estimation of the opportunity cost of time for those that are at corner solutions, with implications that these opportunity costs of time are much higher than the average wage rate of those in their sample who were employed".[162]

Shaw ends his paper with several suggestions for more accurately assessing the time costs for the individual:
a. Assumptions made in a model of consumer behavior should reflect the nature of activity being modeled in order to avoid incorrect assignments of time costs to individuals. For example, outdoor activities differ significantly so deciding what arguments to include in the individuals' utility or production function should also differ accordingly. For example, the intensity of doing a very difficult climb, as opposed to the number of climbs completed, may be the preferred argument in the utility function of a rock climber.

b. Surveys designed to collect empirical data may elicit answers to questions about unemployment status that would prove more useful at estimating individuals' opportunity cost of time. For example, if an individual is unemployed, questions about household (not just individual) income could be used in estimating that individual's opportunity cost of time. Also, asking an unemployed individual about what would he/she choose to do instead of the activity in question could be useful: if an individual would choose to be home gardening, for example, than the going wage of a gardener could be used as the opportunity cost of time.

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[161] Ibid, p.111
[162] Ibid, p.112

c. Survey questions could directly ask the individuals completing the survey to State their opportunity cost of time (as was done in previously described study by Casey et al. (1995)). "Questions might include what an individual would pay (WTP) to engage in the activity in question for another hour or alternatively, individuals could be asked how much they would need to be compensated (WTA) if they were doing their next best alternative activity, instead of the activity in which they are engaged".[163] It is imperative that survey questions be formulated in a way that would minimize or eliminate bias.

d. Multiple constraint solutions should be attempted making sure that activities are carefully defined so that costs of time in an activity do not become arbitrary.

e. When other means are not possible, some sensitivity analysis calculations of the consumer surplus should be conducted. The opportunity cost of time could be a range from a fraction of the wage rate to two or three times the wage rate (some individuals participating in a leisure activity have given up the opportunity to earn double overtime in their market job). Others may prefer to engage in non-market work (lawn care, housecleaning, child care, etc.) and the value of this time might be proxied by cost of hiring someone else to do this work.

f. Finally, it might be useful to try to better understand the timing of the decision process and the stability of the opportunity cost over time. This could be accomplished by observing the choice of activities in the daily schedule and the timing of recreation time as compared to other activities in the schedule.

5. **"Valuing Time in Travel Cost Demand Analysis: An Empirical Investigation" by John R. McKean, Donn M. Johnson, and Richard G. Walsh[164]**

Empirical valuation of the opportunity cost of time is necessary for better understanding of time allocation among recreation alternatives and/or other activities. Given labor market disequilibrium or certain institutional considerations, time allocation may be more important than time pricing. Economic models often use income rates as a measure of the value of time but people who substitute time for money income at the margin are usually a very small part of the populations. Many workers are not allowed this substitution due to the work contracts and others (like retirees, students and unemployed) are also not exchanging time for income at the margin. The authors of this study use a sample of anglers to contrast a model, which allows some anglers to be in a labor market disequilibrium, with a model which assumes all anglers to be in a labor market equilibrium.

The authors begin with an analysis of previous works by McConnell and Strand (1981, 1983)[165] which assume labor market equilibrium. McConnell and Strand specify number of trips as a function of price:

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[163] Ibid, p.113

[164] McKean, J.R., Johnson, D.M., Walsh, R.G, February 1995. ""Valuing Time in Travel Cost Demand Analysis: An Empirical Investigation", Land Economics 71 (1): 96-105.

[165] McConell, K.E., and I. Strand, 1981. "Measuring the Cost of Time in Recreational Demand Analysis: An Application to Sportfishing." American Journal of Agricultural Economics 63 (1):153-56.

r = f[c + (α) (1-t)g '(w)]

where r is yearly trips, c is out-of-pocket costs per trip, α is travel time per trip, and *(1-t)g'(w)* is the after tax marginal income forgone per unit of time. Marginal foregone income (*g' (w)*) is replaced with average income per hour (*I*) and the equation above is estimated with separate coefficients for out-of-pocket and forgone income time costs:

r = μ0 + μ1c + μ2 (α)(1-t)I

The ratio of μ_2/μ_1 is an estimate of the fraction of income that is foregone while traveling to the site. McConnell and Strand conclude that the opportunity cost of time (for their sample of individuals fishing in the Chesapeake Bay region in 1978) is 61.2 percent of hourly income.

McConnell and Strand (M-S) assume that opportunity value of time is positively related to income and that substitution between work and leisure is unrestricted. However, only earned income should be used when measuring opportunity cost of time. This means that for some people traveling during the weekends or paid vacations income forgone is overStated, while for others who are required to work more than desired in order to keep their job, the earned income rate underStates their opportunity cost of time. Ward (1983, 1989)[166] modifies the M-S assumptions by eliminating the tie of opportunity cost of time to income but retaining the assumption that marginal effects of monetary and opportunity time costs are equal. Ward's work implies that opportunity time cost is independent of travel time per trip.

A study by Bockstael, Strand and Hanemann (B-S-H) (1987)[167] found that money/time tradeoff for individuals with fixed work hours is $60/hour compared to $17/hour for individuals with flexible hours meaning that disequilibrium in labor market may render wage rates ineffective in measuring the opportunity cost of time. The B-S-H model abandons McConell and Strand's link between opportunity time cost and income and shows that, for individuals who can't marginally substitute work for leisure, the time and money constraints cannot be collapsed into one. Money and time costs are thus treated as separate time price variables.

McKean, Johnson, and Walsh (M-J-W) build on the previously described models and use the B-S-H formulation for individuals with a corner solution in the labor market and a conventional formulation for individuals that can easily substitute time and income. Their data was collected through a personal interview survey conducted in Blue Mesa reservoir in Colorado. The survey produced a sample of 200 usable responses. Survey questions were formulated in a way that allowed categorization of individuals as "able or not able to substitute earned income for time". By applying Ward's technique, M-J-W estimate that the opportunity time cost for visitors to Blue Mesa is $11.54/hour. However, if the McConell - Strand methodology is applied to the 200 observations, the opportunity cost of time is 46.1% of income, or $7.47/hour.

Assuming that the opportunity cost of time is constant with respect to travel time per trip is a another potential problem in estimating the opportunity cost of time. The M-S and Ward

_____.1983. "Measuring the Cost of Time in Recreational Demand Analysis: Reply." American Journal of Agricultural Economics 65 (1):172-74.

[166] Ward, Frank. A. 1983. "Measuring the Cost of Time in Recreation Demand Analysis: Comment." American Journal of Agricultural Economics 65(1):167-68.

[167] Bockstael, Nancy E., Ivar E. Strand, and W. Michael Hanemann. 1987. "Time and the Recreational Demand Model." American Journal of Agricultural Economics 69 (2):293-302.

methods both assume that opportunity cost of time is independent of travel time. This assumption was tested and found valid for trips with roundtrip driving time of up to 14 hours. Further, survey participants were categorized as belonging to one of the four groups below:
   a. students, unemployed, retired;
   b. farmers, retail, unskilled blue collar;
   c. skilled blue collar; and
   d. professional or manager.

The analysis of opportunity cost of time in relation to average income for the four categories showed that estimated opportunity time cost did not vary proportionately and positively with average income as is generally assumed. The analysis implied that the retail and unskilled blue-collar workers were more inclined than other groups to spend money rather than time. A possible explanation is that unskilled workers are required to spend more time at work while other groups value their time less because they have more freedom in allocating their time. Therefore, it is very important to account for institutional constrains on time allocation when estimating opportunity time costs.

6. "Investigating the Distribution of the Value of Travel Time Savings" by Morgens Fosgerau[168]

The main drive behind this paper is to investigate the distribution of the value of travel time savings (VTTS) by applying various nonparametric techniques to a large dataset. The data used here come from a recent value of time study undertaken for the Danish Ministry of Transport. Stated preference interviews were conducted but not on business travelers. The interview design provides choices between vehicle travel time and cost for the current trip. Information is also collected regarding what portion of travel time is free-flow and what portion is additional time due to congestion. This was done in order to allow the analyst to control for the different levels of congestion experienced by respondents. The dataset is designed to include the tradeoffs between time and money by having the respondents State whether their VTTS is higher or lower than a bid value.

Thus compiled information allows for nonparametric estimation of the cumulative distribution of the VTTS. It is only possible to estimate the cumulative VTTS distribution function up to the maximum bid, which for the dataset in question corresponds to about 87% quantile of the distribution. It is necessary to know the entire distribution since varying assumptions about the unobserved tail may lead to overestimated mean VTTS.

A nonparametric regression of y (willingness to pay to save time, where $y=1$ when the respondent is not willing to pay to have the fastest alternative) on v (distribution of bid values) is used to estimate the value of time (w) over the range of bids v. The following observations were made about the regression: "First, these is definitely a positive slope, which means that as the bid increases, more respondents decline to pay to save time. Second, Confidence bands are fairly tight, which means that choice probabilities can be addressed with a reasonable degree of accuracy and also the corresponding quantiles of the VTTS distribution. Third, there exists a

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[168] M. Fosgerau. 2006. "Investigating the Distribution of the Value of Travel Time Savings." Transportation ResearchPart B 40: 688-707.

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monotone function within the confidence bands, which is consistent with the estimated function being a cumulative distribution function. Fourth, the distribution can be assumed to tend to zero at zero VTTS – there is no point mass at zero. Fifth, the distribution does, however, not tend to one within the observed range. "[169] The distribution does not approach one because at the largest bid presented there is still a significant number of respondents willing to pay more to save time so the right tail of the distribution is not observed which means that the mean VTTS cannot be estimated.

Sixteen parametric distributions (Normal, Gamma, Uniform, Triangular, Johnson S_B, Johnson S_B1, Beta, Beta1, Lognormal, Loggamma, Loguniform, Logtriangular, Log Johnson S_B, Log Johnson S_B1, Logbeta, Logbeta1) were then compared to the non-parametric distribution using the Zheng (1996)[170] test. All parametric distributions with values below zero were truncated at zero. Gamma, Triangular, Johnson S_B, and Beta are the accepted distributions based on the Zheng test, meaning that they would predict choices well over the observed range of v. However, if it is required that a parametric distribution not have support on the negative half-axis and if truncation at zero is not allowed, than Triangular and Johnson S_B distributions are discarded.

The model was then expanded to include various covariates in a semiparametric model combining some parameterization with nonparametric error. This is accomplished by identifying a model where $log(w)$ is a sum of linear index and an independent error ($log(w) = \beta x + u$), where u is an error that is independent of x, vector of observed variables). Observed variables are: personal income, trip duration, travel time difference between the two alternatives, and share of congestion time. Commuting and education are dummy variables for trip purpose. All parameters are found to be statistically significant at 5% except for the first-order term for age and the dummy for education. The VTTS of females is about 25% lower than that of males; the VTTS increases with the trip duration (0.17 elasticity) and with the size of time savings (elasticity of 0.36); congested time is significant and is valued 52% above free-flow time; the VTTS decreases with age.

The Klein and Spady (1993)[171] estimator was then used to estimate the index parameters. A nonparametric regression of y on the Klein-Spady residuals looks like a cumulative distribution function and since 0 and 1 are within the confidence bands at the ends of the distribution making it possible to compute the mean VTTS. "Among those distributions that are accepted by the Zheng test, the estimated mean VTTS varies between 105.5 and 183.7 DKK/h"[172] (the currency is Danish Kroner: 5.9 DKK = $1[173]). Statistics for the 16 parametric distributions indicate that Lognormal and Johnson S_B1 distributions are two main candidates for the distribution of error u. "The parameter estimates change very little from the semiparametric to the parametric models,

[169] M. Fosgerau. 2006. "Investigating the Distribution of the Value of Travel Time Savings." Transportation ResearchPart B 40. pp.695

[170] Zheng, J.X., 1996. A consistent test of functional form via nonparametric estimation techniques. Journal of Econometrics 75 (2), 263-289.

[171] Klein, R., Spady, R., 1993. An effective semiparametric estimator for binary response models. Econometrica 61 (2), 387-422.

[172] M. Fosgerau. 2006. "Investigating the Distribution of the Value of Travel Time Savings." Transportation Research Part B 40. pp. 705.

[173] Currency calculator provided by http://www.x-rates.com/calculator.html

reinforcing our conclusion that the two parametric distributions provide good approximations to the nonparametric distribution…. With the index from the S_B1 model we finally compute the mean VTTS as above, which yields a value of 89.2 DKK.h. This would be our estimate of the mean VTTS."[174]

C.   INDUSTRY STANDARDS[175]

In order to provide industry standards, Office of the Secretary of Transportation (OST) published the guidance on treatment of value of passenger travel time. This departmental guidance is to be used by Department of Transportation (DOT) when evaluating savings or losses of travel time that result from investment in transportation facilities or regulatory actions.

It is recommended that when evaluating the value of time it should be determined if the trip was undertaken during work hours or during personal time. Value of time on a business trip is generally represented with travelers' before tax wage rates (including fringe benefits) while some fraction of travelers' wage rate is used to estimate the personal time saved. As previously Stated, an important variable in estimating value of time is variation in distance traveled, particularly between local and intercity trips. "Because intercity travel is usually consumed jointly with expensive services such as hotel rooms, restaurant meals, and entertainment, travel time saved is freed for purposes that travelers value highly… Intercity travel is, therefore, likely to be more valuable than time spent in local travel."

OST Guidance recommends that values of time should be calculated as 100 percent of the wage (plus fringe benefits) for all local and intercity business travel, 50 percent of the wage for all local personal travel, and 70 percent of the wage for all intercity personal travel. The following table reports recommended hourly values of time for aviation industry:

Recommended Hourly Values of Travel Time Savings (2000 U.S. dollars per person)		
Category	Recommendation	Sensitivity Range Low High
Air Carrier:		
Personal	$23.30	$20.00
Business	$40.10	$30.00
All Purpose*	$28.60	$32.10
General Aviation:		$48.10
Personal	$31.50	$23.80
Business	$45.00	$35.60

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[174] M. Fosgerau. 2006. "Investigating the Distribution of the Value of Travel Time Savings." Transportation Research Part B 40. pp.706.

[175] Office of the Secretary of Transportation Memorandum. April, 1997. "The Value of Saving Travel Time: Departmental Guidance for Conducting Economic Evaluations." Available at http://ostpxweb.dot.gov/policy/Data/VOT97guid.pdf), and "Revised Departmental Guidance – Valuation of Travel Time in Economic Analysis," Office of the Secretary of Transportation Memorandum, February 11, 2003. http://ostpxweb.dot.gov/policy/

All Purpose	$37.20		
		n.r.	n.r.
		n.r.	n.r.
		n.r.	n.r.

*The all purpose values have increased proportionally less relative to their previous values than the personal and business values because of an increase in the ratio of personal to total travelers.
n.r.: No recommendation
Source: "APO Bulletin APO-03-01–Treatments of Values of Travel Time in Economic Analysis," FAA Office of Aviation Policy and Plans, Mar 2003, and "Revised Departmental Guidance–Valuation of Travel Time in Economic Analysis," Office of the Secretary of Transportation Memorandum, Feb 11, 2003.

D. CONCLUSIONS

The correct estimation of opportunity cost of time is imperative for effective economic decision-making. This is especially true in transportation industry where the benefits of time-savings tend to overshadow all other benefits. Therefore, it is important for decision makers to be aware of new developments and issues that are pertinent to estimating opportunity cost of time. One of the earliest studies that focused on the importance of incorporating time as an input in households' production of basic commodities and utility was done by Becker in 1965. Besides stressing the importance of time as a separate input, Becker also advocated paying more attention to time allocation.

More recently, Leunig (2005) has brought up the importance of transportation mode (air transport vs. rail transport for example) and transportation class (in his study, 1st and 2nd class vs. 3rd class) in estimating value of travel time. Leunig used wage rate as a measurement of value of time and concluded that in rail travel, business travel time should be valued as 100 percent of wage rate. For personal travel, travel time value equals to 46 percent of wage rate if the time saved would have been spent on a train and 92 percent if the time saved would have been spent walking.

Casey, at al. (1995) compare the standard travel cost estimation method (based on wage rate) to revealed value of time model based on contingent valuation methodology. They conclude that revealed value of time model statistically outperforms standard model and results in an estimated value of time of $46.82 per hour. In comparison, the wage rate model implied the value of time to be $26.27.

Shaw (1992) also questioned the wage rate approach. He reminded us that individuals with nonexistent market wages may be unemployed by choice. Separate time constraints were incorporated in order to address issues concerning individuals at corner solutions. For example, opportunity cost of time may be underStated for the individuals that are required to work a fixed number of hours if they would rather allocate some of that time to non-work related activities. Continuing with this idea, McKean, Johnson and Walsh (1995) stress the importance of differentiating between those who can and those who cannot freely allocate their time. They conclude that individuals with less freedom to make such a choice may value their time more

highly even if their earnings are lower that those of the individuals with more control over time-allocation.

However, the values of time that should be used when conducting economic evaluations are to be found in the U.S. Department of Transportation's guidance, "The Value of Saving Travel Time: Departmental Guidance for Conducting Economic Evaluations". These values are based on hourly wage rate or some fraction of a wage rate depending on purpose of the trip and distance traveled. An important advantage of using the Departmental guidance is that values of time are estimated using industry averages and pertain to the entire country as opposed to focusing only on a unique geographic location or on a sample of individuals that may not be representative of the entire country and its population. Nevertheless, the variety of methodologies and assumptions regarding the value of time estimations is an indicator of the importance placed on questioning and improving standard methods for measuring the value of time. While the results of the studies reviewed in this document may not be applicable in most cases because their scope is restricted (geographically, demographically, etc.), the issues raised by these studies regarding methodologies and assumptions should be kept in mind when estimating value of time savings.

Finally, the key feature these studies share—their scope (and methodology) incorporates not only geographic- and demographic-specific data elements but also includes the need to develop the purposeful intent (business vs. personal) of the actors. The table below provides an easy way to compare the models relative purposeful intent, as well as other characteristics.

Model	Characteristics	Estimates
Leunig (2005)	• Explicitly recognizes wage differentials between occupational categories. • Business hour more valuable than personal travel. • Wage rate equals gross wage rate plus fringe.	• Work-related travel valued at 100% of wage rate. • Nonwork-related travel valued at 46% of wage rate. • UK Dept. of Trans. standard is 46% of wage rate.
Casey (1995)	• Applies contingent valuation method, (revealed value). • A "recreational" model based on survey data at Grandfather Mountain Wilderness Preserve. • Found higher value place on leisure than wage rate (dis-utility of labor).	• Estimated value $46.82 v. $26.27 based on wage rate model.
Shaw (1992)	• Attempts to address non-working (no wage rate) actors. • Suggests unemployed may have high opportunity cost. • Nature of activity important, recreation more highly valued (dis-utility of labor).	• No estimate suggests surveys to develop willingness to pay (WTP) and willingness to accept (WTA) estimates. • Use of proxy estimates to value the cost of forgone activity for the unemployed.
McKean (1995)	• Attempts to address actors who cannot freely allocate time. • Suggests these actors may have high opportunity cost. • Nature of activity important (dis-utility of labor). • A "recreational" model based on survey data at the Chesapeake Bay.	• Estimated value is 61% of average income per hour.
USDOT	• Explicitly recognizes modal differences. • Business hour more valuable than personal travel. • Wage rate equals gross wage rate plus fringe.	• Air Carrier: Personal, $23.30; Business, $40.10; All Purpose, $28.60. • General Aviation: Personal, $31.50; Business, $45.00; All Purpose, $37.20.

APPENDIX F: MARGINAL TIME ESTIMATES FOR APPLICATIONS

DHS established estimates for the increase in time to prepare, file and process DL/ID applications under the final rule. Figure Appendix–24 is a graphical representation of the primary assumptions used for applicants (found in Figure Appendix–25).

Figure Appendix–24: Marginal time spent by applicants, primary estimate
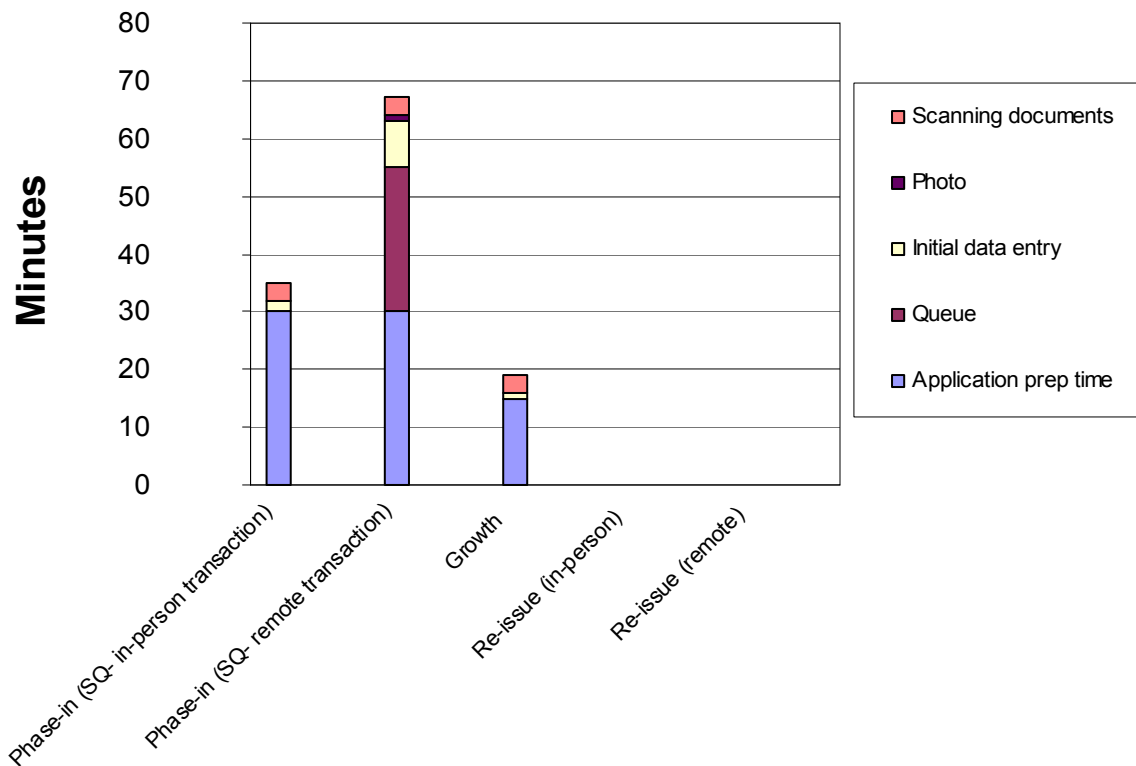
Transaction type	Enrollment(SQ-in-person transaction)		Enrollment (SQ- remote transaction)		Growth		Re-issue (in-person)		Re-issue (remote)	
Applicants										
Application prep time	30		30		15		0		0	
(Low High)	15	45	15	45	10	20	0	0	0	0
Queue [a][b]	0		25.8		0		0		■	■
(Low High)	0	0	10	41	0	0	0	0	■	■
Applicants and DMV labor										
Initial data entry	2		8		1		■	■	■	■
(Low High)	1	3	7	9	0	2	■	■	■	■
Data retrieval and/or modifications	■	■	■	■	■	■	0		0	
(Low High)	■	■	■	■	■	■	0	0	0	0
Photo [a]	0		1		0		0		■	■
(Low High)	0	0	0.5	2	0	0	0	0	■	■
Scanning documents	3		3		3		■	■	■	■
(Low High)	2	4	2	4	2	4	■	■	■	■
Verifications [c]	0		0		0		0		0	
(Low High)	0	2	0	2	0	2	0	2	0	2
Total marginal increase for DMV (Primary)	**5**		**12**		**4**		**0**		■	■
(Low High)	3	9	9.5	17	2	8	0	2	■	■
Total marginal increase for applicant (Primary)	**35**		**68**		**19**		**0**		**0**	
(Low High)	18	54	35	103.5	12	28	0	2	0	2

[a] The marginal increase applies only to those who would otherwise have completed a remote transaction.
[b] The primary estimate is the mean wait time reported by eight States. The high and low are plus/minus one standard deviation, respectively.
[c] DMVs will not incur the labor cost while waiting for a verification for remote reissuances.

Areas blacked out in Figure Appendix–25 represent processes that the various types of transactions will not include. For instance, people renewing a REAL ID remotely will not need to:

- wait in line at the DMV;
- enter all of their biographic data as would be done for an initial issuance, and;
- electronically scan their source identity documents.

Areas not blacked out but with values of zero will occur for that type of transaction; however, DHS believes that there will be no change in the average time to complete that part of the transaction. For instance, applicants who would have appeared in person under the status quo (for either a renewal or a growth issuance) would have had their photo taken. Consequently, when the DMV takes their photo for their REAL ID – phase in, growth or in-person renewal-there is no marginal increase in opportunity cost to applicants or labor hours to the DMV.

The estimates for application preparation time are purely assumptions. These estimates do not include the time to gather source documents for identity, lawful status and SSN. Instead, this represents the time applicants will need to familiarize themselves with the various requirements

under the final regulation (e.g. which documents they will need to obtain). DHS did not receive comments pertaining to either of the following:

- on average, how long does it currently take to become familiar with all requirements and complete the paperwork for an application for a DL/ID;
- how much longer will it take applicants to become familiar with new processes and complete the paperwork for the REAL ID application?

In its second survey of 2006, AAMVA assumes that:

- An initial REAL ID enrollment will take twice as long as a baseline in-person renewal;
- An in-person renewal will take twice as long as a baseline remote renewal;
- An initial REAL ID enrollment will take four times as long as a baseline remote renewal;
- The time to renew a REAL ID in-person will be the same as a baseline in-person renewal, and;
- Issuing a new DL/ID will take the same amount of time either under the baseline or under REAL ID. (See Figure Appendix–26.)

Figure Appendix–26: AAMVA's assumed transaction time multipliers

	Baseline transaction type:		
REAL ID transaction:	Growth	In-person renewal	Remote renewal
Initial enrollment	1	2	4
In-person renewal		1	2
Remote renewal [a]	NA	NA	NA

[a] AAMVA assumes no remote renewals would be allowed.

Comparing AAMVA and DHS estimates, which were developed independently, results in interesting similarities and differences. Both make the same assumption about in-person REAL ID renewals—that there will be no increase over the baseline. AAMVA assumed that remote renewals will be prohibited under the final regulation. The Department had the advance knowledge that this will not be the case and has estimated that remote renewal times will remain the same under REAL ID as they are in the status quo. While AAMVA assumes that issuing a new DL/ID will take the same amount of time under REAL ID as under the status quo, the Department has assumed that the additional document scanning requirements and data entry will add time to the transaction. If the current in-person renewal time averages five minutes, AAMVA and DHS have made similar estimates about the increase in time between renewing in-person under the status quo and receiving an initial REAL ID. If the average DMV processing time for remote renewals averages three minutes, AAMVA and DHS have made similar estimates on the increased amount of time for DMVs to process initial REAL ID transactions that would have been remote reissuances under the status quo.