



The Independent Monitor of Takata and the Coordinated Remedy Program

Update on the State of the Takata Airbag Recalls

December 21, 2018

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I, John D. Buretta, as Independent Monitor of Joyson Safety Systems, TK Global LLC (“Takata”) and the Coordinated Remedy Program (the “Monitor”), submit this report to describe the current state of the Takata recalls, pursuant to Paragraph 42 of the Consent Order, dated November 3, 2015, issued pursuant to the authority of the National Highway Traffic Safety Administration (“NHTSA”) and agreed to by Takata, and as amended as of May 4, 2016, and pursuant to the Coordinated Remedy Order, dated November 3, 2015, as amended by the Third Amended Coordinated Remedy Order, dated December 9, 2016 (the “ACRO”).

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I. INTRODUCTION

This report provides an update on the present state of the Takata recalls and discusses in detail the keys to maximizing the number of repairs and avoiding as many further fatalities and injuries from defective Takata inflators as possible. The Takata recalls continue to pose unprecedented challenges. As of October 2018, approximately 16.7 million recalled Takata airbag inflators remain unrepaired, and close to 10 million more inflators will be added to the recalls in January 2019. As time passes, the risk the remaining unrepaired inflators pose only grows. More exposure over more time to high heat and humidity further degrades the Takata inflator's phase-stabilized ammonium nitrate compound, making it more porous, more volatile and more prone to transform from a life-saving device to a life-threatening one. Since my last report,¹ two additional U.S. fatalities have been confirmed, along with dozens of additional serious injuries caused by defective Takata airbag inflators.²

The past year has been marked by significant, industry-wide advancements in tackling the Takata recalls as more vehicle manufacturers have adopted key strategies for effective outreach. More than 7.2 million defective Takata airbag inflators have been repaired over the past year—28% of all inflators repaired in the Takata recalls to date. Average completion percentages have increased by 30 percentage points, with many moving from 40% to 70% completion. Vehicle manufacturers have prioritized the very highest-risk vehicles, with many of these vehicles seeing the greatest progress in repairs. Among Priority Groups 1-3, which comprise the oldest vehicles in the highest-risk areas, the unrepaired inflator population has been cut in half in one year.³ Completion percentages for later Priority Groups have also seen positive trends, with vehicle manufacturers reaching higher completion percentages in shorter amounts of time. One affected vehicle manufacturer has already reached 90% completion for its vehicles in Priority Groups 7-10.

These numbers reflect that major changes have occurred in approaching this recall. Sixteen affected vehicle manufacturers are now acquiring refreshed vehicle owner information from state Departments of Motor Vehicles and other data sources in order to better identify and then contact current vehicle owners. Only three manufacturers were doing so a year ago. Thirteen vehicle manufacturers now include Spanish translations of all important information points in recall outreach. Far fewer did before. Working as an integrated team with the Monitor, fourteen vehicle manufacturers have now piloted door-to-door canvassing in areas of high heat and humidity. Only two manufacturers had engaged in canvassing a year ago. Across the board, these canvassing efforts have been a major success. Eleven vehicle manufacturers now offer mobile repair service for the Takata recalls—where a dealer or third-party service technician arrives at the vehicle owner's home to complete the Takata recall repair on site. Six

¹ The State of the Takata Airbags Recalls Report may be viewed at https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/the_state_of_the_takata_airbag_recalls-report_of_the_independent_monitor_112217_v3_tag.pdf.

² For further details on the reported fatalities and field explosions to date, see Appendix 1 and 2.

³ This reduction in unrepaired inflators has resulted from inflator repairs and accounting for vehicles that have been scrapped, stolen, exported or determined to be unreachable for other reasons.

manufacturers offered limited mobile repair service a year ago. Several vehicle manufacturers are also doing more to encourage franchised dealers to engage vehicle owners directly about the Takata recalls.

In another positive shift, manufacturers are beginning to spearhead Takata recall efforts together, engaging with the Monitor and NHTSA in developing joint communications, collectively soliciting assistance from state Departments of Motor Vehicles and participating in working groups aimed at addressing industry-wide barriers to recall completion. These collective efforts have yielded innovation, greater efficiency, and thousands of repairs.

There remains a challenging road to travel ahead and the clock is ticking for drivers and passengers with defective inflators still in their vehicles. Lagging automakers—there definitely still are a few—must intensify their efforts to catch up with higher performers. All manufacturers that have seen past success must continually improve their methods to address the most challenging vehicle populations. Repair rates in earlier Priority Groups—which contain some of the oldest and most dangerous vehicles—have slowed, while repair rates among more recently launched Priority Groups are beginning to show some signs of stagnation as campaigns mature beyond a 60% completion threshold.

But the path to overcoming these hurdles continues to come into clearer focus. Affected vehicle manufacturers that have embraced frequent data refreshes from multiple data sources, used clear and high-impact multi-channel communications, robustly addressed inconvenience in the repair process, undertaken comprehensive dealer engagement strategies and engaged in escalation strategies such as canvassing have been able to maintain rising completion rates even among these older vehicles. And there is yet hope for further improvements. Lagging manufacturers can catch up, greater industry collaboration can be achieved, and relationships with key third-party stakeholders—franchised dealerships, used car dealers, independent repair facilities, auction houses, insurers, and others—can be further cultivated to improve performance.

The challenge of the Takata recalls is not just the sheer number and variety of vehicles at risk and the deadly nature of the defect, but also the reality that the danger is greatest in the oldest and hardest-to-reach vehicles. The lessons that affected vehicle manufacturers have gleaned already through the improvements achieved this past year in scaling and coordinating outreach efforts—both those designed to find and motivate owners of the highest risk vehicles and those aimed at improving repair rates generally—will undoubtedly be useful beyond the Takata recalls. As the automotive industry becomes increasingly reliant on extensive supply chains for modern vehicles, and vehicles become more sophisticated and technology-dependent than they were 20 years ago, the strategies being developed during the Takata recalls will lay a solid foundation for addressing future automotive recalls with greater speed and efficiency.

II. KEYS TO FURTHER RECALL SUCCESS

In my first report, I identified a variety of techniques that contribute to an effective recall outreach strategy. These findings were based on extensive research, including a nationwide survey, focus groups, interviews and field interactions with vehicle owners, discussions with vehicle manufacturers and meetings with third-party stakeholders. The key components of these techniques are detailed in Figure 1 below.

Figure 1: Keys to Further Recall Success

Best Practice	Implementation
<p>Data Quality</p>	<ul style="list-style-type: none"> • Frequently refresh vehicle owner information to account for changes in vehicle ownership and vehicle owner location. • Supplement vehicle owner registration information with data from sources beyond state Department of Motor Vehicle information—especially for older vehicles where prior outreach has not succeeded.
<p>Segmented Analysis</p>	<ul style="list-style-type: none"> • Segment affected vehicle owner populations by attributes such as vehicle type (<i>e.g.</i>, fleet vs. individual), household type (<i>e.g.</i>, house vs. apartment), primary language and distance to dealer. • Tailor communications based on these and other attributes to create messaging that will resonate with affected vehicle owners.
<p>Communications</p>	<p>Send outreach that:</p> <ul style="list-style-type: none"> • Is frequent, • Is personalized, • Is bilingual, • Is conveyed through multiple channels, • Clearly conveys the urgency of the Takata defect and the importance of scheduling a repair appointment, • Clearly conveys a call to action for affected vehicle owners, including a phone number that can be called to schedule an appointment, • Uses eye-catching graphics, • Clearly conveys that all recall repairs are free, and • Clearly identifies services offered to overcome owner inconvenience.
<p>Overcoming Owner Inconvenience</p>	<ul style="list-style-type: none"> • Offer free services that minimize repair inconvenience, such as mobile repair service, loaner vehicles and extended dealer service hours.

Figure 1: Keys to Further Recall Success

Best Practice	Implementation
Engaging Dealers	<p>Proactively engage and motivate dealers to conduct recall outreach:</p> <ul style="list-style-type: none"> • Provide dealers with current and accurate customer contact information, and • Provide dealers with recall communication best practices. <p>Proactively motivate dealers to prioritize Takata recall repairs and increase completion percentages within their respective areas:</p> <ul style="list-style-type: none"> • Develop individualized dealer recall strategies, • Develop and communicate to dealers clear key performance indicators regarding expected number of repairs, monthly repair goals, missed opportunities and vehicle owner segment completion percentages, • Expand dealer reimbursement policies and incentives for the Takata recalls, • Provide dealers with information to reach vehicle owners and accurately answer questions about the Takata recalls, • Frequently communicate with dealers regarding available parts supply, and • Discuss with lower-performing dealers best practices taken from high-performing dealers.
Engaging Third Parties	<p>Engage third parties, such as state DMVs, independent repair facilities, insurers, auction houses and used car dealers, to provide a further trusted source for recall messaging, to reach vehicle owners who do not regularly visit franchised dealerships for servicing and to repair vehicles moving through used car dealerships for which vehicle registration data may not be accurate.</p>
Canvassing	<p>Engage in door-to-door canvassing of owners of older unrepaired vehicles where repeated prior outreach has been ineffective, in order to proactively encourage vehicle owners to schedule repairs, verify their contact information, emphasize the urgency of the repair and understand and overcome the barriers these vehicle owners face in completing repairs.</p>

As affected vehicle manufacturers have deployed these strategies, recall completion percentages have improved. The most effective recall strategies now include a mix of finding new sources of owner data and refreshing old sources; segmenting unrepaired vehicle populations to develop targeted outreach strategies for different segments; sending clear, high-impact communications frequently and through multiple channels; addressing the perceived inconvenience of repairs; coordinating with third-party stakeholders; and canvassing vehicle owners at their residences.⁴

⁴ The Monitor has also observed that the following practices help to improve completion percentages: strategic forecasting, scaling to a national level successful local or regional initiatives, maintaining recall teams with cross-functional expertise and elevating outreach initiatives based on the relative risks posed by different Takata inflators.

Data Quality

Accurate vehicle owner information is necessary to ensure that the recall outreach is actually being received by the current vehicle owner. Data associated with older vehicles is often inaccurate because these vehicles tend to change ownership frequently and may be owned by individuals who have less stable living arrangements, resulting in more frequent address changes that are not promptly updated at state DMVs. Owners of these older vehicles often lack relationships with franchised dealers and thus do not share their current contact information with dealers to permit easy notification of safety recalls.

Historically, affected vehicle manufacturers have relied on state DMV registration information to gather contact information for recall outreach. DMV registration data is useful in the early stages of a recall and generally permits vehicle manufacturers to achieve completion percentages from 50% to 60% when used in combination with effective communications. However, for the remaining pool of unrepaired vehicles, DMV information is often likely to be inaccurate. Owners may have moved without updating their DMV registration information, deliberately or accidentally provided incorrect information to the DMV or purchased their vehicle through private sales or local auctions without updating the DMV registration. Some vehicles may also have been repossessed by insurers and are transiting the auction and restoration process, causing registration information to be outdated until a new owner registers it with a DMV. Other vehicles may have been totaled or scrapped. To make sure the actual owners of these remaining unrepaired vehicles are receiving the recall outreach being sent to them, and to identify those vehicles that are no longer on the road, supplementing DMV information from additional sources is critical.

During a door-to-door canvassing initiative in Houston and South Florida conducted this past year targeting older vehicles subject to the Takata recalls, the Monitor found that nearly 50% of vehicle owner registration information did not accurately identify the correct owner of the vehicle—in 80% of these instances, the vehicle had been sold, while in 20%, the vehicle owner had moved.

Frequent refreshing of contact information for older recalled vehicles is also important. For example, one affected vehicle manufacturer received an updated DMV data set and found that 30% of its owner information had changed over the last year. Likewise, the Monitor conducted a data append pilot for older, high-risk vehicles on behalf of two vehicle manufacturers and found that when a new address was identified, 73% of the time it was because the vehicle had a new owner.

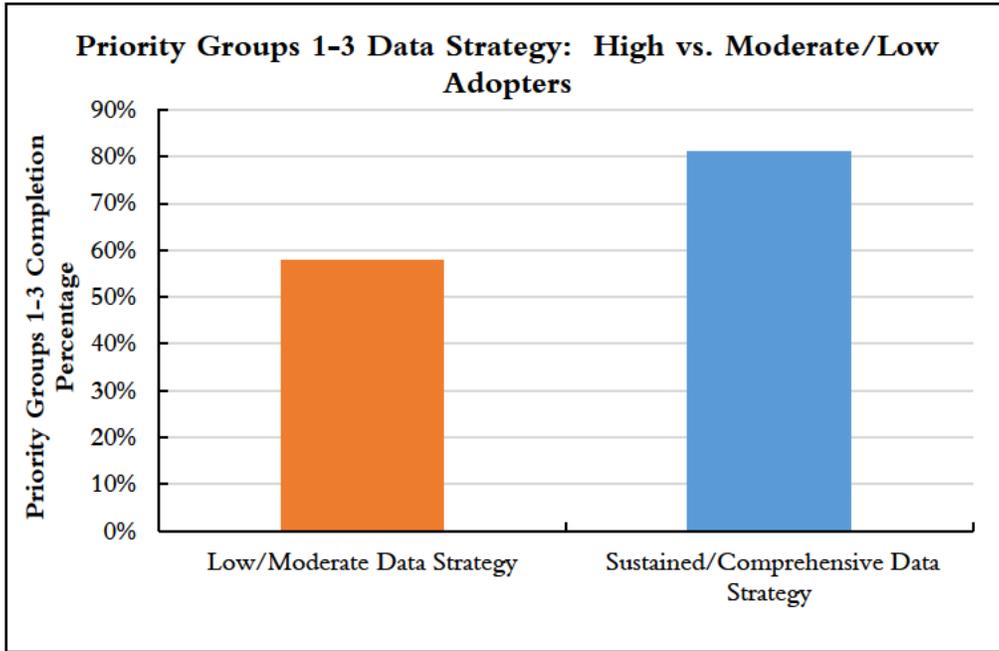
To ensure recall outreach is actually reaching affected vehicle owners, vehicle manufacturers should deploy comprehensive data strategies such as those summarized in Figure 2 below.

Figure 2: Effective Data Strategies

Strategy	Implementation
<p>Use and analyze DMV data as a starting point</p>	<p>Vehicle owner registration data from state DMVs provides an initial foundation to begin outreach early in a recall campaign—it can provide multiple vehicle owner addresses and title attributes such as scrapped, stolen, destroyed, exported, rebuilt, salvaged or total loss—but affected vehicle manufacturers must carefully analyze each data field to understand the likely whereabouts of the vehicle. For example, where a DMV provides multiple addresses associated with a VIN, the manufacturer should consider sending outreach to each address.</p>
<p>Monitor the response rate from address, phone and email contacts</p>	<p>Affected vehicle manufacturers should use address, phone and email contact information to reach vehicle owners. When there is no responsive activity after multiple outreach attempts using clear, impactful communications, manufacturers should seek out an additional point of contact.</p>
<p>Use non-DMV data sources</p>	<p>When seeking to identify new contact information for affected vehicle owners, vehicle manufacturers should use sources that include data other than state DMV registration. These sources can include data from auto parts stores, oil change shops and car clubs that collect and sell vehicle owner contact information. Additional data sources can include other forms of vehicle service history, auction history, online sales listings, background check services, license plate recognition data and salvage listings. These sources are more likely to capture information on vehicle owners whose registration information is not up to date, tend to capture recent vehicle activity and may confirm that a vehicle is still in transit where other data sources would suggest that it is not.</p>
<p>Frequently refresh all data sources</p>	<p>Older vehicles are more frequently sold or otherwise change hands. To make sure that outreach is being sent to the current vehicle owner, affected vehicle manufacturers should update their owner data for older vehicles at least every three months.</p>
<p>Provide data access to dealers</p>	<p>Affected vehicle manufacturers should provide current contact information for vehicle owners to franchised dealers, for purposes of dealer recall outreach.</p>

Over the past year, more vehicle manufacturers have been improving the quality of their data and finding additional sources of vehicle owner contact information. Vehicle manufacturers that have deployed these strategies have seen great success. Figure 3 below shows the average completion percentages among Priority Groups 1–3 vehicles for manufacturers that have adopted sustained, comprehensive data strategies—using multiple vehicle owner data sources, frequent refreshes of those data sources and strategic analysis of owner information—versus vehicle manufacturers that have a low or moderate degree of data strategy adoption. As Figure 3 illustrates, vehicle manufacturers with a high degree of data strategy adoption on average (i) have completion percentages 23 percentage points higher than vehicle manufacturers that have not adopted a robust data strategy, and (ii) have been successful in avoiding completion rate stagnation that can occur as to older vehicles.

Figure 3



Segmented Analysis

The Takata recalls encompass vehicles from 2000 to 2017 model years and vehicle types ranging from economy light vehicles to luxury sports cars and heavy duty trucks. The great variation in vehicle type, age, model, user and location for the Takata recalls heightens the importance of understanding different populations of vehicle owners. To develop effective strategies for recall completion, vehicle manufacturers should segment owner populations and create targeted outreach plans to reach each group, such as those set forth in Figure 4 below.

Figure 4: Examples of Targeted Outreach Plans for Different Segments

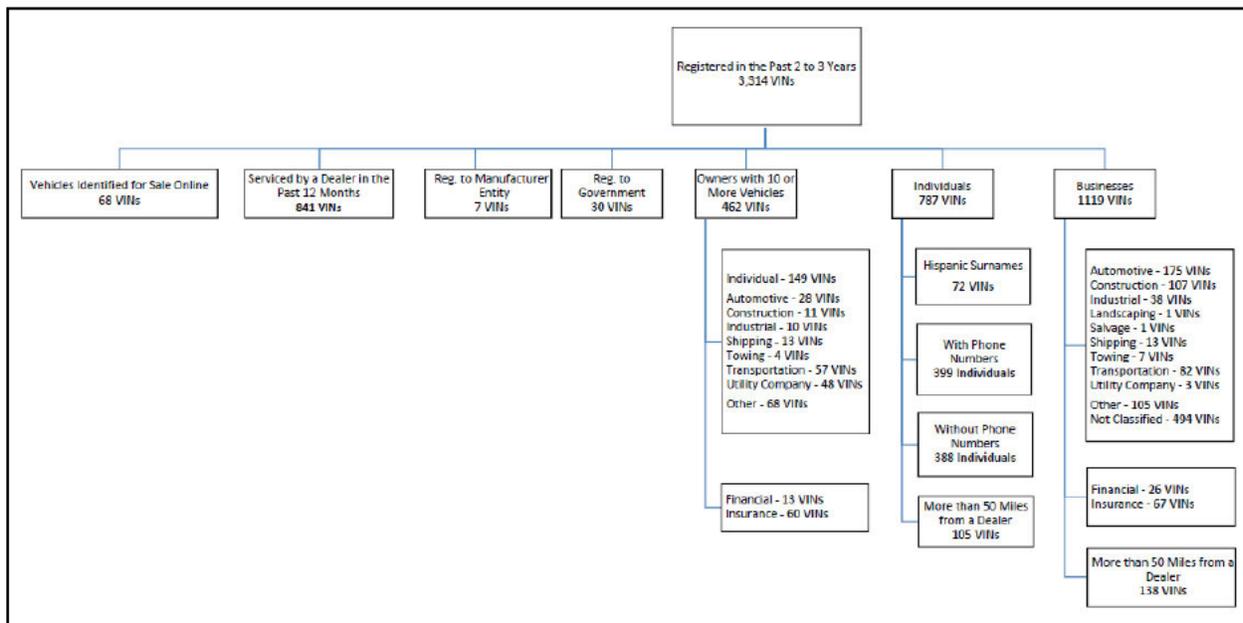
Data Point	Targeted Outreach
Language Spoken	Vehicle owners whose primary language is not English may require outreach materials to be sent in another language and call center agents and door-to-door canvassers with appropriate language proficiency.
Distance to Dealer	Vehicle owners located farther away from dealerships may face greater inconveniences associated with the repair process. Towing, mobile repair or authorized repairs at independent repair facilities may be necessary.
Rental Housing	The contact information associated with these vehicle owners may need to be refreshed more frequently and appended with non-DMV data sources.
Expired Vehicle Registration	Non-DMV sources may be needed to accurately identify the vehicle’s current owner and location.

Figure 4: Examples of Targeted Outreach Plans for Different Segments

Data Point	Targeted Outreach
Lower Household Income	These vehicle owners likely have fewer resources and may be unable to be without their vehicles for a very lengthy period of time. Manufacturers should highlight the availability of services that address this inconvenience—such as free loaner vehicles and mobile repair—and consider offering an incentive.
No Recent Dealer Service History	These vehicle owners may be skeptical of franchised dealers or concerned about being charged for the recall repairs or upsold on other repairs. Manufacturers should emphasize that the repair process is free and convenient, and engage independent repair facilities to convey this message to vehicle owners.
Households with Children	These vehicle owners may be particularly inconvenienced by being without a vehicle for an extended period of time. Outreach should emphasize free loaner cars, free towing, mobile repair and any child-friendly waiting rooms or other relevant amenities at franchised dealers. Outreach should emphasize that passengers are also in danger while the vehicle remains unrepaired.
Fleets and Owners of Multiple Vehicles	These vehicle owners are likely businesses or entities that use their vehicles for business. Manufacturers should create customized repair plans with these businesses to minimize disruption to the vehicles owner’s business and maximize the number of vehicles repaired in one service appointment. Mobile repair may be particularly effective for this segment.
Pick-up Trucks and Commercial Vans	These vehicles may be used for business purposes. Outreach should emphasize owner conveniences such as convenient repair times or mobile repair, so as to minimize disruption of the vehicle owner’s business operations.
Original Owners	These vehicle owners have likely cared for and maintained their vehicles for an extended period of time and have a connection to the vehicle brand. Outreach should acknowledge brand loyalty.
P.O. Box Address	These vehicle owners may be less likely to receive outreach sent to their P.O. Box address. Manufacturers should refresh or append their data with non-DMV data sources to try to identify a non-P.O. Box address for outreach.
Sighted More than 50 Miles from Registration Location	The registration contact information for these vehicles may be inaccurate, or the vehicle owner may be more dependent on the vehicle for long-range commuting. Manufacturers should refresh or append their data with non-DMV data sources and should emphasize owner conveniences such as loaner cars or mobile repair.
Prior Outreach Attempts	These vehicle owners have already been sent—and have not responded to—outreach. Manufacturers should refresh and escalate outreach and refresh this vehicle owner’s contact information.

Figure 5 below shows an example of a segmentation analysis that identifies multiple groups within an affected vehicle manufacturer’s unrepaired population. Each box of the segmentation tree corresponds with a unique vehicle owner group for which targeted outreach strategies may be developed. Further refinement of this analysis can categorize vehicles based on outreach frequency, type of residence and original versus subsequent owner.

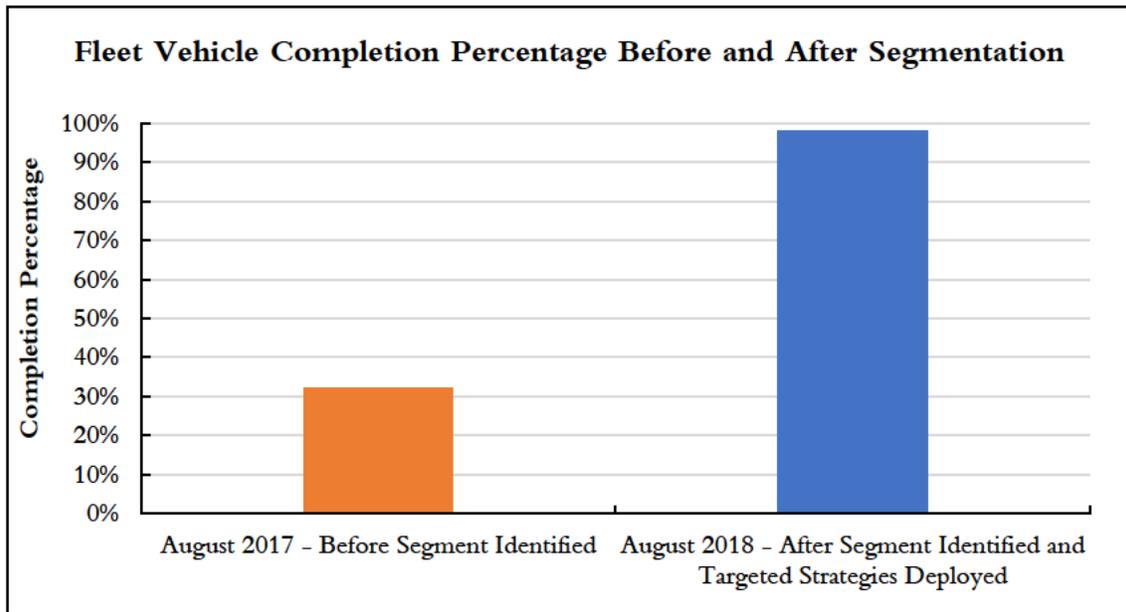
Figure 5



The Monitor has developed a data visualization tool that facilitates segmentation analysis by allowing users to review completion trends and the geographic dispersion of subpopulations based on attributes such as residence type, primary household language and household income. Several vehicle manufacturers are making use of the tool in their segmentation analyses and outreach strategies.

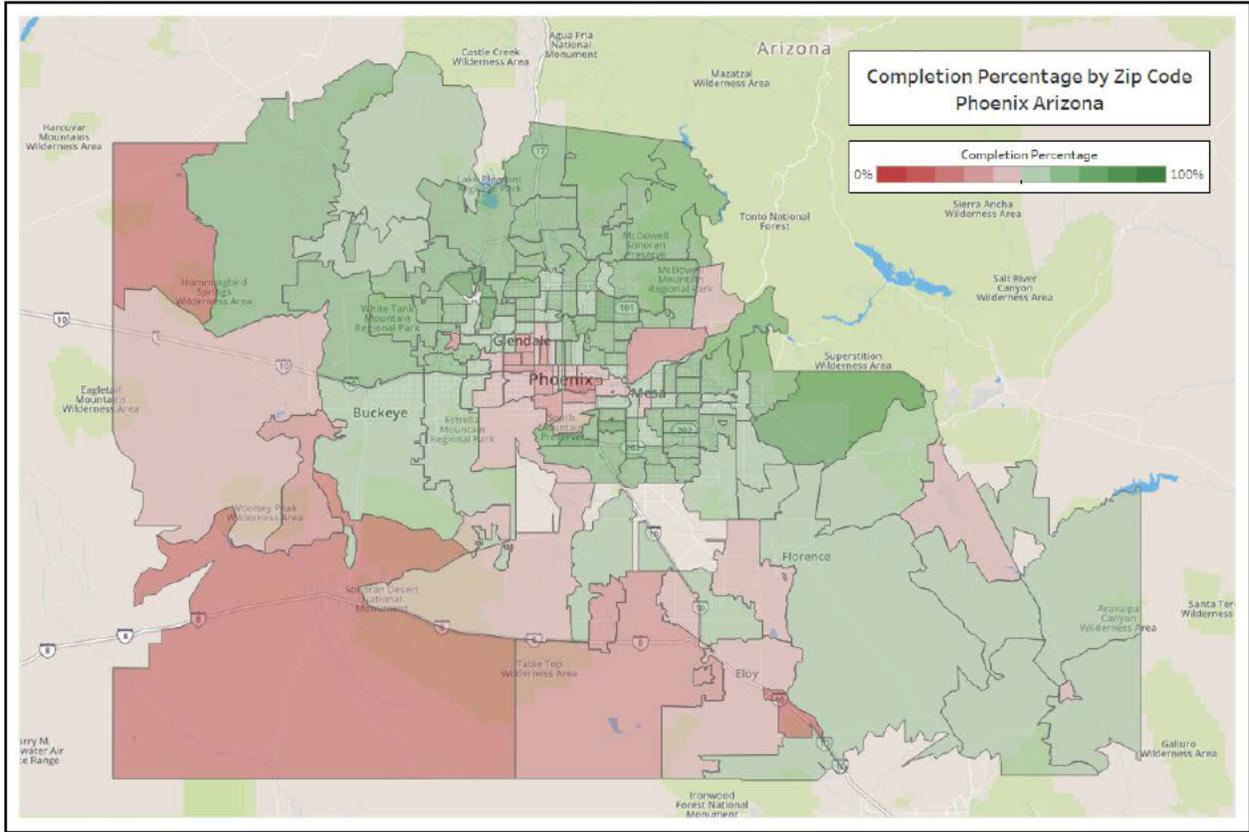
Over the past year, manufacturers have made progress in understanding the wide variety of vehicle owners and implementing tailored targeted outreach. Twelve manufacturers now incorporate some degree of segmentation into their recall engagement strategies and six have launched targeted outreach initiatives. Isolating subpopulations of affected vehicles has permitted vehicle manufacturers to significantly improve repair rates. Figure 6 below shows the repair rates for a vehicle manufacturer that segmented its unrepaired vehicle population to identify fleet vehicle owners—individuals or entities that owned five or more of the manufacturer’s vehicles—and developed targeted outreach, such as determining each fleet owner’s point person for vehicle safety, and worked with these businesses to create customized repair programs that would avoid significantly disrupting their operations. As Figure 6 shows, the vehicle manufacturer was able to increase its completion percentage for this segment from approximately 30%, as shown by the orange bar, to 98%, as shown by the blue bar, in less than a year. Another affected vehicle manufacturer similarly isolated its fleet-owned vehicles and was able to identify 1,000 vehicles held by a single fleet owner and repair over 700 of those vehicles.

Figure 6



Segmentation can also be an especially useful tool for targeting different populations of vehicle owners within a single geographic area. For example, Figure 7 below shows a map of repair completion percentages in each Phoenix zip code for 13 affected vehicle manufacturers. Shades of red represent low completion percentages (ranging from 24% to 49%), and shades of green represent higher completion percentages (ranging from 50% to 80%). Data from the U.S. Census Bureau indicates that the green zip codes are more affluent, have a greater percentage of English speakers and have more single-family residential housing, whereas the red zip codes tend to have lower average incomes, more rental housing units and a higher concentration of non-English speakers. Knowing that populations in red zip codes share demographic similarities and are experiencing lower completion rates allows vehicle manufacturers to develop more targeted outreach materials, including use of non-English languages prevalent in the area, greater emphasis on conveying that repairs are free and highlighting the availability of convenience services such as free towing, loaner vehicles and mobile repair. In areas with more rental housing, more frequent data refreshes and multiple data sources should also be considered for these lower-performing red zip codes.

Figure 7



Communications

The main challenges associated with recall communications and vehicle owners' misperceptions of the Takata recalls are set forth in Figure 8 below.

Figure 8

Challenges in Recall Communications	
Awareness and understanding of the Takata recalls is lacking	Vehicle owners are largely unaware of the scope of the Takata recalls and the dangers defective Takata airbag inflators pose. Most participants in the focus groups did not believe the Takata recalls were urgent and did not understand the danger this defect posed to them and their loved ones. This sentiment was echoed in the Monitor's nationwide survey, in which many individuals who were aware of the Takata recalls did not associate the defect with death or serious injury.
Vehicle owners find recall outreach confusing	Many participants in the focus groups and interviews indicated that they had previously received recall notifications but disregarded them because they did not understand the message or urgency of the situation. Focus group participants and survey respondents expressed confusion at the meaning of technical terms such as "inflator".
Many vehicle owners do not understand English	Many affected vehicle owners in the focus groups expressed that they disregarded recall outreach sent in English because they were unable to understand the content.
Affected vehicle owners are skeptical of recall outreach	Vehicle owners are often skeptical of mass mailings from vehicle manufacturers. Participants in the focus groups felt this type of outreach sought to "scam" them to pay for unnecessary services, repossess their vehicle or provide private information that would be used in improper ways.

Through research, communications pilots and collaboration with affected vehicle manufacturers, solutions to these challenges have been identified. Figure 9 below outlines methods effective in communicating with vehicle owners.

Figure 9

Communications Best Practices	
Communicate urgency and risk	Outreach materials should clearly communicate urgency and the risks posed by defective Takata airbag inflators. Focus group participants indicated they would want to be notified of such a serious recall with urgent, disruptive messages.
Use high-impact graphics and words	Messaging should capture the attention of vehicle owners so that the materials are not simply discarded or forgotten. Materials that incorporate bright, attention-grabbing colors, words like “kill” and “explode” and provocative messaging drive action most effectively. In contrast, words like “defective” and “faulty” are less likely to motivate action.
Use non-verbal images	Messaging should employ non-verbal iconography like the Takata airbag recall shrapnel hazard logo (displayed on the front of this report), which depicts sharp metal fragments exploding out of a steering wheel using clear, simple shapes and bright colors.
Use simple words and phrases	Messaging should be clear and easy to understand, and avoid technical or confusing language.
Personalize message content	Outreach should appear to be a legitimate personalized communication and not a mass mailing. The owner’s name and a picture of the make, model and model year of the owner’s vehicle should be used.
Use real-life examples of victims	Real-life stories about victims of defective Takata airbag inflators help vehicle owners better understand the danger to them and their loved ones.
Clearly convey that recall repairs are free	Messaging should clearly convey that all Takata recall repairs are <u>FREE</u> .
Clearly convey free services to minimize inconvenience	Manufacturers should clearly convey the availability of free services that minimize inconvenience to owners, such as loaner vehicles and mobile repair.
Take stock of language preferences	Creating content in multiple languages, or tailoring content to the preferred language of the recipient, helps ensure individuals read and understand recall outreach.

Figure 9

Communications Best Practices	
Send frequent outreach	Focus group participants, in-depth interviewees and national survey respondents all expressed the view that repeated reminders are crucial in the event of a serious, urgent safety risk. Most 2017 focus group participants indicated that such contact should occur at least weekly, while nearly two-thirds of survey respondents indicated that several notifications each month would be appropriate. Individuals who were canvassed and received multiple pre-canvass communications indicated that the frequency of communications underscored for them the importance of the Takata recalls and helped convince them to act.
Use multiple means of communication	The focus groups and surveys indicated that there is no one medium of communication that is the “silver bullet” for reaching affected vehicle owners. Survey respondents expressed preferences for various modes of communication, such as traditional first-class mail, email, text message and social media. Most focus group participants agreed that using multiple communications channels or platforms, including phone calls, emails and postal mailings, is warranted given the urgency of the issue.
Provide an easy, simple process for taking action	Outreach should provide immediate next steps to complete a repair. Participants in the focus groups indicated that they preferred outreach materials that provided an easy, immediate next step, such as using the AirbagRecall.com URL to check their vehicle and call a local dealer to schedule an appointment.
Convey recall messaging through local community stakeholders	Recall messaging should be reinforced by trusted, local sources, including family, neighbors and community groups.

As described below, over the past year, further data has been developed indicating that high-impact, multi-channel, bilingual, personalized communications are more effective.

Focus Groups and In-depth Interviews of Persistent Non-Responsive Owners of Older Vehicles

Between July 21, 2018 and July 23, 2018, in Houston, Texas, the Monitor conducted four focus groups and more than 20 in-depth interviews of vehicle owners who had Takata recall repairs completed after two Monitor-led Houston door-to-door canvassing pilots, in an effort to better understand why vehicle owners had not previously had the repair completed and what finally motivated them to have the repair completed during the canvass. Each of the four focus groups involved six to eight participants; two were moderated by English speakers while the other two were moderated by Spanish speakers.

These focus groups and interviews shed light on the perceptions of an increasingly important segment of affected vehicle owners: those that have been sent multiple prior outreach

attempts yet not responded. This research further highlighted the importance of outreach that conveys a sense of urgency—whether through in-person interactions, consistent follow-up or certified mail—and the impact it has, particularly on vehicle owners who have not responded to traditional outreach methods and do not have active dealer relationships. Many vehicle owners who had been sent traditional recall outreach did not remember receiving any recall notifications, and those who did remember receiving the notification did not appreciate the urgency of the Takata recalls or the risk the defect poses. Many believed their defective airbags may simply not deploy, may over-inflate, or that they were safe if they wore a seat belt. Few were aware that the metal inflator canister could explode, sending sharp metal fragments through the vehicle, even in a minor collision. Additional findings from these focus groups and interviews are set forth in Figure 10 below.

Figure 10: Findings from Focus Groups and Interviews of Persistent Non-Responsive Owners of Older Vehicles

Finding	Observation
Use high-impact imagery to convey urgency	High-impact imagery—such as photos of victims of defective Takata inflators—promoted a sense of urgency and motivated many to have their vehicle repaired. Respondents who had not seen the materials containing images of victims suggested such photos would have been effective.
Use alternative outreach channels—such as certified mail—to communicate urgency	Messaging sent through certain channels—such as certified mail—conveyed a greater sense of urgency and credibility. Many of the recall notifications owners had received looked to owners like “junk mail” and were discarded. A full-sized certified mail envelope was perceived as requiring more careful attention.
Be persistent in communications to underscore urgency	Persistent communications by the canvassing team were a key factor in owners’ decisions to complete the repair.
Proactively address perceptions of inconvenience	Convenience was the most important factor in deciding whether to schedule and complete the recall repair. Many respondents cited time constraints as the reason they had not previously completed the repair. Owners who used mobile repair service expressed how easy the repair process was from beginning to end, and 85% of all research subjects said they would prefer mobile repair for future recall repairs. In addition, learning that affected vehicle manufacturers were willing to send a mobile technician to the vehicle owner’s home conveyed urgency.
Communicate frequently with affected vehicle owners	Many vehicle owners said that they were ultimately motivated to complete their recall repairs by the frequency of the recall communications they received. The consistency of the outreach helped build awareness of the urgency of the repair and provided multiple opportunities to communicate about elements of the repair process that may concern or confuse the vehicle owner—such as the repair being free or mobile repair being available. Vehicle owners did not express irritation at being contacted frequently, and many instead perceived it as motivated out of concern for their well-being.

Affected Vehicle Owner Survey

The need for clear communications using high impact graphics and wording was further observed in an October 2018 survey by the Monitor of affected vehicle owners. This survey aimed to assess the efficacy of current recall communications strategies, and surveyed 262 drivers of vehicles made by six different manufacturers. The survey targeted individuals who had open Takata recalls and owned vehicles that were at least 10 years old as of the time of the survey. Most respondents owned vehicles in Priority Groups 1-3, had owned their vehicles for five years or longer and were not the original owner of the vehicle. Most respondents also said their vehicle registrations were current. Many survey respondents resided in areas of high heat and humidity.

Survey results illustrated that communications using high impact words and phrases motivate affected vehicle owners to act. Respondents expressed that outreach materials should describe the recall as “urgent”, “mandatory” and an “emergency”, describe the inflator as “dangerously defective” rather than simply “defective” and describe the result of defective inflators exploding as an “explosion” that sends “sharp metal fragments” through the vehicle. Survey respondents also expressed a preference for language that is clear, direct and avoids abstract terms in describing the recall.

Affected Vehicle Manufacturer Improvements in Communications

The use of clear, frequent, multi-channel communications has become standard across affected vehicle manufacturers, with all but one of the large vehicle manufacturers implementing this practice. Many vehicle manufacturers also have been escalating their communications using high-intensity imagery, varying the channels and messengers for communications, sending more bilingual content and personalizing the content of outreach. Manufacturers that have employed these strategies have seen substantial increases in completion percentages.

High-intensity Imagery

As recall campaigns mature, it is important to escalate outreach to motivate action by vehicle owners who did not respond to earlier forms of outreach. As to this more challenging group of owners, many affected vehicle manufacturers have started using communications with higher-impact imagery, such as graphics highlighting prior fatalities and injuries.

Feedback from vehicle owner focus groups over the past year has confirmed the efficacy of high-impact imagery. For example, one vehicle manufacturer tested different communication templates in focus groups of affected vehicle owners. These focus groups identified as most impactful templates with intense imagery and less text, such as those set forth in Figure 11.

Figure 11



Affected vehicle manufacturers have seen rising completion rates after sending higher-impact communications. Figure 12 below shows the completion percentage trend of a subset of one vehicle manufacturer’s Priority Group 4 vehicles, which were sent high-frequency communications with impactful language such as “Do Not Drive Your Vehicle”, “These can violently explode in the event of a crash” and “Contact your dealer immediately”. The manufacturer also sent five brightly colored postcards to vehicle owners consecutively over a five-day period, to draw the attention of previously unresponsive owners and underscore the severity of the defect and the urgent need to complete the free repair. After ten months of this escalated outreach, the manufacturer achieved an 83% repair completion percentage—over 12 times the completion percentage of this vehicle population before intensive outreach commenced. This manufacturer has seen a sustained increase in completion percentages beyond 70% of, on average, 3% per month.

Figure 12

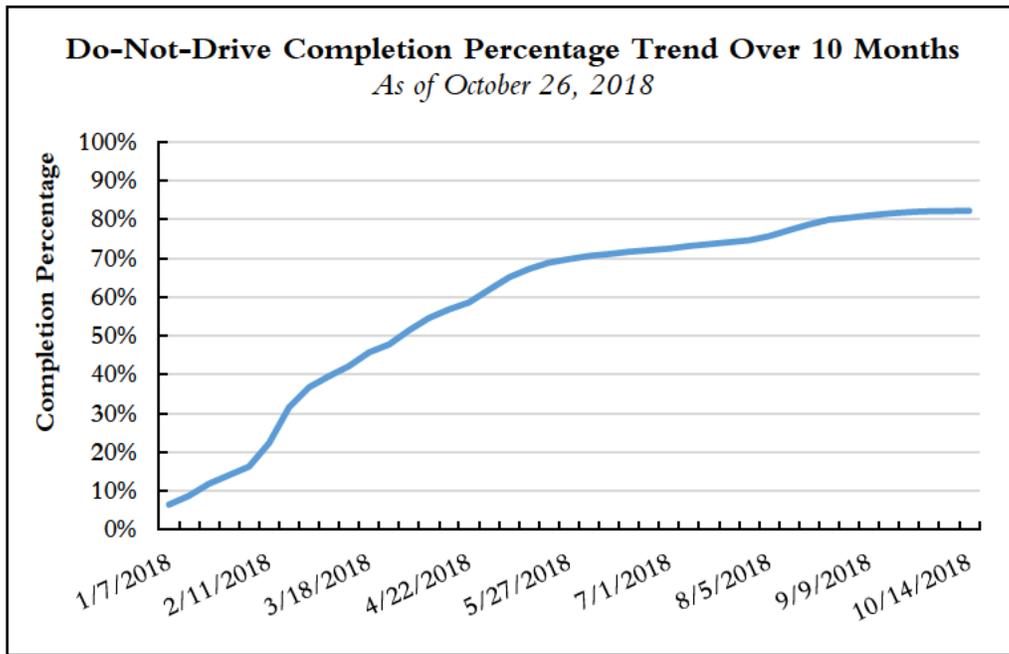
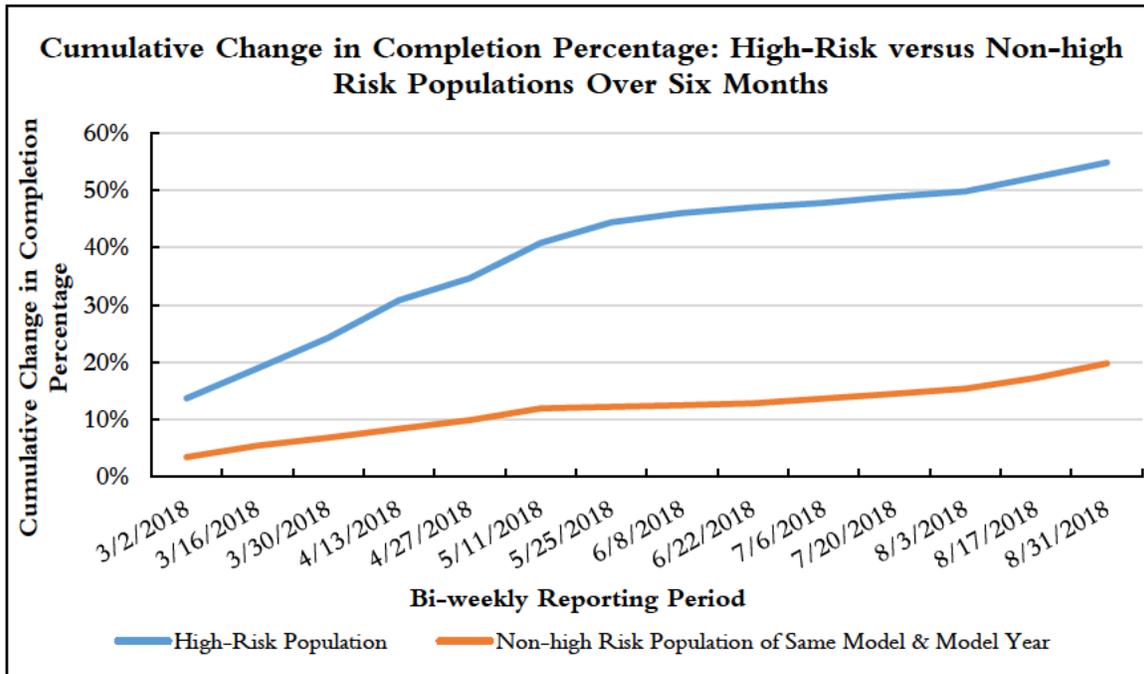


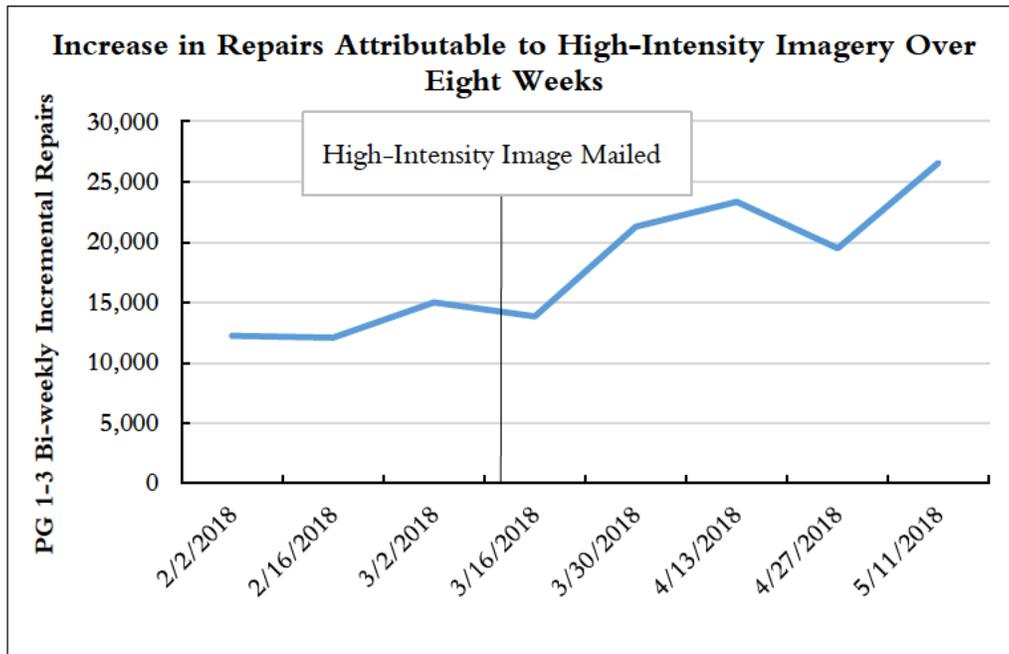
Figure 13 below shows the change in completion percentage for a subset of this manufacturer's affected vehicle population of the same vehicle model and model year, as compared to those for the subset that received intense, escalated outreach. As Figure 13 illustrates, after six months the change in completion percentage for the vehicle population that received the escalated communications was 275% higher than for the vehicle population that did not.

Figure 13



The use of high-intensity imagery has also proven effective for other affected vehicle manufacturers. Figure 14 below shows an increase in repair activity following mailing of high-impact imagery for vehicles that had been under recall for at least three years. By the time this mailer was sent, 70% of owners of this vehicle type had already completed the recall repair and the remaining owners had been targeted with dozens of communications. The new mailing included an image of a victim of an airbag inflator explosion with shrapnel lodged in her eye as she was rushed to the hospital in an ambulance, secured to a body board with her head and neck stabilized. As Figure 14 illustrates, repairs in this manufacturer's Priority Groups 1-3 population nearly doubled after the mailing was sent in March 2018.

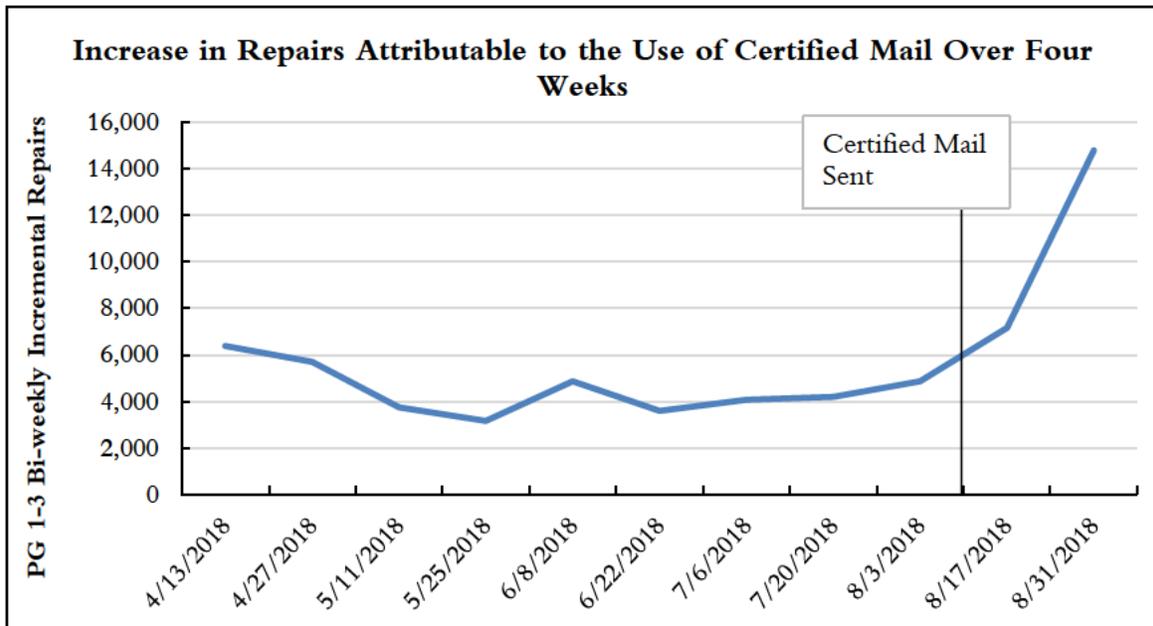
Figure 14



Alternative Communications Channels and Messengers

Affected vehicle manufacturers have also been exploring new forms of communication with vehicle owners to motivate action. Four affected vehicle manufacturers have recently started sending certified mail in addition to postcards and letters. Figure 15 below shows the sustained increase in repair activity one vehicle manufacturer had when it added certified mail but kept the content of the message the same. The vehicle population had been under recall for at least three years and had a 75% completion percentage when the vehicle manufacturer escalated its communications strategy to include certified mail in August 2018. As Figure 15 shows, bi-weekly incremental repairs increased by 250% immediately after certified mailing commenced.

Figure 15

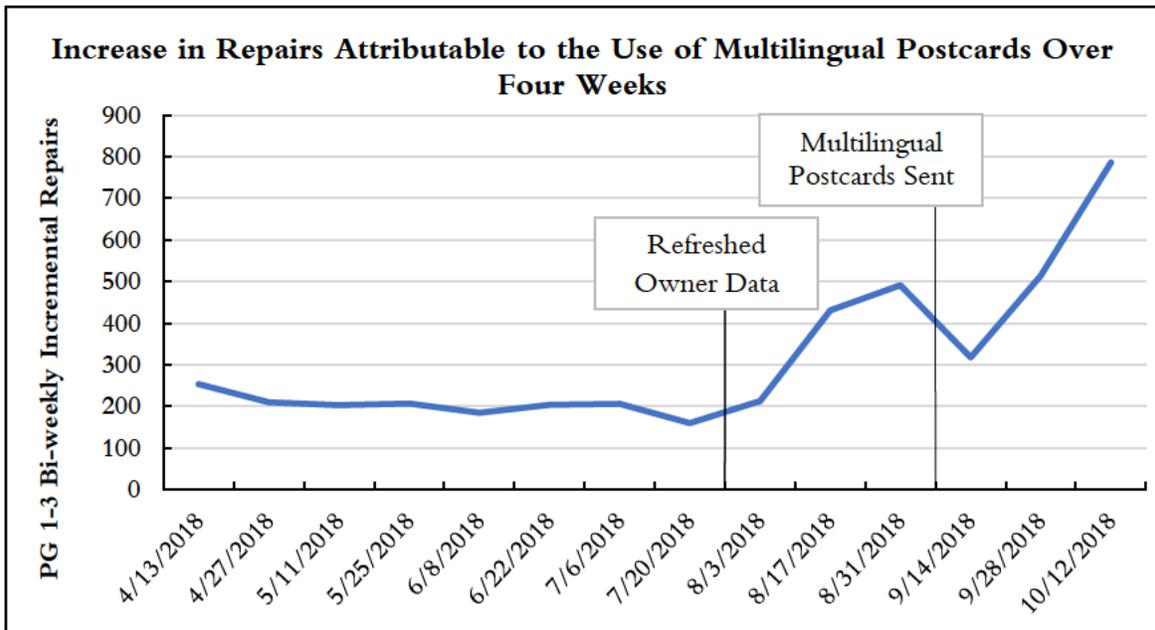


In another noteworthy improvement over the past year, affected vehicle manufacturers have been collaborating on public-facing communication efforts to spread awareness of the Takata recalls. Seventeen vehicle manufacturers representing 32 vehicle brands collaboratively developed an article on the Takata recalls that was distributed in August 2018 to thousands of community newspapers and websites, using the North American Precis Syndicate. The article was published in English and Spanish in thousands of online and print community-based publications across all U.S. states. As of September 20, 2018, this release generated 3,716 news articles across all states. It is estimated that over 57 million unique visitors visit the sites where the articles were posted each month. Vehicle manufacturers are exploring other collaborative communication efforts including joint media campaigns and jointly developed materials that can be distributed to community organizations.

Multi-lingual Communications

As vehicle manufacturers' unrepaired vehicle populations shrink, addressing language barriers will become more critical to ongoing success, particularly when language barriers are not addressed earlier in the recall. Affected vehicle manufacturers have also begun deploying more targeted outreach strategies to overcome language barriers. For several vehicle manufacturers with high completion percentages, Spanish speakers appear to be a large segment of unrepaired vehicle owners. One affected vehicle manufacturer has begun including Spanish, Chinese and Vietnamese language translations in its postcard communications. Figure 16 below shows the increase in repair activity following the use of these multilingual postcards, sent repeatedly over the course of multiple days.

Figure 16



Several manufacturers have also begun to use Spanish-only communication for outreach directed to affected vehicle owners in Puerto Rico. Outreach to Puerto Rico is also increasingly informed by field personnel in Puerto Rico who have emphasized the importance of communicating through community-based channels such as local print, local radio, dealerships and family members.

Providing an Easy, Simple Process for Taking Action

Many affected vehicle manufacturers have piloted communications using sticky notes and tear sheets that contain key information about the repair process such as the phone number to call to schedule a repair appointment and a space to write the date and time of the appointment. This format provides vehicle owners an easy, immediately accessible mechanism to facilitate scheduling and following through with a repair. The sticky note format also personalizes the communication and underscores the authenticity of the outreach.

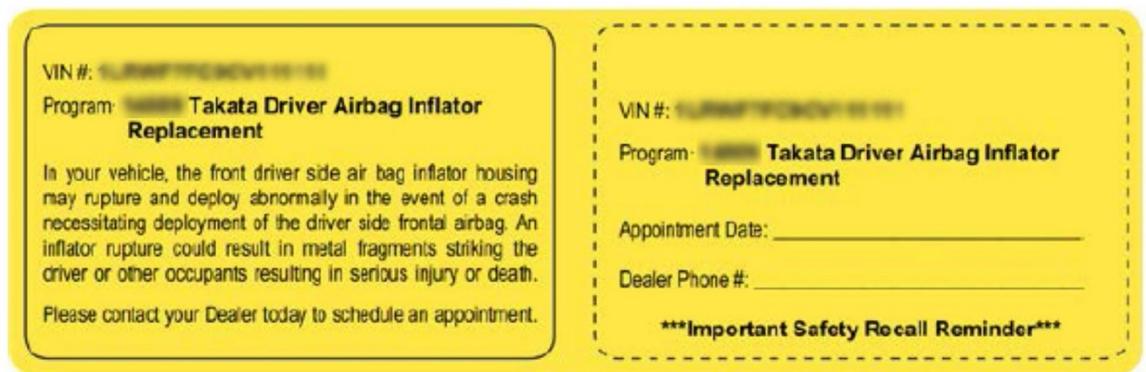
Figure 17 is an example of an affected vehicle manufacturer's multilingual communication with an image of a victim and a tear sheet attached. The tear sheet succinctly states the most important message: call the number listed to schedule a time to complete the recall repair.

Figure 17



Figure 18 below shows another example of a sticky note included in an affected vehicle manufacturer's letter. This note allows the vehicle owner to write down the recall repair appointment date.

Figure 18



Community Amplification

Pilot efforts over the past year have demonstrated that raising awareness within communities is an effective tool in encouraging recall repairs, particularly when done in conjunction with other forms of frequent, multi-channel outreach. A Monitor-led grassroots outreach pilot titled “Airbag Recall: Operation Find & Fix” has targeted zip codes with high concentrations of higher-risk vehicles in three higher-risk geographies—the San Fernando Valley in the Los Angeles area; Fort Lauderdale in the Southern Florida area; and Houston, Texas. The program is designed to spread awareness through community-based channels, leveraging community partners—such as civic leaders, local government agencies, cultural centers and faith organizations—to engage and mobilize their constituencies to check their vehicles and schedule repairs.

During the grassroots pilot, field personnel interacting with vehicle owners and local stakeholders observed that:

- **Language matters.** Vehicle owners who were not native English speakers often were confused about recall notifications. When engaged in a language in which they were proficient, they better understood the issue and the necessary next steps.
- **Messengers matter.** Many affected vehicle owners targeted by the pilot had received prior outreach from vehicle manufacturers, yet did not have their vehicles repaired until they were urged to do so by a trusted local community member. In in-person interactions, many of these vehicle owners expressed that they would have been motivated to have the repair done earlier if they learned of it from community-based sources such as family, mechanics, insurance agents or franchised or independent dealers with whom they have a relationship.
- **Frequency matters.** When field personnel were able to interact directly with affected vehicle owners on a daily basis, they were able to more fully discuss the urgency of the Takata recalls, address misperceptions, identify barriers to repair completion and follow-up on repair appointments to ensure vehicle owners completed the repair.
- **Traditional recall outreach may be insufficient.** Many affected vehicle owners did not remember receiving recall notifications and had limited awareness of the urgency of the Takata recalls, despite vehicle manufacturers having made multiple outreach attempts to vehicle owners in these zip codes.
- **Community events provide gathering places where field personnel can identify multiple unrepaired vehicles.** Events such as swap meets, movie nights, school VIN checks and community festivals are efficient locations to search for and identify unrepaired vehicles. Field personnel consistently found that 10%-15% of all vehicles at these events had open Takata recalls.

The Monitor also engaged local news media through a series of outreach efforts that complemented the grassroots events and community initiatives. During press conferences in

each of the three targeted areas, representatives from multiple affected vehicle manufacturers joined civic leaders for a press conference and airbag inflator repair demonstration to spread awareness of the recall efforts, illustrated in Figures 19-22 below. Vehicle manufacturers also engaged their respective dealers, field personnel and call centers to prepare them for increased vehicle owner activity from this effort.

Figure 19: NHTSA Deputy Administrator Heidi King addresses attendees at a press conference held in Pembroke Pines, FL, on June 7, 2018



Figure 20: Sergeant Rodney Castillo, first responder to a fatal incident involving an exploded Takata inflator, addresses attendees at a press conference held in Mission Hills, CA, on June 11, 2018



Figure 21: Faizan Hanif, brother of victim of a fatal Takata-related incident Huma Hanif, discusses the importance of checking for open recalls at a press conference held in Sugarland, TX, on October 10, 2018

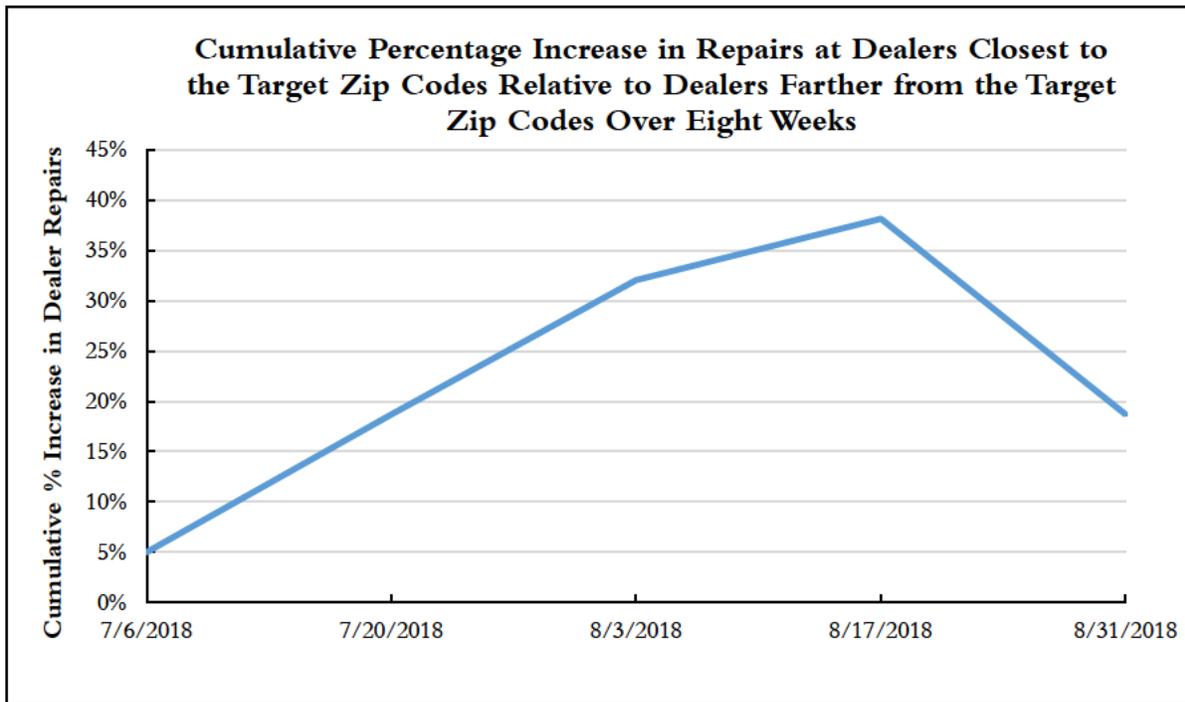


Figure 22: A Toyota Field Technical Specialist demonstrates how to repair an airbag inflator at a press conference in Pembroke Pines, FL, on June 7, 2018



Community-based communications, combined with enhanced local media coverage of the Takata recalls, have contributed to a significant increase in repair rates within the zip codes targeted by the pilot. Local dealerships closer to the targeted zip codes saw the greatest increase in repair rates. Figure 23 below shows, for example, the cumulative increase in bi-weekly repairs based on dealerships' proximity to the zip codes targeted by the grassroots pilot in the San Bernardino area near Los Angeles. Dealer repair rates increased by an average of more than 30% for dealers closest to the targeted communities.

Figure 23



Vehicle manufacturers have also engaged in independent community-based communications pilots over the past year, with positive results. For example, one affected vehicle manufacturer has launched a community engagement initiative that focuses on three high-risk markets—Florida, Texas and California—and includes outreach activities such as earned and paid media discussing the Takata recalls, VIN checks at large events such as concerts and sporting events, dealerships extending their service hours, displaying Takata-related collateral and communicating directly to vehicles owners through social media, email and mail.

Overcoming Owner Inconvenience

Addressing vehicle owner inconvenience is another key to further success in the Takata recalls. The importance of overcoming owner inconvenience was reaffirmed as recently as October 2018, by the Monitor-led survey of affected vehicle drivers. Forty percent cited inconvenience as their reason for not having the repair completed, 41% of respondents said they would be more motivated to complete the repair if the dealer provided a free loaner vehicle and another 33% indicated they would want a guarantee that the repair would be completed within a short period of time.

Over the past year, many vehicle manufacturers have made strides in implementing or expanding services such as free mobile repair, extended service hours, free towing and free loaner vehicles.

Mobile Repair

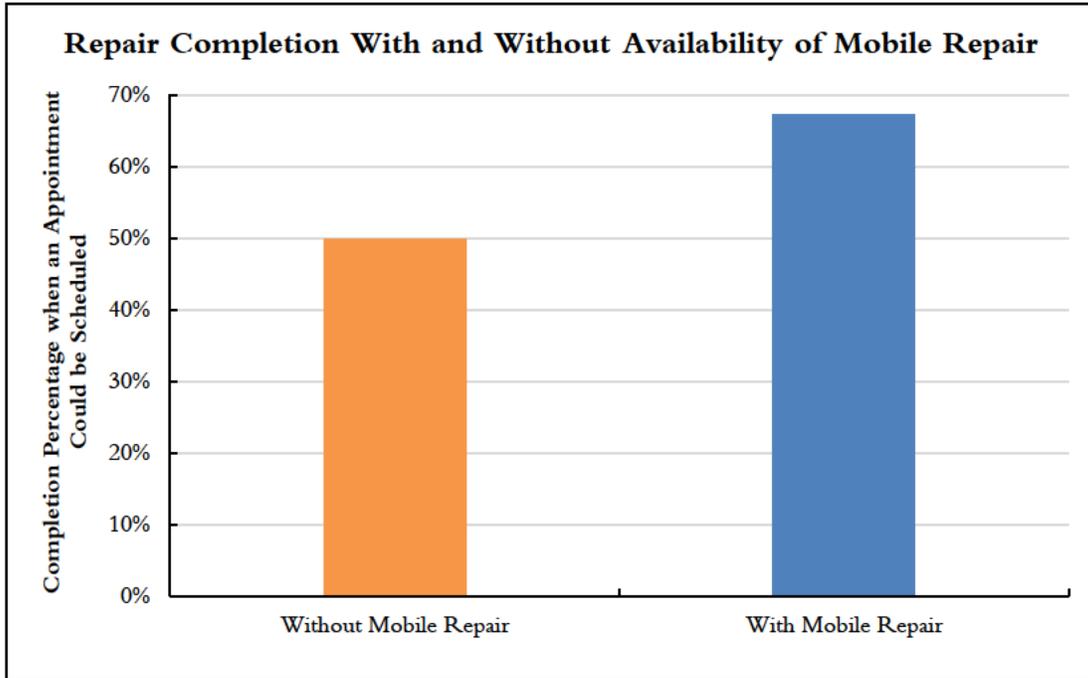
During focus groups and in-depth interviews conducted by the Monitor in connection with a coordinated canvassing pilot, most affected vehicle owners expressed that their primary reason for not completing the repair before being canvassed was that they did not have time to bring their vehicles into a dealership. For these same owners, and many others who had not been responsive to prior outreach, the availability of free mobile repair service was essential in motivating them to schedule and follow through with a repair appointment. For example, one interviewee cited his familial obligations as a single parent who worked long hours as the impediment to his scheduling a dealership repair, but when he learned that a mobile repair service could come to his home to complete the repair for free, he was willing to have his vehicle repaired. For owners who used a mobile repair service, many identified it as “easy” and “hassle-free”.

Canvassers from the coordinated canvassing pilot—in which seven affected vehicle manufacturers offered mobile repair services either through a dealership or a third party—reported that the ability to offer mobile repair enhanced their ability to schedule repair appointments and increased the likelihood that the appointments would be converted to completed repairs. In Monitor-led focus groups, approximately 85% of vehicle owners who had their vehicles repaired through mobile service said that they would prefer mobile repair for future recalls.

In focus groups conducted by affected vehicle manufacturers in July and August 2018, participants overwhelmingly preferred mobile repair service over a cash incentive for the completion of a Takata repair at a dealership, and noted that vehicle manufacturers’ offer of mobile service highlighted the urgency of the repair.

Figure 24 compares the rates at which repairs were completed when mobile repair was available versus when it was not for one affected vehicle manufacturer that participated in the coordinated canvass. The orange bar shows the rate at which repairs were made when the address was correct and the canvasser spoke to someone who could reasonably schedule an appointment when mobile repair was not available. The blue bar shows the same rate after this vehicle manufacturer began to offer mobile repair. The repair rate was 35% higher when mobile repair was offered.

Figure 24



More than half of affected vehicle manufacturers now offer some form of free mobile repair service for Takata recall repairs in some markets, either through franchised dealers or through third parties. Some affected vehicle manufacturers are using a combination of their dealer networks and third-party vendors to develop comprehensive nationwide mobile repair strategies and are seeing remarkable success after offering these services. Figure 25 below shows the cumulative number of repairs made using the mobile repair service offered by one affected vehicle manufacturer. The light blue bars show repairs made using a third-party mobile service vendor, and the dark blue bars show repairs made by the manufacturer's dealer's mobile repair service. This manufacturer initially offered mobile repair only through a third-party vendor in a few discrete locations, but later expanded its mobile repair program to offer it through its own dealers, enabling a substantially broader geographic reach. From January to September 2018, the manufacturer's mobile repairs increased six-fold. Many of the vehicles which received mobile repairs were more than ten years old, or were found at used car auctions or dealerships, making it unlikely that the manufacturer would have completed these repairs without mobile service.

Figure 25

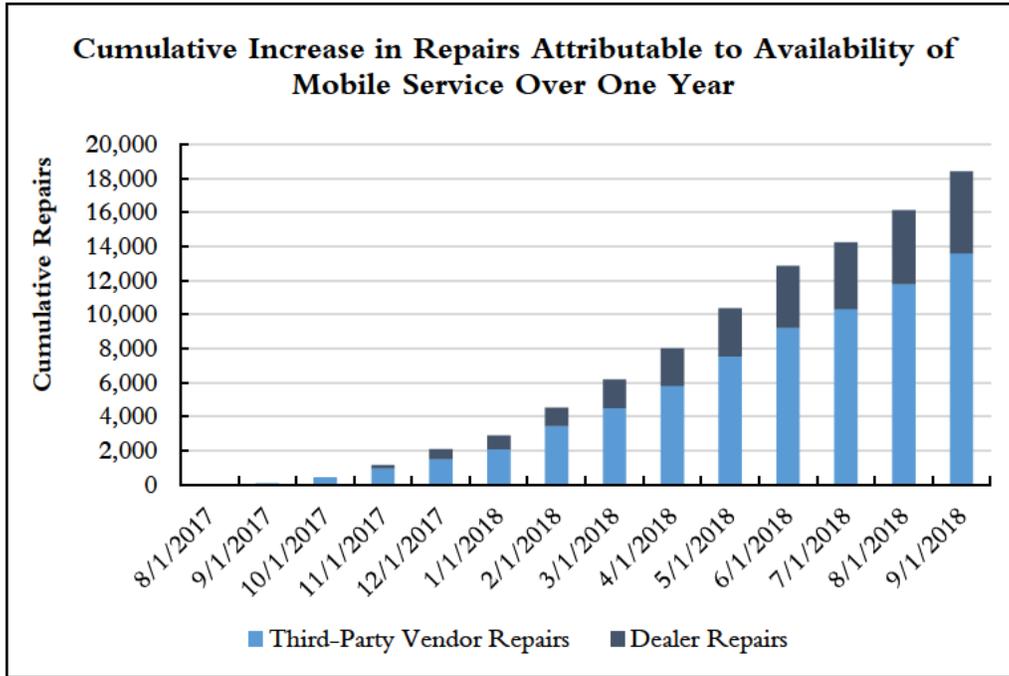
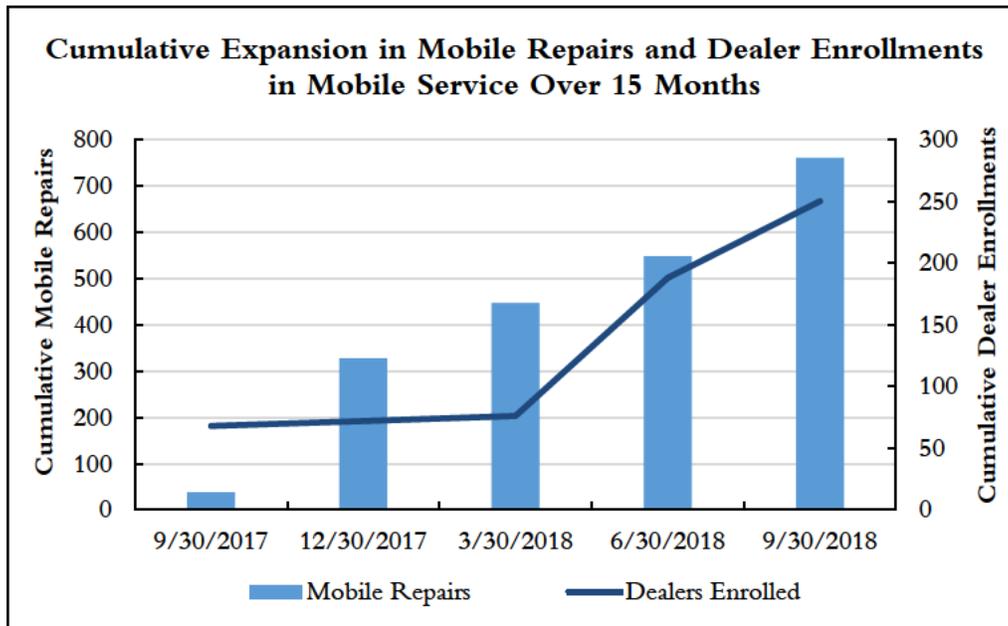


Figure 26 below shows the cumulative mobile repairs for a manufacturer that has been steadily increasing the number of dealers offering mobile repairs from September 2017 to the present. This affected vehicle manufacturer used dealer testimonial videos to generate interest among dealers in offering mobile repair and assisted dealers in hiring additional qualified technicians.

Figure 26



Other Methods to Address Owner Inconvenience

Other programs to reduce vehicle owner inconvenience—such as free loaner cars, shuttle services, ride-sharing services, towing and extended service hours at dealerships—have also successfully overcome barriers to recall completion. Many vehicle owners may need to use their vehicles throughout the day or during available mobile repair service times, and the availability of a free loaner vehicle, or an evening or weekend repair appointment, permits the vehicle owner to have the repair completed at a more convenient time.

Extended Service Hours

The personal commitments of affected vehicle owners during traditional franchised dealer service hours can make scheduling and keeping a recall repair appointment challenging, particularly for households with only one vehicle. Recall outreach materials often do not include individual franchised dealers’ hours of operation, or whether extended service hours are offered, because the use of extended service hours varies across dealers. One affected vehicle manufacturer created a program in which its dealers host repair events during evening and weekend hours that include food, music and games. These programs ran from May through August 2018 and led to over 5,000 repairs. This manufacturer noted that these events were particularly successful for families and households with only one vehicle. As a result of the success of these events, the vehicle manufacturer plans to expand this effort.

Free Towing

Free towing of affected vehicles to and from dealerships is an important service for many affected vehicle owners who do not have the time or resources to physically drop their vehicle at the dealership, or are nervous to drive their vehicle knowing it contains a defective Takata inflator. For example, in Monitor-led canvassing of high risk vehicles, vehicle owners

requested that their vehicle be towed to and from the dealership for approximately 40% of the repairs that were completed.

Twelve affected vehicle manufacturers offer free towing to dealerships in certain circumstances. Though all vehicle manufacturers can benefit from this, certain luxury brands have communicated this as a preferred option for their vehicle owners, as they have smaller dealer networks, repair times are often longer, there is a higher risk of damaging a vehicle through a mobile repair given some vehicle configurations and often the vehicle owner prefers to have additional services performed while the vehicle is at a dealer. The owners of these vehicles often also have more than one vehicle available, do not use the vehicle daily and are not as inconvenienced by being without their unrepaired vehicles for an extended period of time.

Loaner Vehicles

Nearly all affected vehicle manufacturers have made loaner vehicles available to some degree to vehicle owners completing Takata recall repairs and, in some instances, vehicle manufacturers have offered free long-term vehicle rentals due to parts constraints. Many affected vehicle manufacturers have also analyzed dealers' use of the manufacturer's existing loaner vehicle programs to try to enhance use of the programs. For example, one vehicle manufacturer now reminds dealers of available loaner vehicles when discussing missed opportunity reports—instances in which vehicle owners have visited a franchised dealer when parts were available but not completed the recall repair—to highlight the importance of dealers properly communicating the availability of this service. Another vehicle manufacturer has noted that during periods in which it has increased dealer incentives connected to completing Takata recall repairs, dealers have used loaner vehicle programs to motivate vehicle owners to schedule and follow through with repair appointments.

Communicating the Availability of Services to Address Inconvenience

Notwithstanding affected vehicle manufacturers' offering services that minimize owner inconvenience, there is still much room for progress in clearly communicating the availability of and broadly implementing such services. Some manufacturers have not yet effectively conveyed these programs to vehicle owners. Many manufacturers that have communicated the existence of these programs have not done so clearly or prominently. Some have used small font that may be lost in the rest of a communication's content. Franchised dealers and affected vehicle manufacturer call centers can more clearly and readily communicate the availability of services designed to alleviate owner inconvenience.

Engaging Dealers

Franchised dealers continue to be critical players in successful recall strategies. When affected vehicle manufacturers engage franchised dealers, dealers tend to become more proactive in their recall outreach efforts, more likely to assist vehicle owners in overcoming barriers to recall completion, more likely to take advantage of services to overcome owner inconvenience, more likely to discuss challenges and best practices—often gleaned from interactions with their local communities—with the vehicle manufacturer and less likely to miscommunicate parts availability.

Over the past year, the Monitor has continued to see examples of the importance of dealer engagement and learn about the reasons many dealers cite as barriers to engagement, as set forth in Figure 27 below.

Figure 27: Observations Regarding Franchised Dealerships

Finding	Observation
Many dealers view themselves as detached from recalls	Historically, franchised dealers expected affected vehicle manufacturers to manage recall outreach independently.
Many affected vehicle owners expect engagement from dealers	Many affected vehicle owners expect to be contacted by local dealers regarding safety recalls as a reliable source for information even for vehicle owners who did not purchase their vehicles at that dealership. Vehicle owners also rely on franchised dealers to understand parts availability, confirm that the repair is free, understand the urgency and risk of the defect and work with the vehicle owner to schedule a convenient repair.
Dealers do not always fully deploy available recall services	Some dealers do not offer services such as free loaner cars, mobile repair, extended service hours or shuttle services, even where the relevant manufacturer offered reimbursement for such services as a policy. In some cases, the dealer indicated it would need to keep the vehicle for several days to complete the repair, which should typically only require 1-3 hours.
Dealers are sometimes uninformed as to parts availability	Franchised dealers sometimes have been unaware of parts availability, which has dissuaded many vehicle owners from having their vehicles repaired. Many affected vehicle owners have reported that when they had contacted franchised dealers they were told replacement parts were not available when parts were in fact available.
Dealers do not always follow up with affected vehicle owners	Affected vehicle owners reported that franchised dealers did not follow up with them to have repairs scheduled after parts became available. In focus groups and interviews, vehicle owners expressed that they had received outreach, contacted a franchised dealer and were told they would be contacted when parts became available. When they were not contacted, vehicle owners presumed that either parts were not available—though parts in fact were available—or that the matter did not require their immediate attention. As a result, these owners disregarded subsequent outreach.

There is potential, and need, for improvement. Franchised dealers have expressed that they are capable of conducting effective outreach to vehicle owners and often have valuable insights into the tastes and preferences of their local communities. Many franchised dealers have also sought additional information regarding their unrepaired vehicle-owner population, as well as support from the vehicle manufacturer so that they can begin initiatives such as mobile repairs, direct mail outreach, phone calls to vehicle owners, extended service hours and unique, local recall repair events. But these efforts tend to be idiosyncratic and industry-wide consistency is lacking.

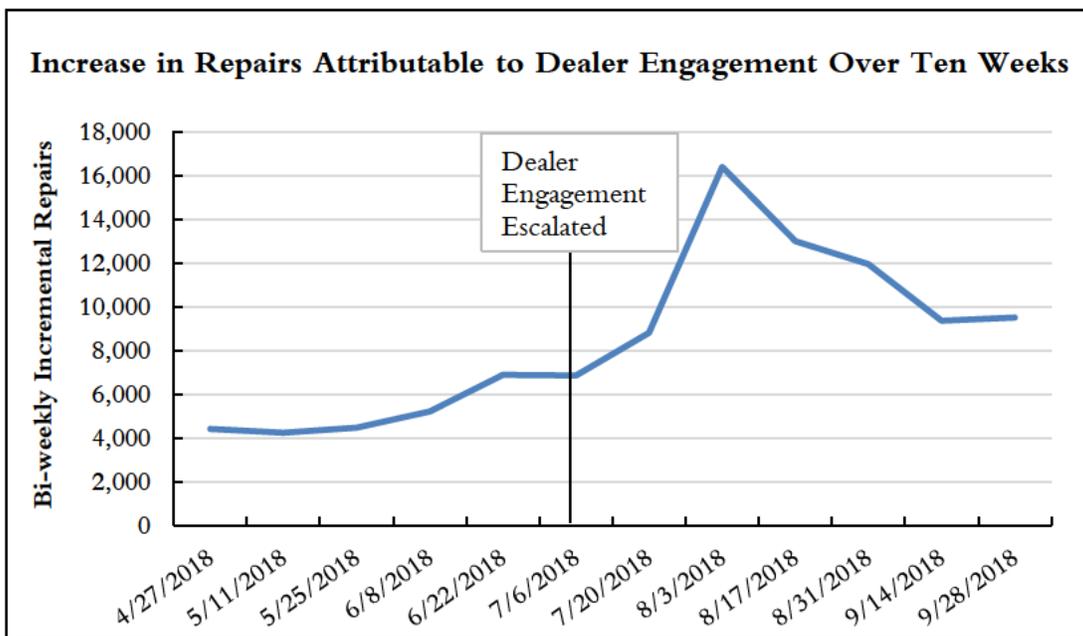
Affected vehicle manufacturers can develop and deploy more comprehensive dealer engagement strategies in order to leverage dealers' willingness to assist with the Takata recalls. Figure 28 below summarizes various effective dealer engagement strategies.

Figure 28: Effective Franchised Dealer Engagement Strategies

Strategy	Implementation
Communicate with dealers frequently	Frequently communicate with dealers regarding availability of parts and services to minimize owner inconvenience, training about the Takata recalls, communications best practices and other support for dealer outreach.
Gather feedback from dealers	Through field personnel, dealer councils, dealer roundtables and industry associations, gather dealer feedback to learn about challenges and best practices from dealers and new opportunities to develop programs to increase repairs.
Provide refreshed, comprehensive vehicle owner information	Provide dealers with information on affected vehicle owners in their respective areas for recall outreach purposes—including up-to-date contact information from both DMV and non-DMV sources.
Provide dealers with communications tools for Takata recalls webpages	Provide dealers with website best practices, information content and digital tools to permit them to provide viewers with clear, accurate information about the Takata recalls and easy ways to schedule appointments on their websites. Digital tools can include online scheduling of appointments at dealerships and through mobile repair units; prominent statements, videos or visuals about the Takata recalls; user-friendly VIN lookup tools; information about the availability of parts; and translations of important points about the Takata recalls to other languages.
Provide outreach materials	Develop and share resources to support dealer outreach, including outreach messaging, scripts and templates, dealership training materials and external signage for display onsite at dealerships.
Analyze dealer service capacity and prioritize Takata recall repairs	Work with dealers to analyze service capacity and ways Takata recall repairs can be prioritized and completed for affected vehicle owners quickly, such as extended service hours and mobile repair services.
Support dealers' engagement of third parties	Identify third parties such as local auctions, used car dealers and independent repair facilities within a dealer's area of influence and encourage dealers to engage these entities to coordinate on repair activity.
Develop individual dealer plans	Develop individualized dealer plans for the Takata recalls—setting out the number of unrepaired vehicles assigned to the dealer, with segments broken out based on attributes such as registration type and proximity to dealership, and clear repair goals for dealers to meet based on the segments provided. Where dealers underperform, have dealer review meetings to identify barriers and challenges dealers are experiencing and create remediation plans to ensure dealer accountability and incentivize dealers to meet their goals.

Over the past year, affected vehicle manufacturers have increasingly recognized the importance of a well-informed and engaged dealer network and have created communications and incentive structures that leverage manufacturer field personnel to maximize the capabilities of dealer networks. For example, in July 2018, one vehicle manufacturer began assigning recalled vehicles to its dealers for outreach, providing dealers with customer contact information and messaging and a financial incentive to its field personnel to regularly measure and motivate higher performance from franchised dealers. Figure 29 shows the incremental repairs of this vehicle manufacturer’s affected vehicle population during the two months before and after it began its escalated dealer engagement in July 2018. In the month and a half following the implementation of this initiative, the manufacturer’s incremental repairs more than doubled. Thereafter, elevated repair trends were sustained compared to pre-engagement months.

Figure 29



Another affected vehicle manufacturer began tracking key performance indicators for dealers, providing dealers with comprehensive owner contact information, collecting updated owner contact information from dealers, actively monitoring dealers’ missed opportunities and promoting the AirbagRecall.com app to its dealers. A third vehicle manufacturer has successfully increased dealer engagement repairs for a sub-population of its highest-risk vehicles by offering dealers further incentives for every repair of this type of vehicle, creating video messaging by company executives emphasizing the importance of the recalls, creating individualized dealer plans, implementing towing services and soliciting feedback from dealer councils.

Vehicle manufacturers that have been using more robust dealer engagement strategies have seen positive trends in repair rates. Figure 30 below shows higher completion percentages for Priority Groups 1-3 for those vehicle manufacturers that have adopted more robust dealer engagements strategies as compared to manufacturers that have adopted dealer

engagement strategies to a low or moderate degree. Figure 31 below shows the same for Priority Group 4.

Figure 30

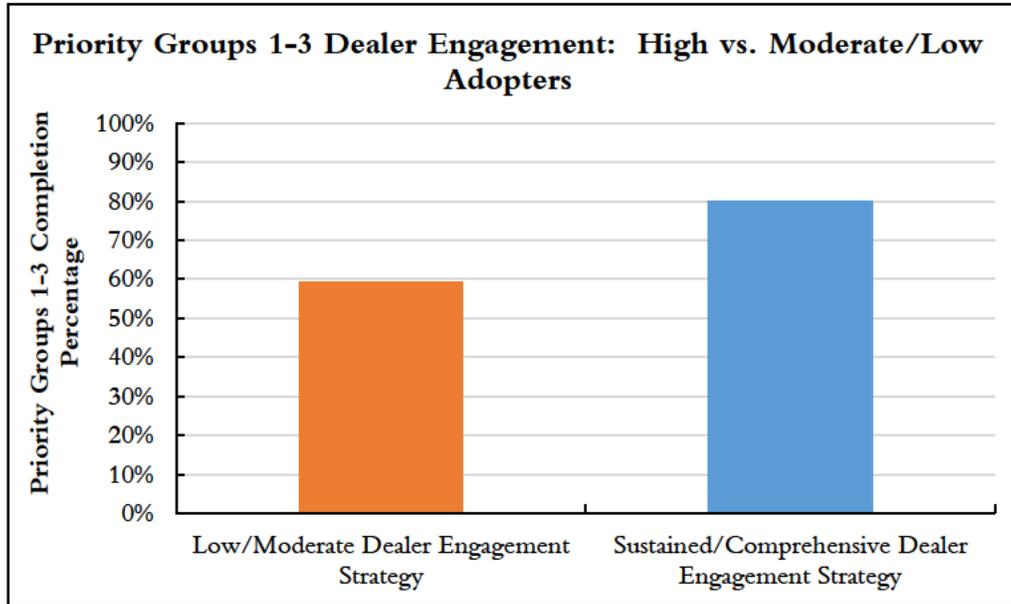
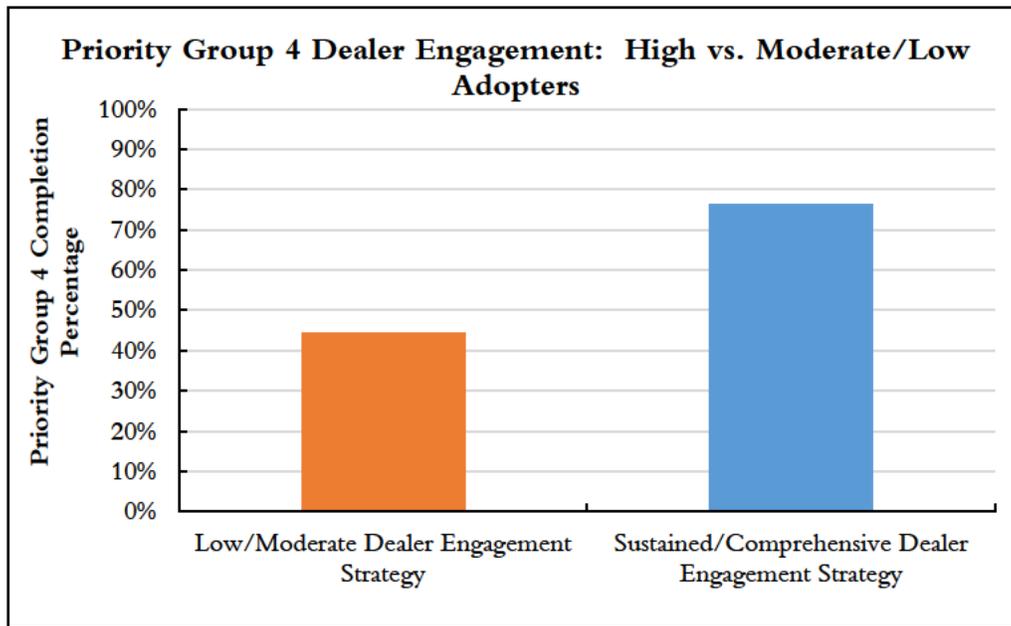


Figure 31



Engaging Other Third Parties

The magnitude of the Takata recalls requires collaboration with industry stakeholders beyond vehicle manufacturers and their franchised dealerships. State DMVs,

independent repair facilities and automobile insurers have unique relationships with vehicle owners that can be leveraged to serve as trusted communications channels for recall outreach, especially for owners of older vehicles who do not have an active relationship with a franchised dealer. Independent repair facilities and insurers also may maintain contact information for affected vehicle owners that can be more current than DMV registration information.

Historically, a common barrier to successfully engaging third-party stakeholders was the inability to check a large number of VINs efficiently. In March 2018, a partnership of industry trade groups launched the Vehicle Recall Search Service, also known as the “batch lookup” tool, which allows users to search for open recalls on up to 10,000 VINs through a single search. Equipped with this tool, third parties can now check entire inventories of vehicles or vehicle owner customer lists for open recalls quickly and efficiently. Affected vehicle manufacturers can increase their repair rates by encouraging third parties to use the batch lookup tool, advise customers of open recalls and engage their customers about the urgency of repairing their defective Takata airbag inflators.

Engaging State Departments of Motor Vehicles

State DMVs can serve as highly effective messengers for recall outreach. Communications from a state DMV are less likely to be perceived as “junk mail” and thus more likely to be opened and read by affected vehicle owners.

Many state DMVs had in the past been hesitant to engage on the Takata recalls with individual affected vehicle manufacturers. The vehicle manufacturing community has recently engaged DMVs more efficiently, using a single vehicle manufacturer representative to streamline the process for outreach initiatives. Coordination is occurring across 16 vehicle manufacturers to create and approve informational content, posters, images and videos that can be distributed to DMV offices. Many state DMVs are now helping spread the message to vehicle owners, variously posting videos and Takata-related information on websites, coordinating as to mailings to vehicle owners, using emissions and inspection stations to check vehicles for open recalls and communicating with residents about the Takata recalls through social media.

This is an unprecedented development. Recent state DMV outreach letters have doubled, and in certain instances tripled, repair rates. Figures 32 and 33 below show the immediate impact on repairs in Louisiana and New York (blue for each) as compared to repairs in other states within the same Zone⁵ but with no DMV letters sent (orange for each).

⁵ The United States and Territories are divided into Zones A, B and C under the ACRO, based on the relative levels of high heat and humidity in those areas, which affects the risk of inflator explosion.

Figure 32

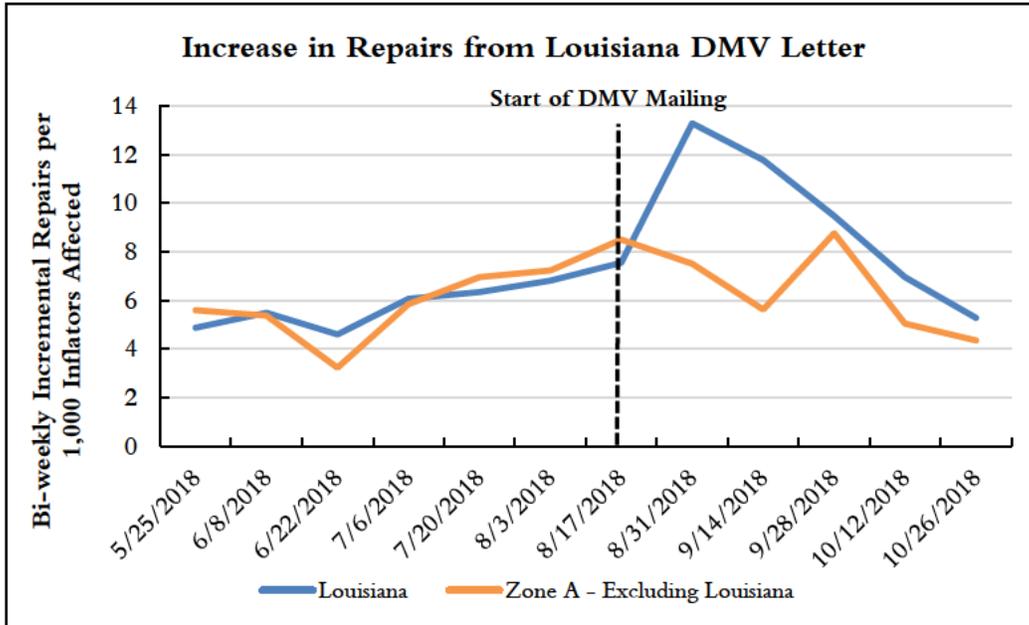
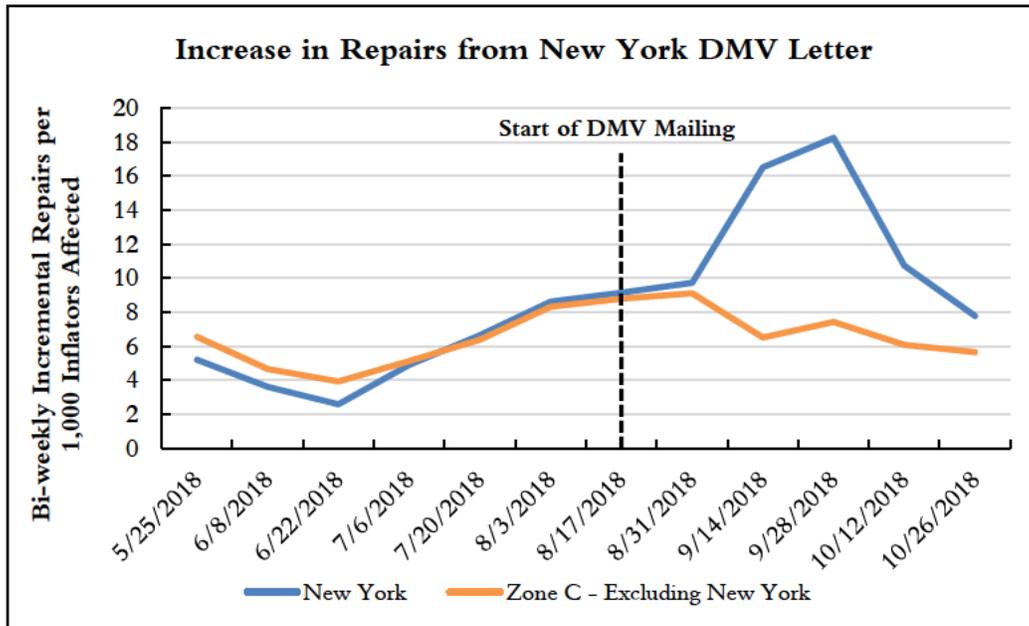


Figure 33



Discussions are underway to expand DMV engagement to additional states and further systematize state DMV outreach, including the possibility of sending further reminder letters to vehicle owners who have not yet completed the recall repair.

Engaging Independent Repair Facilities (IRFs)

Independent repair facilities—including service and repair facilities and collision shops—are trusted points of contact for many affected vehicle owners who lack established relationships with franchised dealers and can play an important role in vehicle owner notification efforts. Over the past year, many vehicle manufacturers have begun engaging with IRFs, both through individual efforts and in collaboration with one another and the Monitor. For example, one vehicle manufacturer has been leveraging its existing relationships with its parts distribution software provider to identify vehicles at IRFs with open recalls. The manufacturer has identified more than 12,500 IRFs subscribed to this service, which sends the IRF a message indicating that a particular vehicle has an open recall when other parts for the vehicle are ordered. The program includes a tracking mechanism and incentive for the IRF if the customer completes the repair within 30 days of notification. Another vehicle manufacturer has been working closely with its wholly owned automotive parts brand, which maintains relationships with more than 15,000 IRFs that are preferred automotive service centers for the vehicle manufacturer. The vehicle manufacturer distributed a letter and an informational poster (on behalf of all vehicle manufacturers) about the recalls to be displayed at the IRF facilities. This vehicle manufacturer is also developing universal recall outreach materials, neutral as to vehicle make/model, to distribute to a broad range of IRFs. Another vehicle manufacturer is taking steps to involve dealers in the IRF outreach process to facilitate greater coordination between them, including providing a real-time notification to a local dealer to inform it when a vehicle with an open Takata recall has been identified at a local IRF. Several other vehicle manufacturers have also encouraged franchise dealers to develop relationships with IRFs so that IRFs will notify dealers of these customers on their own.

There is more work to be done to successfully engage IRFs. Although many vehicles are passing through IRFs, recall repair conversion rates are still low. Affected vehicle manufacturers have estimated that millions of vehicles with open Takata recalls are visiting IRFs each year, but fewer than 20% of these vehicles are repaired within 90 days after an IRF is notified of an open Takata recall for a vehicle visiting its facility. Given these statistics, the Monitor sought to better understand the barriers IRFs face in communicating with vehicle owners about their open recalls. In April and July 2018, the Monitor, with the assistance from two industry associations representing IRFs, distributed two surveys to more than 715 IRFs across 48 states, and included independent mechanics, auto-body repair facilities and collision facilities. Results of these surveys are set forth in Figure 34, and indicate that while many IRFs understand and appreciate the urgency of the Takata recalls, various constraints have inhibited effective communication with customers.

Figure 34: Observations from IRF Survey

Finding	Observation
Many IRFs do not actively check for open recalls or check all vehicles they service	Nearly one-third of IRF respondents indicated that they do not check vehicles for outstanding recalls at all. IRFs that do check only check approximately 60% of the vehicles they service. Many IRF respondents indicated that the reason they may not check for open recalls is because of the additional time and resources required without commensurate incentives.
Most IRFs do not proactively notify customers of open recalls	More than 80% of IRF respondents indicated that, when a vehicle at their shop is flagged for an open recall, their follow-up is limited to informing the owner of open recall status; less than 15% of IRFs stated that they referred the vehicle owner to a dealership to have the recall repaired, and nearly 75% indicated that they were not likely to contact customers whose vehicles have open Takata recalls.
IRFs are willing to engage	Ninety-three percent of IRF respondents agreed that helping customers navigate an open safety recall would improve their relationship with their customers.
IRFs should be provided with Takata-related materials, information and incentives	Sixty-five percent of IRFs surveyed indicated that they would be willing to provide vehicle owners with information about the Takata recalls and over 70% indicated that a monetary incentive would influence their willingness to work with nearby dealerships.
There is a valued relationship between dealers and IRFs	Ninety-eight percent of responding IRFs did not view franchised dealers as competitors but instead perceived them as valuable local partners, and 59% expressed willingness to help schedule recall repairs at local franchise dealerships.

The Monitor’s community amplification pilots, which involved extensive engagement with local IRFs, confirmed these findings. During the pilot, participating IRFs expressed to the Monitor that they understood the importance and urgency of the Takata recalls, but had limited resources. Through engagement with these IRFs, the Monitor was able to help the IRFs use the AirbagRecall.com app and website to check vehicles for open Takata recalls. In addition, the Monitor provided the IRFs with communication materials that could be placed in and distributed at their facilities regarding the urgency of the Takata recalls, the nature of the defect and the risk to vehicle owners of not having their vehicles repaired. While some IRFs indicated that they would require additional incentives to dedicate the necessary resources to proactively engage customers regarding the Takata recalls, many others were willing to proactively be involved in recall outreach without any kind of incentive.

Engaging the Insurance Industry

Automobile insurers have the potential to serve as valuable recall partners. Insurance companies often have accurate, up-to-date vehicle owner contact information for billing and payment purposes which could be used to locate and contact affected vehicle owners. In addition, insurance companies could serve as effective messengers as to recall outreach, as many vehicle owners in focus groups have indicated a preference for receiving recall information from

their insurers, viewing such notifications as more legitimate because insurance companies have a vested interest in safety.

Over the past year, several vehicle manufacturers have made substantial efforts to engage insurance companies. In the fourth quarter of 2017, one affected vehicle manufacturer was able to leverage its relationship with an insurance company to send co-branded recall notification emails to vehicle owners. The owners were identified through both the vehicle manufacturer's records and the insurance provider's records. Completion percentages were substantially higher (33% higher) among vehicle owners who received emails sent by the insurance company as compared to vehicle owners who received emails sent by vehicle manufacturers. In July 2018, another vehicle manufacturer worked with the same insurance carrier to send a Takata recall notification letter to vehicle owners using the insurer's contact information. Even though this communication was not branded as from the insurance carrier, 20% of the population that received these letters completed their recall repair within 90 days of the mailing—a significant increase.

Many insurance companies, however, continue to cite concerns regarding legal risks or liabilities associated with sending recall notifications and potential impacts on their brands as impediments to assisting affected vehicle manufacturers. Vehicle manufacturers and the Monitor will continue to communicate with automobile insurance companies, and their industry associations, to seek to identify ways to overcome these barriers and explore opportunities for recall engagement.

Engaging Auctions

When vehicles are processed through auction houses and sold to buyers such as salvage lots, recyclers, used car dealers, businesses or government agencies, registration data associated with the vehicles often is not updated for a substantial period of time. As a result, manufacturer outreach often does not reach the current owner for these vehicles.

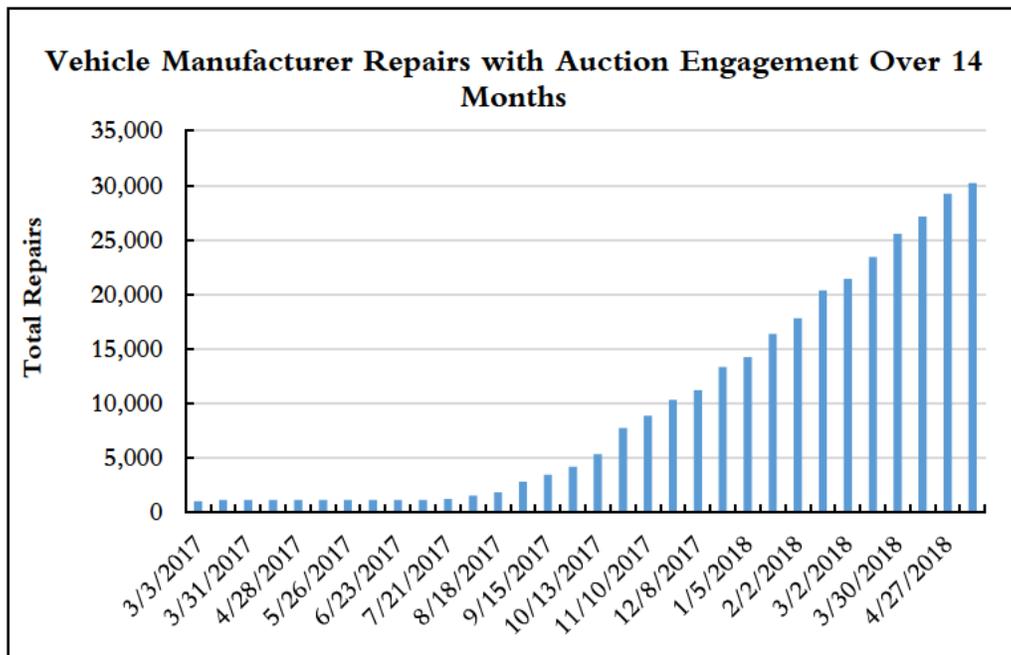
Historically, affected vehicle manufacturers did not engage auction houses and some underestimated the volume of vehicles moving through auctions. Auction houses had also in the past expressed reluctance to assist vehicle manufacturers without any mechanism to search large numbers of VINs for open recalls efficiently. Over the past year, vehicle manufacturers have made progress in developing strategies to effectively engage auction houses, and the batch lookup tool has permitted these auction houses that search VINs for open recalls to do so more efficiently.

One affected vehicle manufacturer has recently developed a pilot process at one auction facility. In the pilot, the auction house checks its incoming vehicles for open Takata recalls and notifies the manufacturer of any open recalls in its inventory. The manufacturer then contacts the vehicle seller to seek permission to repair the vehicle. If the seller permits the vehicle to be repaired, the manufacturer uses a mobile repair service at the auction site. If the seller does not permit the vehicle to be repaired, the manufacturer notifies the vehicle's buyer of the open Takata recall and seeks consent from the buyer to repair the vehicle before it leaves the auction. If the buyer does not permit the vehicle to be repaired at that time, the manufacturer updates its vehicle-owner contact information for that VIN to reflect the new ownership. Thus far, the

vehicle manufacturer has been able to repair nearly 90% of the vehicles with open Takata recalls that have moved through the auction location.

Figure 35 below shows the cumulative effect of another more mature auction program in which a vehicle manufacturer is repairing off-lease vehicles owned by its affiliated finance company. While this program is limited to one seller’s vehicles, and only applies to off-lease vehicles which the vehicle manufacturer financed, this chart demonstrates that, over time, a significant number of vehicles can be repaired at auction facilities.

Figure 35



Engaging Independent Used Car Dealers

Used car dealerships also present a unique opportunity to find and repair vehicles, especially older vehicles which are frequently bought and sold at these dealerships. Most independent used car dealers list vehicle inventories online and provide vehicle identification numbers—permitting vehicle manufacturers to more easily find older vehicles for which registration information is likely inaccurate. Over the past year, the Monitor engaged with an association of independent automotive dealers and found that independent automobile retailers are generally amenable to working with vehicle manufacturers and franchised dealers to facilitate recall repairs but are sensitive to long repair times because they try to sell their vehicles as quickly as possible. Independent used car dealers expressed a greater willingness to permit automakers to use a mobile repair service to repair the vehicles at the used car dealership.

Over the past year, many vehicle manufacturers have piloted initiatives to identify and fix vehicles on used car dealership lots. These vehicle manufacturers have reported that when they are able to identify vehicles listed for sale, and reach the seller of the vehicle, they are able to arrange a repair approximately 15%–30% of the time. This repair rate is among the highest

observed for any unique recall outreach tactic and is particularly valuable in reaching vehicles for which registration information would likely be inaccurate. Though finding used vehicles listed for sale has proven to be an effective means of locating unrepaired vehicles, scaling these programs remains a challenge as independent dealers are an unconsolidated group. In order to scale such programs, affected vehicle manufacturers should develop systems to promptly share identified listings and related contact information with local franchised dealers or mobile repair vendors, who should, in turn, have the resources to arrange for a repair to be completed at the seller's location. If the vehicle has already been sold, franchised dealers and mobile repair vendors should have a system in place to provide new owner contact information to the affected vehicle manufacturer to continue outreach.

Canvassing

Vehicle-owner canvassing continues to be a highly effective outreach strategy for later stages of a recall campaign where the remaining vehicle owners have been unresponsive to prior outreach. The past year has been marked by a significant industry shift toward canvassing, with 13 vehicle manufacturers engaging in canvassing pilots either individually or in conjunction with other vehicle manufacturers and the Monitor.

Canvassing Initiatives

In February 2018, a number of affected vehicle manufacturers engaged in a phased canvassing pilot led by the Monitor in Houston and South Florida. The pilot began with three vehicle manufacturers canvassing in Houston, and grew to 12 by the last phase of the canvass in South Florida. This was the first time in the history of vehicle recalls that vehicle manufacturers canvassed vehicle owners in collaboration with one another.

The zip codes canvassed in the pilot were targeted based on their high density of older, unrepaired vehicles across multiple brands and demographics that posed particularly high barriers to recall completions—such as fewer English-speaking residents, more rental housing units and lower per capita income levels. Between one and three weeks in advance of the first knock on the vehicle owner's door, the affected vehicle manufacturers sent canvass pre-mailers—mailings requiring signature upon receipt—to each vehicle owner. These pre-mailers explained that canvassers would be knocking on doors in the area to assist with scheduling repair appointments, described what canvassers would be wearing (including an image of the shirt worn by the canvassers), and included a phone number that vehicle owners could call to schedule an appointment on their own ahead of the canvass. The pre-mailers were bilingual, with one side in English and the other in the next most prevalent language spoken in the relevant zip code. Over the course of these canvassing pilots, 5,120 vehicles were targeted, 1,633 repair appointments were scheduled—representing 84% of all targeted vehicles for which there was accurate contact information—and 1,488 vehicles were repaired.

Four affected vehicle manufacturers have independently conducted canvassing initiatives or expanded existing canvassing efforts over the past year. One vehicle manufacturer expanded its national canvassing to include all vehicles in Priority Groups 1-3, prompted by its prior success in canvassing a subset of high risk vehicles. Two other vehicle manufacturers have begun canvassing their highest risk vehicles in select metropolitan areas, with a focus on areas with high heat and absolute humidity. At the end of January 2018, a fourth affected vehicle

manufacturer concluded a canvassing pilot in Dallas and has since expanded its canvassing efforts into Florida and Puerto Rico.

Efficacy of Canvassing

Affected vehicle manufacturers that have engaged in canvassing efforts have seen significant increases in completion percentages, including increases in repair rates among segments of their unrepaired vehicle populations that have otherwise been difficult to reach. Where a canvasser interacted with an individual who could reasonably schedule a repair for the vehicle, a repair appointment was scheduled 70% to 85% of the time. For example, Figure 36 below shows incremental repairs in three Houston zip codes that were canvassed with an increase in average repair rates of over 260% between February 2018 and July 2018, as compared to the pre-canvassing average repair rates from October 2017 through January 2018. When canvassing ended in these zip codes in July, repair activity returned to pre-canvassing levels.

Figure 36

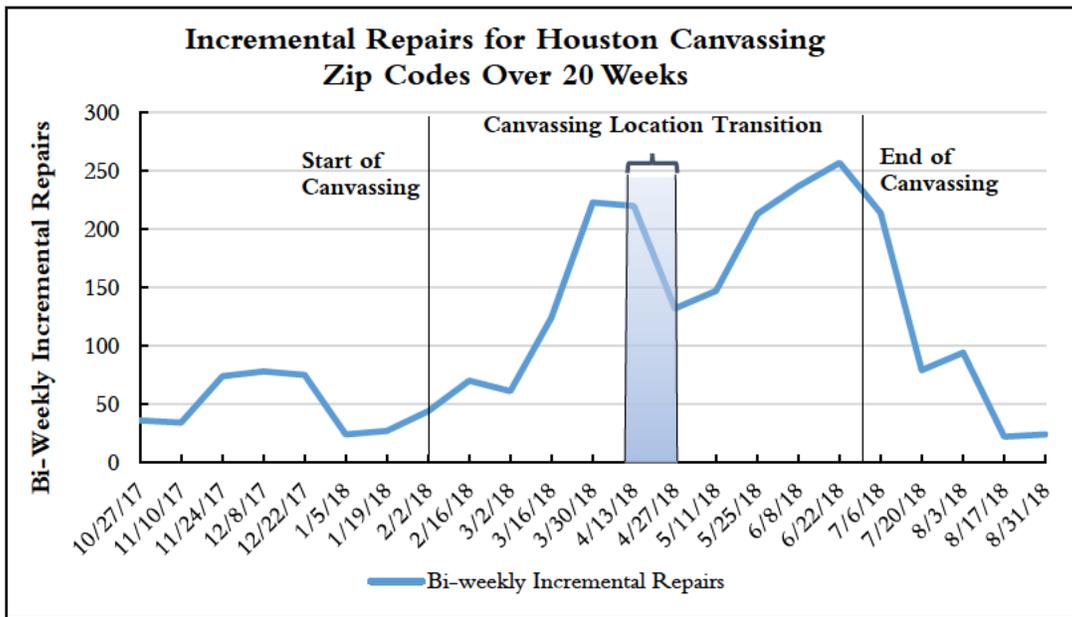
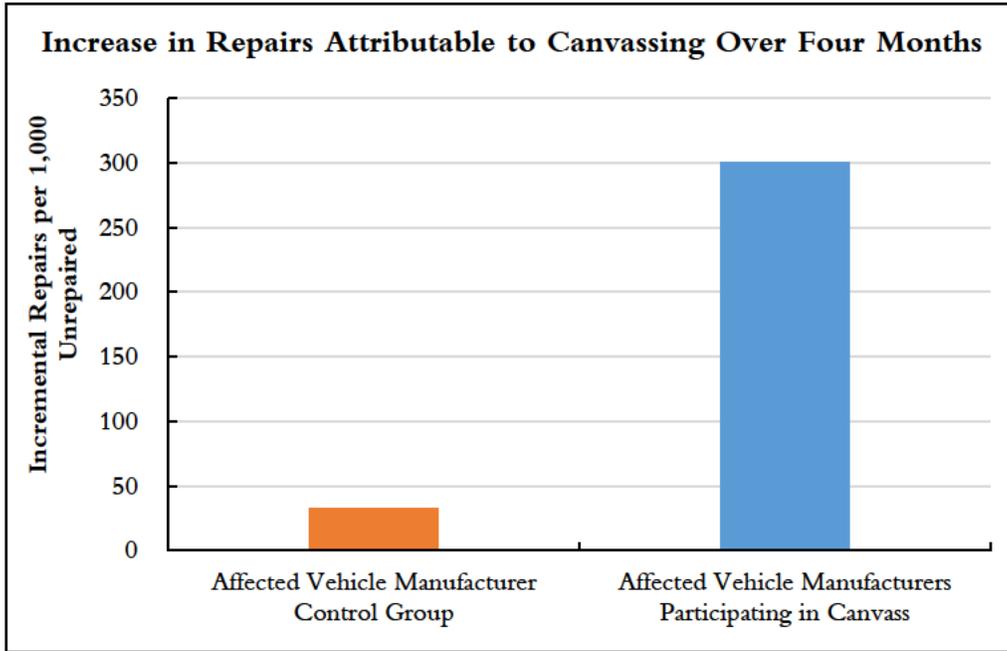


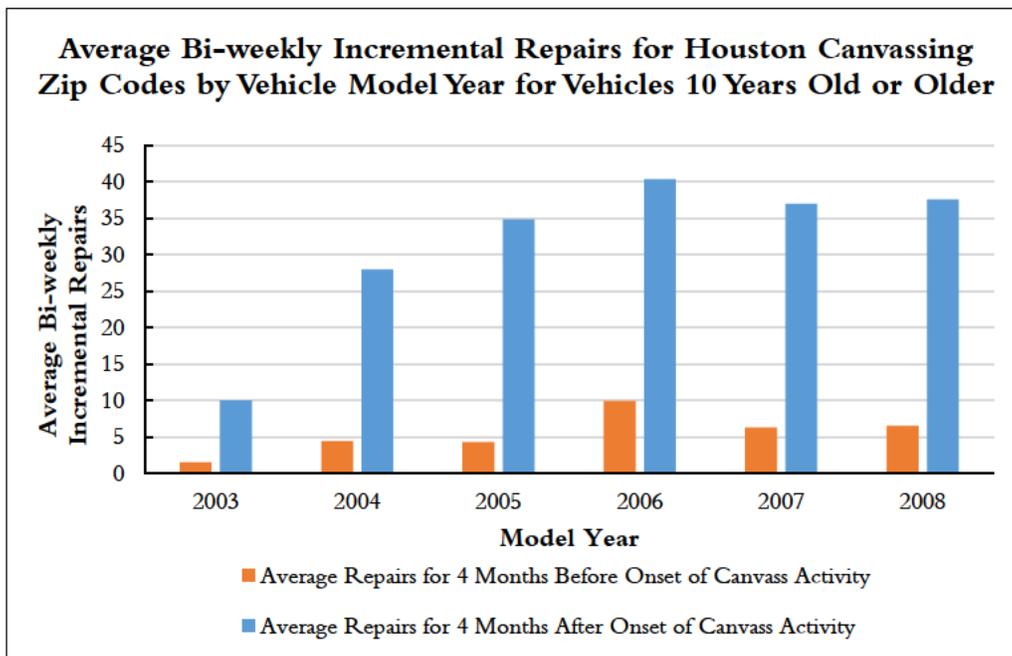
Figure 37 below shows the differences in repair rates between manufacturers that participated in the canvassing targeting the Houston zip codes and a control group. During this phase of the coordinated canvass, vehicle manufacturers participating in the canvass had, on average, over nine times more repairs than the control group over the same nine-week period. Canvassing manufacturers observed approximately 301 repairs for every 1,000 unrepaired vehicles that were canvassed, while non-canvassing manufacturers observed approximately 32 repairs for every 1,000 unrepaired vehicles over the same period of time involving similarly-aged vehicles.

Figure 37



Canvassing also increased repairs among some of the most difficult-to-reach subsets of manufacturers' affected-vehicle populations. For example, vehicle manufacturers that engaged in the coordinated canvass saw, on average, a six-fold increase in repairs of vehicles that were 10 years old or older during the four months after the onset of the canvass, as displayed in Figure 38.

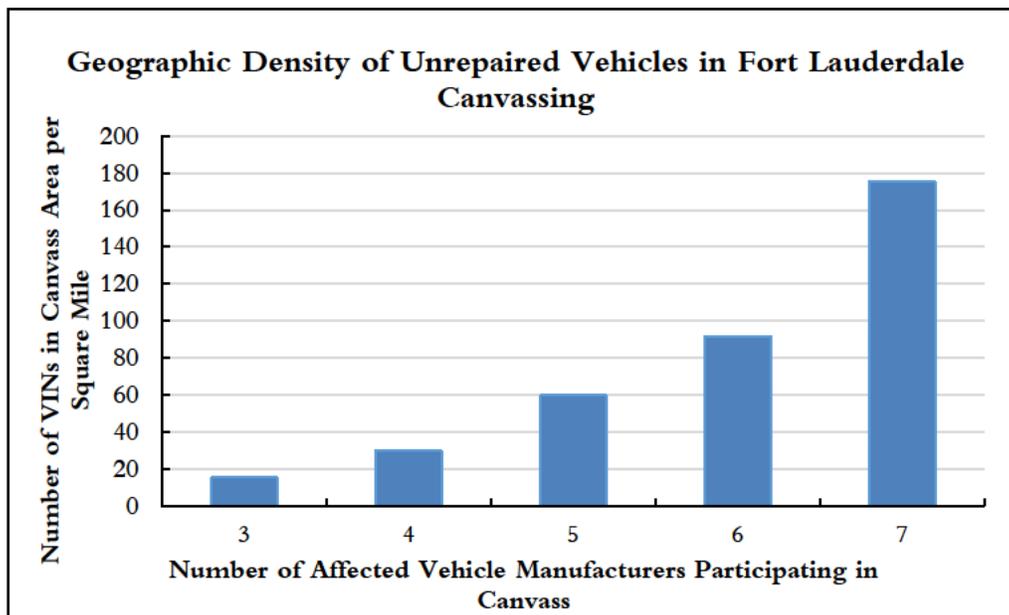
Figure 38



Economies of Scale

The coordinated canvassing pilots also illustrate the efficiencies and economies of scale generated through collaboration across multiple affected vehicle manufacturers. Canvassing can be brand-agnostic, as the message regarding the danger posed by defective Takata inflators and the need to schedule a repair does not need to be specific to any particular manufacturer. The same team of canvassers can thus visit a single household, apartment complex or neighborhood and canvass owners of multiple vehicle brands, as opposed to different teams of canvassers each visiting the same area separately for each different brand. As more vehicle manufacturers participate in a canvass, the density of unrepaired vehicles in a particular area also grows, resulting in a lower cost of repair per vehicle. Indeed, many vehicles targeted by the coordinated canvass were located in or near households where other vehicles targeted by the canvass, but of a different brand, were located. Across the entire coordinated canvass, there was about a 13% overlap of affected vehicles made by different manufacturers but owned by the same individual. As more vehicle manufacturers participated in each phase of the coordinated canvass, the number of unrepaired VINs in each square mile of the canvassing area grew. Figure 39 below shows the relationship between the number of vehicle manufacturers participating in a canvass and the density of VINs to be canvassed per square mile of canvassing area.

Figure 39



Over the course of the coordinated canvass, additional benefits to collaboration among affected vehicle manufacturers became apparent. Using a single canvassing team minimized confusion among community members, who may not understand why multiple sets of canvassers visited their neighborhood for the same purpose. In addition, when trying to raise community awareness of the Takata recalls through grassroots outreach—which can complement canvassing by better saturating the local area with awareness and helping to prime community members to receive canvassers—coordination as to public outreach and earned media efforts by manufacturers helps to ensure residents do not hear conflicting messages regarding the Takata

recalls and news outlets have easier points of access for stories that become more newsworthy as more manufacturers participate.

III. CONCLUSION

This past year has been marked by more vehicle manufacturers adopting sophisticated outreach techniques, the entire industry engaging in unprecedented collaboration to identify best practices to maximize repair rates with cost efficiency and drastic improvements in repair rates for the highest-risk vehicles. But much work remains to be done. Manufacturers should continue to implement the key strategies for recall success, work to develop new strategies aimed at tackling the complex challenges presented by the Takata recalls and collaborate even more with one another to maximize the efficiency and efficacy of recall efforts.

APPENDIX 1: FATALITIES

Confirmed U.S. Fatalities



APPENDIX 2: INFLATOR EXPLOSIONS

Geographic Dispersion of Confirmed Inflator Explosions in the U.S.

