Directorate General of Highways, MOTC

2013 Annual Report

Greater Happiness Brought by Better Living

The Road to Everlasting Dreams and Happiness

A dreamy vision accessible via convenient transportation shows the greater prosperity that highway development brings.

Adhering to a belief that a love for Taiwan starts on the roads, the Directorate General of Highways, MOTC constantly seeks to improve the quality of road services.

To benefit all road users, the Directorate General of Highways, MOTC builds a safe and comfortable driving environment and offers innovative motor vehicle services.

It protects roads, bridges, people, and automobiles as it ushers in a new era of road development and harmony with the natural environment.

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Prosperity from a Highway System – Love of Taiwan

Director General's Preface

By connecting the residents of urban and rural regions while fostering a link between people and land, highways are the scene of countless memories and emotions. At the Directorate General of Highways (DGH) we adhere to the philosophy that a love for Taiwan starts on the roads. Through a combination of highway construction and conscientious motor vehicle services, we bring greater prosperity to the people.

Looking back to 2013, under the leadership of former Director General Wu Men-Feng the DGH continued to advance its vision of building a highway system that promotes prosperity. Primary tasks – road quality, safety of life and property during the flood season, zero worksite safety incidents, convenient public transit, and innovative motor vehicle services – sought to provide the people of Taiwan with a driving environment that is comfortable, economic, caring, safe, and convenient. The diversity of Taiwan's terrain and landforms makes the highway system intricate and complex. Modern driving habits and a high reliance on automobiles mean that significant work and thought is needed for the building and maintenance of highways and managing the vehicles that use them. It is not difficult to imagine the hard work required to complete such monumental responsibilities.

Reason calls for vigilance in times of safety and guarding against potential hazards. In order to protect the life and property of all road users, we developed highway disaster prevention warning mechanisms that are rigorous and reliable. As a precautionary measure, roads were closed 240 times in 2013, and 84 of these times highway disasters followed. The preemptive action kept disaster-related highway injuries and accidents at zero for another full year. In the area of highway construction, major



projects that continued included the Suhua Highway of Provincial Highway No.9 Mountainous Section Improvement Project, the South Link Highway of Provincial Highway No.9 Widening Project, Follow Up to the West Coast Expressway Continuous Construction Project, and the East-West Expressway Construction Projects and Network Improvement Projects. Each plays a decisive role in building a convenient highway network. Other initiatives ¡V including the Highway Improvement Project, road-smoothing projects, regular inspections of bridges on provincial highways and stewarded county highways, and post-Morakot highway rebuilding ¡V allowed us to maintain highway service quality.

Direct management of the nation's 7.2 million automobiles and 15.14 million motorcycles and scooters (hereinafter jointly referred to as "scooters") lies with frontline motor vehicle staff. Their innovative methods for providing a safer, more convenient, and friendlier highway environment include a higher quality and quantity of highway public transit through subsidized replacement of old buses, stricter management of tour bus safety, and joint inspections on road sections prone to accidents. A total of 18 motor vehicle units nationwide reduced the risk posed by new scooter drivers through a pre-license safe driving instruction pilot program. The units also enhanced convenience by eliminating regular renewals for personal-use automobile and scooter registrations and regular driving licenses starting from 2013. Another time- and money-saving policy was reform to the fuel tax levy on scooters, which led payment notifications being sent to owners in line with levies on automobiles. To update registration records for scooters 10 or more years old that had not been driven recently, motor vehicle staff checked for qualifying vehicles, then sent an explanation of scrapping procedures and related documents. By filling out and submitting the documents in person, by fax, by mail, or by email, owners could scrap their vehicles and thereby reduce fuel tax liabilities. Each of the aforementioned measures was introduced to provide easily recognizable improvements. They facilitated a shared public-private vision of building a highway system that promotes prosperity.

Highways are an indispensible part of everyday life and a catalyst for new hope. In the future, we will keep seeking improvements. Starting from the nation's roads, we will expand the love and care we show towards this piece of land, so all highways and the vehicles that drive upon them can continue carrying the happiness of the people of Taiwan.

Director General Jaw, Shing-hsun

All-Out Effort and Continuous Support

Introduction

Across the mountains of Taiwan and from sea to sea, the highway network spreads like a spider web. Besides making transportation more convenient, it bridges the gap between urban and rural areas, broadens the lifestyles of the nation's people, and boosts local industry and tourism. As it brings economic benefits, it provides endless vitality.

Adhering to the philosophy "linking the beautiful life," the DGH constantly pursues the ideal of building "a road to everlasting dreams and happiness." We want assurance of convenient roads, stable bridges, flowing traffic, and safe driving to become proof of Taiwan's high standard of living. By building top quality roads, we provide the best possible service to all road users. Our commitment spreads evenly across all regions and is present no matter the weather. Whenever citizens have a need, highway workers use the opportunity to demonstrate all-out effort and continuous support.

As in the past, we compiled information on tasks completed during the previous year in the form of this annual report. Achievements in planning, new construction, road maintenance, disaster prevention, motor vehicles supervision, etc., are conveyed via themed chapters, so a wide range of readers can recognize the commitment we hold toward our ideals and goals. Then, they can continue to give us the encouragement and praise we need.

The first chapter, Intelligence, features three themes: promotion of the 2013 Transportation Management Calendar and Transportation Management for Holiday Periods in order to ease congestion common during holidays and on certain sections of road; planning of the Tamkang Bridge, which will not only connect Tamsui and Bali but also improve the local landscape, tourism, and recreational activities; and establishing a GIS system for inspection, approval, and cross-checking, to make it easier to grasp highway inventory modifications and access images of completed construction.

Next, Strength describes major construction projects and the benefits they will bring: how the Suhua Highway of Provincial Highway No.9 Mountainous Section Improvement Project will provide east coast residents with a safe route home; how the South Link Highway of Provincial Highway No.9 Widening Project will bring beauty of the countryside closer; how the Follow Up to the West Coast Expressway Continuous Construction Project will move Taiwan closer to the vision of a fully connected coastal highway, how the Hanbao – Xinsheng section of the West Coast Expressway became a model of highway construction by winning the highest

domestic honor in construction – the Golden Quality Award; how the East-West Expressway Construction Projects and Network Improvement Projects raised highway service quality; and how completion of the east coast access roads for the Port of Keelung successfully separated city and port traffic.

The following chapter, Insistence, discusses the advances in highway disaster prevention warning mechanisms that led to a record of more than 1,000 days without a disaster-related highway death or injury; the Highway Improvement Project and how better disaster prevention on mountain roads and the strengthening of bridges have guaranteed traffic safety; the full maintenance efforts on 94 provincial highways, which have provided an all-new road appearance; the regular inspections of provincial highways and stewarded county highways, which have made highway disaster prevention a reality; and continuance of post-Typhoon Morakot rebuilding, which is bringing a fresh appearance back to the land.

Spirit focuses on motor vehicle services: how better public transit reflects the push to save energy and protect the environment; how an end to regular vehicular registration and license renewals is saving people money; how modifications to the scooter fuel tax levy system are raising collection rates; and how the launch of the Intercity E-Bus System is making it easier for people to check bus information and reduce waiting times. Other topics demonstrate the importance and hard work we put into traffic safety: the scrapping of old scooters, building a mechanism for regular training of professional bus drivers, strengthening management of tour bus safety, promotion of safety lectures for people getting their first scooter license, and promotion associated with the anti-drink driving campaign.

The title of the next chapter, Union, reflects the diverse range of services we provide to assist all road users: the online announcement and provision of spatial maps showing provincial highway routes prohibited to buses, along with functions that provide for easy browsing and download; building the third-generation of the motor vehicle and driver information system, a milestone in the move toward smart services; implementation of procedures governing quality differences in construction procurement for the lowest bid method, to prevent the malpractice associated with excessive underbidding; and the holding of an exhibition to mark the launch of a book chronicling Provincial Highway 1 and a related video, to show the impressive history of this north-south highway. Other sections that focus on government ethics demonstrate the DGH's commitment to transparent administration and clean governance.

At the end comes Brilliance, which describes administrative performance, organizational structure, budget enforcement, encumbrances, competition performance, research and development, and major events. Through this content, readers will gain greater insight into the people, affairs, and things that come together to provide highway transit.

Intelligence

Planning Fast and Convenient Transit

Promoting the 2013 Transportation Management Calendar and Transportation Management for Holiday Periods

In order to provide unhindered highway transportation that is convenient for all road users, the DGH compiled information on more than 40 tourist sites, local festivals, and activities held in 2013. Dispersal plans for each event included transportation management measures and shuttle buses. By encouraging people to use public transit rather than drive, reduced time in traffic jams meant better service for all.

Achievements in Transportation Management during Major Events

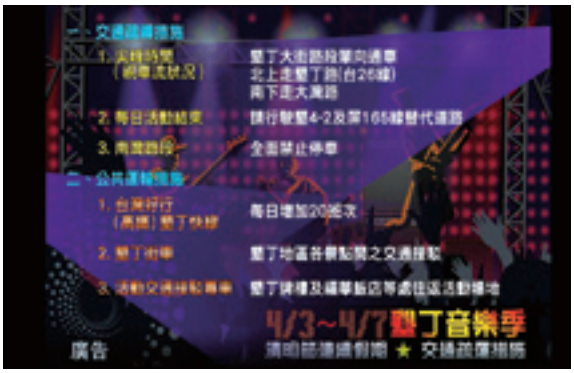
The DGH consulted relevant agencies when formulating comprehensive transportation management plans for events that caused high traffic in 2012. Achievements in easing congestion were as follows.

1. Wuling Farm Cherry Blossom Festival (February 10 - February 28)

Repeated consultations among the DGH, Veterans Affairs Council, Wuling Farm, and related agencies led to the following measures: a limit of 5,000 people a day, introduction of special day-trip cherry blossom-viewing shuttles, discounts on mass transit, and traffic restrictions on Provincial Highway 7A.

Wuling Farm Cherry Blossom Festival

Alishan Cherry Blossom Festival



Kenting Music Festival

Taiwan International Balloon Fiesta (Taitung)

The implementation of these measures contributed to an 80% advance sale of seats on day-trip shuttles, encouraged 61% of visitors to use interregional buses, and reduced the driving time between Taipei and Wuling Farm to four hours. The high improvement in travel quality made this proof of the benefits of promoting public transit use for tourist activities.

2. Alishan Cherry Blossom Festival (March 15-April 15)

Besides introduction by the Chiayi Forest District Office of a tour bus reservation system, on key holidays the DGH, Chiayi County Government, and other agencies coordinated restrictions on small vehicles between the hours of 6 am and 1 pm. By encouraging travelers to switch to public transit and shuttle buses while dispersing entry ticket sale points, traffic jams and parking shortages were significantly mitigated.

On key dispersal days, as expected there were between 8,100 and 16,000 visitors. Each day up to 140 buses served as many as 4,200 people, showing the effectiveness of public transit and dispersal planning.

3. Kenting Music Festival (April 3-April 7)）

The DGH worked with the Pingtung County Government and other agencies to introduce traffic management policies for the music festival, including planning and marking detours, and promotion of buy four, get one free offers on the high-speed rail and inter-regional buses.

Service increase of 31.6% accommodated a total of 52,010 trips on interregional buses, or an average of 10,402 daily trips. Overall trends showed an increase in use of public transit to disperse visitors to the Kenting Music Festival.

4. Taiwan International Balloon Fiesta (May 31-August 11)

Two months before the start of the fiesta, the DGH consulted the Taitung County Government and other agencies to formulate a dispersal plan. This included shuttle bus lines and establishment of Changeable Message Signs (CMS).

During the fiesta, the Third District Maintenance Construction Office and the Kaohsiung Motor Vehicle Office conducted weekly, rolling reviews that included on-site inspections. Transportation was not impeded by congestion.

Popularization of the Transportation Management Calendar

Valuable information related to major events is posted on the Transportation Management Calendar, available on the DGH website (at http://www.thb.gov.tw/buscms/ets). The general public can check times and places, access maps and external road information, and learn about transportation management measures and public transit routes and schedules. Links to official event websites provide access to additional information.

In order to facilitate public transit use and simplify online communication, in December 2013 the DGH created a fan page for the Transportation Management Calendar (https://www.facebook.com/thbcalendar). This serves as a platform for sharing information and is available via a link on the calendar site.

In the future, the DGH will continue to update and promote the calendar. Besides coordinating comprehensive transportation management plans with event organizers, it will evaluate effectiveness using the standard operating model "prior preparation, response throughout, and post evaluation." The expectation is to build a better tourism environment that benefits from convenient and comprehensive transportation.

"Transportation Management Calendar" Facebook Page

Implementing the Tamkang Bridge and Connecting Roads Construction Project

Tamkang Bridge is set to become a new northern Taiwan landmark. Planning of the bridge and connecting roads was first completed in July 1998 and passed environmental impact assessment in November 2009. The Environmental Protection Administration, however, did not approve the first phase plan for the coastal expressway on the northern side of Tamsui River. In August 2001, the Ministry of Transportation and Communications (hereinafter referred to as "MOTC") issued a reply letter expressing its intent to formulate a new plan depending on future transportation needs.

External environmental changes followed, including: completion of Port of Taipei operational facilities and connecting roads (Expressway 61A, Expressway 64), Tamhai New Town, and Port of Taipei Special District.

Time Right for a New Construction Plan

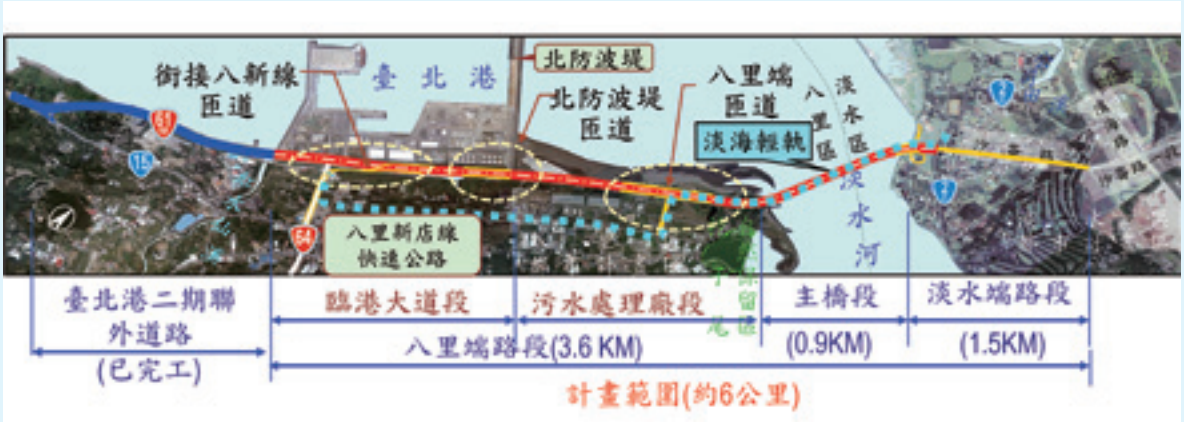
In 2007, the DGH began a comprehensive review of its original plan. Following approval from the Executive Yuan on April 8, 2010, it adjusted proposals for locations and types of interchanges linking to Expressway 64, in line with completion of the expressway. The interchange originally planned for Bali was changed to a simple diamond model and moved southward 500 meters to separate it from the Wazihwei Nature Reserve. In accordance with regulations, the DGH completed an analysis of differences between the original and subsequent environmental impact that was approved by the Environmental Protection Administration and filed for future reference on September 10, 2013.

The new project calls for a construction period from 2014 to 2020 with estimated expenditures of NT$15.43 billion (including NT$1.33 billion to expand the width of the main bridge). The Executive Yuan gave its approval on January 15, 2014.

Conscientious Attention to the Landscape and Transportation Needs

To preserve the beauty of the Tamkang sunset and satisfy residents, during follow-up design of the main bridge the DGH will gather government agencies, experts, scholars, and local cultural and artistic workers to form a bridge evaluation committee. It will assess proposed form and appearance to ensure the bridge blends into the local landscape.

Since planned roads are located near the nature reserve and an important wetland, before the start of work the DGH established an environmental protection monitoring task force that will seek



Schematic Vision of the Tamkang Bridge Project

Sunset at the Mouth of the Tamsui River (Conceptual Image of the Main Bridge; Evaluation Committee will Assess Proposed Design)

to reduce environmental impact. Also, mechanisms for suspension of work and restoration of wildlife were proposed to protect wetland creatures and plants: birds, crabs, mudskippers, and mangroves. Another planned mechanism would suspend work when protection of cultural resources is necessary.

Progress through Inter-agency Effort

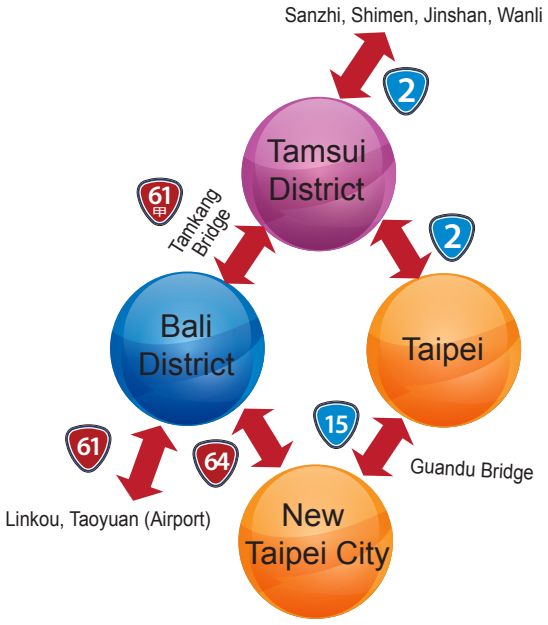
The DGH solicited views from the New Taipei City Government, the Construction and Planning Agency, and related agencies. Using the concepts of cross-field collaboration and added-value, determination of the scope of project impact and possible funding was made. Budgetary distribution was to remain based on principles proposed by the MOTC on February 5, 2010, calling for construction costs to be split equally three ways by the New Taipei City Government, the Construction and Planning Agency, and the MOTC (approximately NT$4.7 billion each). After considering transportation and mass transit needs, it was decided that the New Taipei City Government would contribute an additional NT$1.33 billion to expand the width of the main bridge.

For implementation to proceed, on August 6, 2013, the DGH sent written requests to the New Taipei City Government, the Construction and Planning Agency, and other agencies to recommend a convener and members of a task force responsible for gathering opinions and project coordination and implementation.

Vision for a New Northern Taiwan Landmark Takes Shape

The vision of this bridge located at the mouth of the Tamsui River is notable: to become a new northern Taiwan landmark that contributes to the landscape, tourism, and recreational activities.

Completion will improve connections between Tamsui and Bali while linking recreational activities found along northern coastal areas and Bali's Left Bank. Trips between Tamsui and Bali will no longer need to be made via Guandu Bridge, cutting approximately 15 kilometers and 25 minutes travel time off the journey. It is also expected to improve service quality on the Zhuwei section of Provincial Highway 2 and Guandu Bridge by reducing traffic volume by 30 percent.



Road Network at the Mouth of the Tamsui River

Establishing GIS for Inspection, Approval, and Cross-Checking of Highway Inventory Modifications and Drawing Images of Completed Construction

In January 2013, the DGH commissioned Tatung University to establish a geographic information system (GIS) for inspection, approval, and cross-checking of highway inventory modifications and drawing images of completed construction. The process included six working meetings to make adjustments and five training sessions involving more than 300 staff from the DGH and related agencies. Operational testing took place in June 2013, followed by official launch on July 3 of the same year. The GIS system employs online inspection, approval, and cross-checking while facilitating the upload of highway inventory modification reports and TIFF drawing images files of construction completion.

System Flow Chart

District Evaluations

A Milestone in E-Management

Source management methods turn passive management active. From the online construction tender management system of the Public Construction Commission, users can automatically access information on all construction tenders completed and received by the DGH. The GIS system determines whether cases are listed for monitoring or subject to compulsory exclusion then divides the former into three levels of review (branch, office and directorate) for follow-up management, verification, and tracking. This allows for real-time uploading of highway inventory changes and reporting of images upon project completion.

The GIS system does not require the tedious sending of official documents. System management digitalizes highway inventory and images of completed construction, so the data can be saved in DGH servers, where it is available for quick download by units carrying out disaster prevention and rescue tasks, inspections and patrols, maintenance and repairs. Besides raising administrative efficiency, in terms of practical application the GIS system represents a generational leap for its role in bringing highway inventory updates and completed construction images into the digital management age.

Building a Foundation for Added-Value to National Geographic Information Systems

In conjunction with GIS system planning and establishment in 2013, the DGH requested that subsidiary units add submission of completed construction photos to all construction contracts and assist with building verification mechanisms. Following formal system launch in July 2013, the MOTC could

provide access to real-time information on completed construction work in conjunction with digital images of the transportation network and plans for administrative processes, renewal, and maintenance. Overall, this represented significant progress in the reporting of road modifications.

MOTC assessment of the GIS system is as follows:

(1) Comprehensive information gathering mechanism.

(2) Comprehensive processes for checking and expediting highway modifications; methods for determining awards and penalties associated with inspection results.

(3) Improved review accuracy by combining GIS capabilities.

The GIS system plays a major role in facilitating MOTC provision of digital images of the transportation network in conjunction with administrative processes, renewal, and maintenance. It not only speeds up image renewal but also lowers maintenance costs while adding value to the National Geographic Information System.

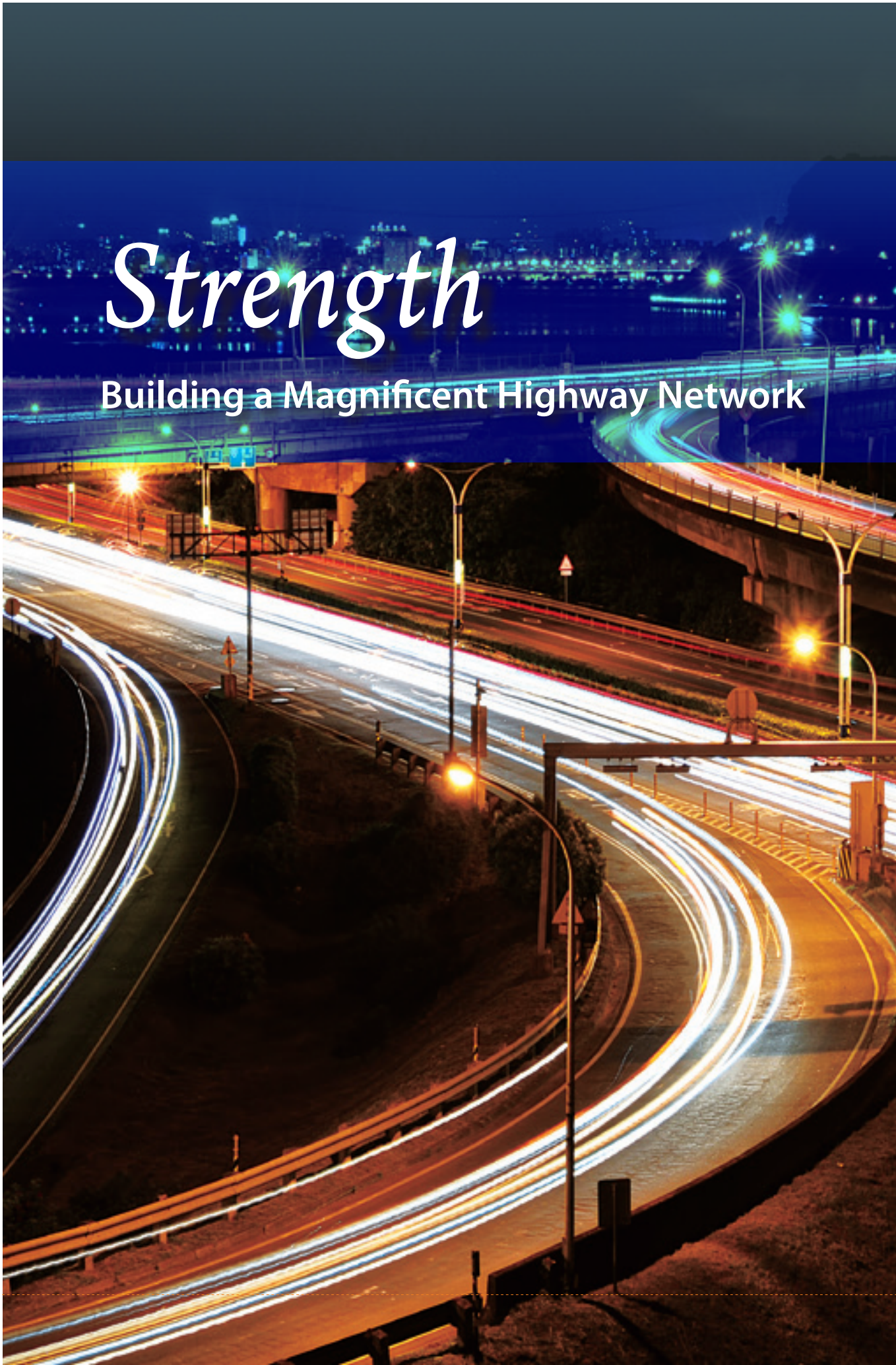
Real-Time, Comprehensive Highway Information Possible in the Future

A regular part of DGH's work involves the registration of highway inventory and modifications. For years, a lack of effective management at the source prevented competent authorities from fully grasping changes following the completion of construction. This meant significant gaps between inventory and on-site conditions.

Development of the GIS system allows for real-time information on completed construction while providing an internal mechanism for verifying highway inventory registration and management. Inventory changes can be made as facilities change, making information not only more comprehensive but also more accurate.

When the GIS system is completed, it will be integrated with the 2014-2015 comprehensive survey of provincial highways and a new digital highway platform. Then, drivers will have complete and accurate information related to everything they see when driving on the nation's highways.

Vision of the Future Digital Highway



Strength

Building a Magnificent Highway Network

Implementing the Suhua Highway of Provincial Highway No.9 Mountainous Section Improvement Project

The Suhua Highway of Provincial Highway No.9 Mountainous Section Improvement Project is divided into three sections – Suao-Dongao, Nanao-Heping, and Hezhong-Daqingshui – spread over 38.8 km. Comprehensive construction efforts are underway.

Construction Underway on Eight Tunnels

The Suhua project features eight tunnels a total of 24.5 km long, comprising 62% of the total project length, including Guanyin and Gufeng tunnels, which measure a total of 12.6 km and are linked by a 55-meter bridge. The idle old Taiwan Railways' North Link Tunnel was used to build four adits leading to the main tunnel. Breakthrough of the 653-meter section of Guanyin Tunnel heading north from 7K + 572 ~ 8K + 225 was overseen by Transportation Minister Yeh Kuang-Shih on June 24, 2013. Through the end of 2013, excavation of the two tunnels had already reached 8,264.3 m.

In accordance with an environmental assessment pledge, rock and other debris excavated from the 3.4-kilometer-long Dongao Tunnel, located along the Suao-Dongao section, was removed by rail. Approximately 1.055 million square meters of material removed from the north and south tunnel entrances was loaded onto Taiwan Railways' trains at Yongle and Dongao stations before being transported to Sinma Station then given to the Yilan County Government for processing.

Exhibition Hall for the Suhua Highway Improvement Project

In August 2012, Typhoon Saola disrupted progress on Zhongren Tunnel. Work stopped at the north entrance as design changes were completed and an analysis made of the difference in environmental impact. After the new environmental impact passed review on December 20, 2013, work resumed on December 29, 2013, with construction of an additional adit at the north tunnel entrance. Work is still underway.

Environmental Protection Monitoring in Accordance with Impact Assessment Pledges

During the environmental impact assessment a pledge was made to establish an environmental protection monitoring committee to oversee the Suhua improvements. The committee monitors construction safety, water surges, air and water pollution, and ecological and cultural resources.

The first 17-member committee, in session from May 1, 2011, to April 30, 2013, comprised Director General Wu Men-Feng, MOTC and county government representatives, experts and scholars. They conducted two on-site inspections, eight monitoring meetings, one ad hoc meeting, and one working meeting. When the second committee commenced, environmental groups managed to get an additional four representatives from civic organizations added, to bring the total number of committee members to 21.

Development agencies must complete the declaration of environmental impact assessment review conclusions and pledges along with forms describing the rock and debris processing results and procedures for development projects that have passed environmental impact assessment. Before the 10th of January, April, July, and October, the previous quarter's reports must be uploaded for inspection by the Environmental Protection Administration.

Progressive Achievements in Carbon Footprint Management

The Suhua project is the first major road construction in Taiwan or abroad to set a goal of obtaining third-party recognition of carbon footprint inventory. By the end of 2013, more than one year had passed in this cooperative effort since Director General Wu Men-Feng first announced it on July 24, 2012.

With no precedent to base planning on, the Suhua Improvement Engineering Office introduced reliable methods to enterprises and units directly responsible for construction, coordination, supply, design, supervision, inventory, and inspections. Achievements included: finalizing the carbon footprint inventory plan and holding an international forum, regular training sessions related to carbon footprint inventories and two seminars with local experts from industry, government, and academia.

In July 2013, the DGH took additional steps toward full integration of carbon management on the Suhua project. Using Environmental Protection Administration standards, it proposed product category rules (PCRs) governing carbon footprints associated with road, bridge, and tunnel construction.

Breakthrough Ceremony at Guanyin Tunnel

Rock and Debris Loaded Onto Trains at Yongle Station

On-site Inspection by the Environmental Protection Monitoring Task Force

Meeting of the Environmental Protection Monitoring Task Force

These were reviewed at the sixth technical task force meeting of the EPA in June 2013 and are expected to become the first set of construction carbon footprint PCRs to undergo application and review, and then receive approval.

Using RFID to Strengthen Construction Safety

The Suhua Improvement Engineering Office effectively monitors workers, vehicles, and machinery in tunnels using radio frequency identification (RFID). The system, which is installed in the old North Link Tunnel in the Guanyin and Gufeng tunnels, uses e-tags fastened to people, vehicles, and machinery. These emit electromagnetic waves picked up by readers that send a signal to nearby RFID data transmitters or repeaters, which then send data to primary receivers at tunnel entrances.

Through monitoring screens, workers stationed at tunnel entrances can see the location of people and vehicles inside. Using this information in combination with passing bays and traffic light systems, they control entry and exit of workers and transit vehicles. Such insight not only supports response and rescue in case of emergency but also ensures work progress.

Establishment of an Exhibition Hall for the Suhua Project

Near Baimi Community, Suao Township an exhibition hall and multimedia room displays the commitment of the people who have turned the Suhua project into a model construction effort. Displays detailed biotic indicator research, cultural artifact rescue, carbon management, hydrologic and geological investigations, environmental monitoring, and transplantation of large trees. The facility officially opened on November 5, 2013.

Exhibits describe the history and culture of the Suhua Highway and expectations associated with this important road. Pioneering 3D mapping depicts the planning and design of the improved road corridor as well as hydrologic and geologic information, while the other displays describe bridge, tunnel, machinery, traffic control, and fire prevention construction techniques. There are also fun interactive games to explain carbon management, environmental monitoring, and research into biotic indicators.

Breaking New Ground in the Follow Up to the South Link Highway of Provincial Highway No.9 Widening Project

The South Link Highway of Provincial Highway No.9 is not only a major thoroughfare between Taitung and Pingtung but also the only transportation link. It is a winding road with large undulations that make passage difficult, and sometimes extremely heavy rain causes landslides that make passage impossible.

Work Begins on Key Tunnel Construction

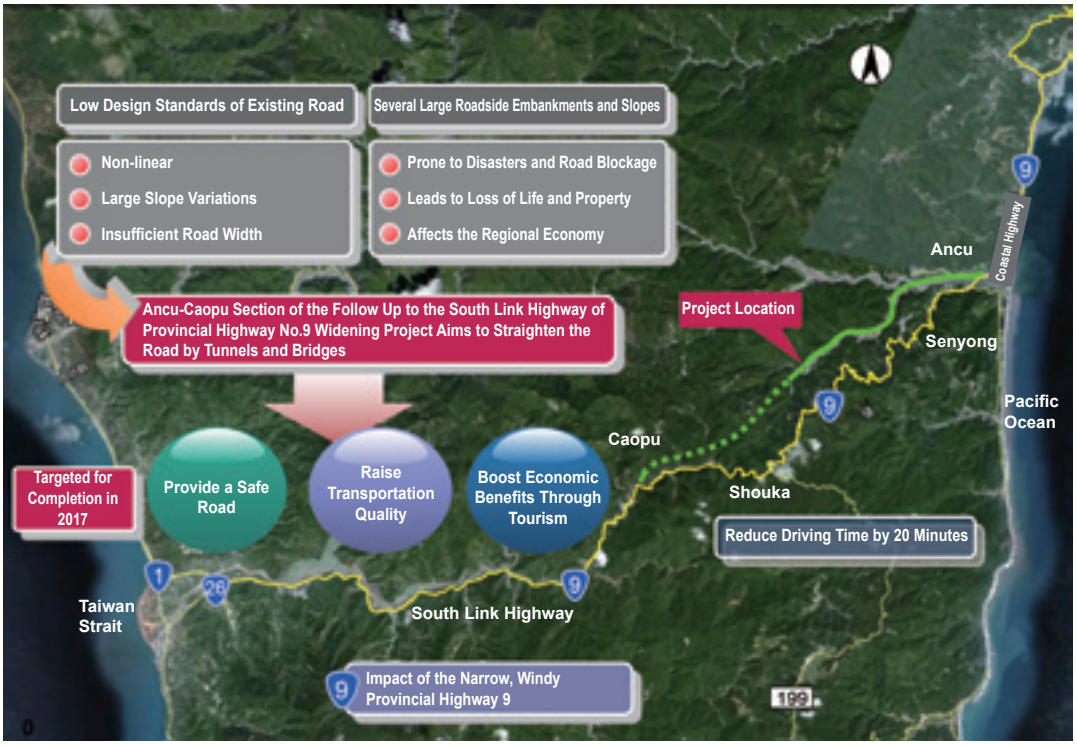
Tender C2 tunnel construction of the Follow Up to the South Link Highway of Provincial Highway No.9 Widening Project is taking place between Daren Township, Taitung County and Shizi Township, Pingtung County (6K + 300 ~ 11 K + 006). The 4.7-kilometer-long tunnel is both a key part of the project and its most representative construction. Work began on July 10, 2013, and is scheduled to finish on October 16, 2017, for a construction period of 1,560 days. The budget is NT$5.43 billion.

A Low Carbon Tunnel That Blends into the Environment

The DGH plans to straighten a section of road prone to disasters (Ancu-Caopu, 15.7 km long) through a combination of tunnels (4.6 km) and bridges (4.9 km). The new section, which will pass through the Central Mountain Range, will be built using low carbon principles from cradle to grave and will feature a low maintenance, low management design.

During the tunnel design process a heavy focus was placed on low carbon principles, such as reduction of tunnel length and shaft depth. The longitudinal gradient was reduced from 3% to 2%, the tunnel lining used high-strength concrete to lower material volume, and beach nourishment included reuse of existing tetrapods. Overall, these measures cut carbon dioxide emissions by 37,000 tons, equivalent to the amount of carbon that would be absorbed over one year by a forest big enough to fill 79 Daan Parks.

Another benefit of straightening the road is significant reductions in distance (4.7 km) and driving time (20 minutes). This will save 3.4 million liters of petrol annually, cutting carbon dioxide emissions by 15,000 tons, equivalent to the amount of carbon that would be absorbed over one year by a forest big enough to fill 27 Daan Parks. Based on a usage period of 50 years, this will lower carbon emissions by a minimum of 520,000 tons.



Formal Launch of Carbon Footprint Inventory

On August 9, 2013, the DGH held a meeting for the start of tunnel carbon management. With Director General Wu Men-Feng acting as a witness, the carbon inventory guidance authority, the building company, and the competent authority – CECI Engineering Consultants, Fu Tsu Construction, and the West Coast Expressway Southern Region Engineering Office – jointly signed a carbon footprint inventory cooperation pledge. They vowed to work toward obtaining construction carbon footprint verification, implementing construction carbon emissions control, and raising carbon reduction effectiveness. In the process, they would establish a benchmark for construction carbon management.

A meeting for the start of carbon management on the Jinlun-Daniao section took place on September 14, 2013. DGH Deputy Director General Hsia Ming-sheng, Legislator Liu Chao-hao, and Taitung County Council Speaker Rao Ching-ling acted as witnesses for the joint signing of a carbon footprint inventory cooperation pledge by the carbon inventory guidance authority, the building company, and the competent authority: CECI Engineering Consultants, Jinn Shin Construction Co., and the Third Maintenance Office. Together, they vowed to work toward obtaining construction carbon footprint inventories.

Work Nearly Underway on Each Tender

Currently, planning and design are finished on the four tenders that comprise improvements to the Sianglan-Jinlun section, including: A1 road embankment soil work, a prioritized tender that was completed in September 2013; A2-2 high slope section pier widening, which started in August 2013; and A3 work to the Jinlun outer ring road and the Duoliang elevated bridge. The primary task, straightening of roads in the Jinlun community, began in April 2013.

The Jinlun-Daoniao section is further divided into five subsections – Duoliang, Daxi, Dazhu, Jiajinlin, and Daniao – which are separated into B1 and B2 tenders. Planning and

design for each are complete. In August 2013 work began on the B1 tender, which consists of three low-elevation sections that meander with the coast, making them susceptible to marine- and climate-related factors. Work on the B2 tender, which includes high slope pier work and Jiajinlin Bridge construction, it expected to begin in 2014.

As work began on other tenders in 2013, it was clear that new challenges and difficulties would emerge. To show respect and empathy toward local residents, construction crews should minimize the effects of construction on the neighboring environment. They also must take measures to ensure that traffic remains unimpeded in order to guarantee the safety of road users.

Prioritizing Protection of Aboriginal Ancestors

At the south entrance of a tunnel on the Anshuo-Caopu section of the South Link Highway there was a burial ground for ancestors of an aboriginal community in Shizi Township, Pingtung County. During land expropriation, these aboriginals refused to relocate the tombs and asked that the DGH modify the highway route.

In order to find an agreeable solution, the DGH held several explanatory meetings to communicate with the aboriginals. The aboriginals sought a new route that would not impact construction while protecting the rights of local residents. They passionately insisted that the ancestral tombs not be moved. Finally, out of respect for ethnic beliefs, the DGH designed a new route. By reaching a consensus with local residents, it produced a win-win situation that allowed construction to proceed.

Striking a Balance between Development and Environmental Protection

While undertaking the project the DGH was conscientious of all pledges it made in environmental impact reports. It carefully monitored impact on the natural environment before, during, and after work, the latter including the usage stage. Monitoring revealed several reptiles that are Level 2 or 3 protected species along with rare plants. A detailed survey conducted in 2013 showed that there were no abnormal changes to the condition of these protected species.

In the future, the DGH will continue monitoring to ensure that while construction is underway, disturbance to the environment is minimized.

A Blessing Ceremony at the Start of Construction

A Meeting at the Start of Carbon Management

Examining the Benefits of the Follow Up to the West Coast Expressway Continuous Construction Project

The Follow Up to the West Coast Expressway Continuous Construction Project, which began in 2009, includes a total of eight sub-projects and 26 construction tenders.

By the end of 2013, three of the sub-projects and 11 construction tenders were completed. On the southward lying route an interchange located in Guanyin Industrial Park, Taoyuan was added; in Changhua Coastal Industrial Park grade separation at three intersections improved traffic flow; on the West Coast Expressway (Expressway 61) another 25.84 km of road opened (Fuxing-Wanggong Road, Changhua; and Dacheng, Changhua-Taisi, Yunlin – Huzinei Interchange section).

Accelerating Work on Unopened Sections of Road

Sections of Unopened Road Include:

(1) Guanyin, Taoyuan County – Fenggang: Divided into four tenders, two of which are in the construction stage and two of which are in the design and planning stage. Estimated year of completion is 2019.

(2) Baishatun – Nantongwan, Miaoli County: Tender was awarded and pre-construction preparations are underway. Estimated year of completion is 2017.

(3) Daan – Dajia, Taichung: Divided into two tenders both of which are underway. Estimated year of completion is 2017.

(4) Wanggong – Dacheng Interchange, Changhua County: Divided into five tenders that are in the planning and design stage. Estimated year of completion is 2019.

(5) Badongliao – Jiukuaicuo Road Section, Tainan: Divided into three tenders that are in the construction stage. Estimated year of completion is 2018.

Work has intensified on each of these road sections so they can open as soon as possible. Expected benefits include: linking characteristic destinations on the west coast, reducing the distance between regional destinations, boosting local economic development and tourism promotion, mitigating traffic jams on freeways, and providing a more comfortable and safer driving experience for road users.

Expected Benefits Apparent on Opened Sections of Road

Benefits from the partial opening of the West Coast Expressway (Expressway 61) prior to the end of 2013 include:

(1) The addition of an interchange to Guanyin Industrial Park, Taoyuan mitigated traffic congestion and improved road safety.

(2) Grade separation at three intersections at the Changhua Coastal Industrial Park reduced incidence of accidents and congestion to provide safer, more comfortable roads.

(3) The Fuxing – Wanggong Road (Changhua) and Dacheng (Changhua) – Taisi (Yunlin – Huzinei Interchange) sections of the West Coast Expressway (Expressway 61) join with Provincial Highways 17 and 19, National Freeways 1 and 3, and east-west expressways to compose a freeway/expressway network. This links the Changhua Coastal Industrial Park, an ecological preservation zone, the Wanggong fishing harbor and recreation area, and the Dacheng reclaimed land-planning zone. The network not only boosts the prosperity of coastal townships in southwest Changhua but also serves as an important transport corridor between Mailiao Industrial Park to the south, Changhua Coastal Park, and the Taichung port zone.

Current State of the Fuxing – Wanggong Road Section of the West Coast Expressway, Changhua County

Grade Separation at Intersections at the Changhua Coastal Industrial Park

Honoring the Hanbao – Xinsheng Section, West Coast Expressway at the 13th Public Construction Commission Golden Quality Awards

New construction took place on the Hanbao – Xinsheng section (190K + 028 ～ 193K + 270, Tender WH50) of the West Coast Expressway (Expressway 61). The entire 3.242-kilometer route, located in Fangyuan Township, Changhua was designed as a prestressed box girder type overpass to prevent a land embankment from disrupting the landscape. The bridge's graceful, aesthetic appearance lets it blend in with the local environment.

Innovative Responses to a Challenging, Comprehensive Construction Project

1. Innovative

(1) Conducted load capacity tests of the cantilever forming traveller to ensure work safety.
(2) Conducted bridge scupper repairs, switched to a dual-pipe design, and abstained from adding pre-formed holes to wing panels. Benefits included avoiding follow-up repairs and the smooth laying of concrete, producing a beautiful surface not prone to leaks.
(3) Crushed rock gradation added to the work zone for span-by-span full support increased the bearing capacity of the earth. Precast, reinforced concrete slabs provided even weight distribution to ensure support safety.
(4) Steel level supports used during span-by-span full support resisted lateral force. Also three levels of safety railing were used during assembly of the systematic support frame.
(5) Hoisting equipment was used to shift movable molds. Slow pulling of wing panels across the bridge span prevented impact from wind hazards and raised efficiency.
(6) Withdrawal tooling holes were not left in the top panel of box girders, a disc-system support framework was employed to ensure work safety and efficiency, bolt holes were removed from webs to produce a cleaner appearance, and the use of galvanized steel prevented rust and corrosion.

2. Challenging

(1) The project site was a high-wind coastal area. Work had to be suspended during strong winds, but progress was maintained through the addition of equipment and manpower.
(2) Simultaneous launch of project tasks led to significant manpower, machinery, and equipment investments.
(3) When obstacles arose, various units sought solutions in order to reduce the work period.

3. Comprehensive

(1) During the start of the project, renters of public land entered the worksite in an attempt to stall progress. The responsible authority advanced relief funds so work could proceed.
(2) The Central Weather Bureau's system of quantitative precipitation estimation and segregation using multiple sensors was used to provide information to onsite supervisors, who could then better plan the laying of asphalt concrete and decide whether rain warnings were necessary.
(3) Conscientious check of the bridge surface and modifications to protective rails improved bridge aesthetics.
(4) A temporary steel bridge was added to assist with the steel frame platform work. The bridge linked to temporary roads to prevent work from impacting local industrial roads.
(5) Use of cantilever and full support method SOP ensured safety.
(6) Comprehensive attention to construction design reduced the need for adjustments. Besides typhoons, there were no delays that affected the work period.

Recipient of the Highest Honor in the Area of Public Construction

The commitment of front-line staff to project execution and supervision, and their high expectations toward contractors, allowed Tender WH50 of the West Coast Expressway to proceed smoothly; during construction there were neither workplace disasters, reports of workplace disasters or work stoppages, nor fines or penalties. Progress was ahead of schedule, which meant the road could open early. These accomplishments led the project to receive the nation's highest honor in the area of construction at the 13th Public Construction Golden Quality Awards.

Commending East-West Expressway Construction Projects and Network Improvement Projects Achievements

Following more than a decade of work, the East-West Expressway Construction Project ended in 2005. It has already helped balance regional development while reducing the gap between urban and rural areas. Improvements were needed, however, due to delays on some sections of the expressway.

In consideration of future local development needs and to strengthen the transport function of existing east-west expressways, research continued on construction of delayed sections and improvements to high-accident areas. This contributed to formation of the East-West Expressway Construction Projects and Network Improvement Projects.

Four Tenders on Four Routes Completed in 2013

In 2013, seven construction work tenders and one construction design tender took place on four routes: Beimen – Yujing, Tainan – Guanmiao, Taisi – Gukeng, and Guanyin – Daxi. Four of these tenders were completed in 2013.

1. Beimen – Yujing Route (Expressway 84)

Tender E707 is for the Beimen – Yujing planned route beginning in the west at Expressway 61, then heading southeast through Xuejia and Madou before connecting to National Freeway 1. The 12.85-kilometer-long route is divided into three tenders: Tender E707-1, a 4.86-kilometer section located in Beimen and Xuejia districts that is being constructed; Tender E707-2, a 3.94-kilometer section located in Xuejia District that was completed in December 2013; and Tender E707-3, a 4.05-kilometer section located in Xuejia and Madou districts that was opened to traffic in October 2013. In 2012, the latter tender was honored with an award for excellence in the Good Quality Award category at the 12th Public Construction Golden Quality Awards.

When the project is completed, the new route will service Beimen, Xuejia, Madou, and Siaying districts. The improved transportation will accelerate development of neighboring areas

Construction Tender E707-3, Beimen – Yujing Route

Construction Tender C821, Tainan – Guanmiao Route

and provide convenient highway transport, not only bringing the city more comprehensive development but also making local living zones more accessible. As local industrial and technological development advances, tourists will benefit from new links to the Southwest Coast National Scenic Area, sparking greater development in coastal areas.

2. Tainan – Guanmiao Route (Expressway 86)

Tender C821 is for the Tainan – Guanmiao route in Tainan's Rende section. The 2.223-kilometer route extends from Provincial Highway 17 to Road No. 2-11 and includes a 408-meter-long embankment and a 1,815-meter elevated bridge. By linking National Freeways 1 and 3 with Provincial Highway 17, the new route provides a more comprehensive highway network that will advance development in the Tainan region.

This route opened to traffic on December 15, 2013. Its convenience will lower transport costs, thereby raising the competitiveness of ship and freight cargo. After Expressway 86 is fully opened, it will link to the Gold Coast, boosting tourism and economic development in Greater Tainan while providing drivers with fast and convenient transportation.

3. Taisi – Gukeng Route (Expressway 78)

(1) Improvements to the Dounan and Taisi Interchanges

An eastward freeway ramp, located at the intersection of Expressway 78 and Provincial Highway 1, was added to the Dounan Interchange on Expressway 78 (known as the "Dounan Interchange Construction Project"). Previously, vehicles entering Provincial Highway 1 from the east or leaving from the west were forced to make a complicated U-turn that disrupted interchange traffic. After the ramp opened in November 2013, these problems were significantly reduced. Simpler access lowered accident risk, meaning better safety guarantees for life and property.

Another public work (known as the "Taisi Interchange Construction Project") involved making a level intersection graded and addition of a new interchange. The intersection, located in a coastal area of Yunlin County between Taisi and Kouhu townships, connects Expressway 78 to Provincial Highway 17 and Expressway 61. Drivers on the expressways are severely inconvenienced by traffic signals, a problem that will be eliminated when the roads are separated by grading.

(2) Expressway Improvement at 22K + 700

Where the high-speed rail meets Expressway 78 in Yunlin County two piers were abnormally sinking due to regional overpumping of groundwater and the weight of road embankments and the piers themselves. Despite the strengthening of links to beams and adjusting of support pads by the Taiwan High Speed Rail Corporation, the sinking continued.

The DGH therefore replaced the road embankment of Expressway 78 with an elevated design to reduce load on the piers. During construction of the 240-meter elevated section, which consists of three consecutive steel box columns, the DGH worked with the Taiwan High Speed Rail Corporation to monitor safety of the rail system and ensure that operations could continue safely.

4. Guanyin – Daxi Route (Expressway 66)

After opening of the Guanyin – Daxi route of the east-west expressway network, accidents were frequent at level intersections to the west of National Freeway 1, including intersections with Township Roads Tao 81, Tao 79, and Tao 102. This problem was most serious at Township Road Tao 102, where traffic accidents led to the loss of life and property. The DGH therefore launched the East-West Expressway Guanyin – Daxi Route (Expressway 66) and Township Road Tao 102 Intersection Improvement Project. This elevated the main section of Expressway 66 in order to create a graded separation at its intersection with Township Road Tao 102. Besides lowering the risk of accidents, this improvement has enhanced the existing transport system, guaranteed the safety of road users, and improved expressway service quality and operational efficiency.

Opening of the Port of Keelung East Coast Access Roads to Traffic

Port of Keelung East Coast Access Roads – Bridge No. 8

Natural geographic limitations faced by the city of Keelung prevent wide roads, a problem that begins downtown and extends outward to roads accessing external areas.

New East Coast Access Roads Improve Traffic

The main external access roads to the east and west of the Port of Keelung – Zhongzheng and Zhongshan roads – not only provide local road service but also shoulder the burden of transporting container goods passing through the port.

Growing national income in recent years has led to significant rises in tourist and commuter traffic volume. This has contributed to increased traffic on Zhongzheng and Zhongshan roads, which often leads to congestion in and out of the city. To ease this problem, and traffic in general in Keelung, the DGH decided to construct new east coast access roads.

Expressway 62A Becomes Primary External Access Road

The primary external access road for the Port of Keelung is the 5.4-kilometer Expressway 62A. After beginning in the north beside the Port of Keelung east coast No. 9 Wharf, near the intersection of Donghai Street and Zhongzheng Road, it passes through the Xiaodong Interchange (located near Xiaodong Road) then ends at Sijiaoting Interchange, where it connects to Expressway 62 at the 13K marker.

A 1.5-kilometer section of Township Road Bei 37 (Sijiaotingkeng Road) was also included under new external access road construction. It was expanded to four lanes, to connect to Provincial Highway 2D, and involved the construction of a new steel arch bridge across the Keelung River. Also, to accommodate local tourism needs, bicycle paths were added to each bank of the river. Total construction was 6.9 km.

Two-Stage Opening in 2013

About half of the full route consists of 11 bridges, three tunnels, and three culverts for use by vehicles. Heavy rain common to the Keelung area posed a challenge, but hard work allowed the construction team to overcome technical and climatic difficulties. Opening first, on February 5, 2013, (before the Lunar New Year holiday), was 3.8 km of road that composed Tender CI02, covering the south section of Expressway 62A. This included a 2.3-kilometer section of Expressway 62A, from Xiaodong Interchange to Sijiaoting Interchange, along with another 1.5-kilometer-long access road.

Tender CI01, covering north section work from Zhongzheng to Xiaodong roads, fully opened on December 19, 2013, following the hard work of the construction teams.

Transportation Benefits from Primary and Secondary Access Roads

Following the full opening of Expressway 62A, drivers can use the 1.2-kilometer-long No. 3 tunnel on the primary access route to reach the east coast port area and Xinyi District of Keelung as well as Ruifang District of New Taipei City. To reach the Shenaokeng area of Keelung, drivers can pass through the Xiaodong Interchange to Sijiaoting Interchange before switching onto Expressway 62, then connecting to National Freeways 1, 3, or 5. These options significantly improved convenience and reduced driving time.

An added benefit is separating regular traffic in the city from trucks transporting container goods into and out of the port area. Besides mitigating urban congestion, this will improve external access to the port.

Port of Keelung East Coast Access Roads – Xiaodong Interchange

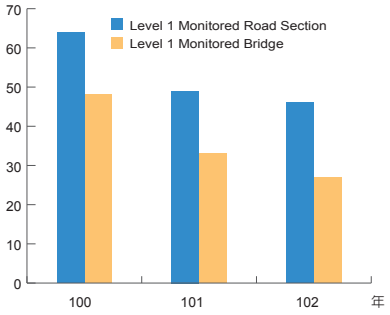
Insistence

Ensuring Safe Roads

Continuing to Build Better Highway Disaster Prevention Warning Mechanisms

2013 Drill to Practice Disaster Prevention and Rescue

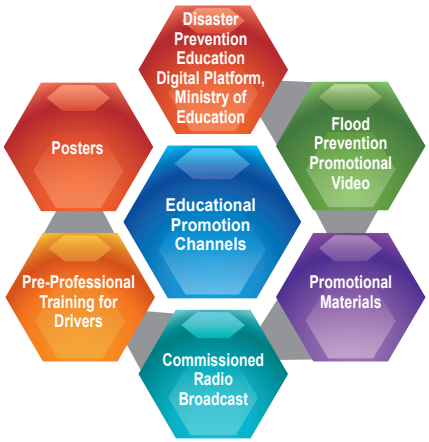
In 2013, the DGH reviewed highway disaster risks with renewed dedication. Road sections prone to flooding or waterfall-like formations were included under the advance warning system while sections of road and bridges subject to strict Level 1 or 2 monitoring were reduced to 85 and 26, respectively. The DGH also continued to review various precipitation indexes to lower the rate of disaster for road users.



Publicity and Education to Strengthen Disaster Prevention Concepts among the General Public

The DGH raises disaster prevention knowledge and capabilities so drivers can safely use the nation's highways, thereby achieving the goal of everyone working together to prevent disasters. It has produced several highway disaster prevention promotional materials, including the publication "Road Disaster: Where? When? Why? How?"

In cooperation with the Ministry of Education, the DGH integrated highway disaster prevention warning mechanisms into Grade 1-9 curriculum guidelines. Motor vehicle units also teach these mechanisms via the written driving exam.



Strengthening Large-Scale, Multi-Faceted Disaster Response Drills at the Regional Level

The increasing frequency of climate anomalies has ushered in unusual, extreme weather events. In 2013, the DGH increased drills related to large-scale, comprehensive disasters that could be faced by each of the nation's maintenance offices: earthquakes, tsunamis, typhoons, nuclear disasters, etc. These raise the advance forecast, deployment, warning, and response capabilities

that compose the four-stage warning mechanism followed by highway disaster prevention and rescue workers, while also teaching the three-level response system. Workers become proficient at disaster prevention and rescue information trends, and they learn how to achieve seamless reporting and communication with other joint disaster prevention units.

In 2013, the DGH conducted 12 general disaster prevention and rescue training sessions and one disaster prevention training session for all Level 1 supervisors in the DGH and subsidiary agencies. Total attendance was 600. Another 48 disaster prevention and rescue drills were held, including seven comprehensive disaster tabletop exercises and 41 live drills (19 of which involved tunnel training). Total attendance was 1,300.

Improving Dispersal Procedures during Traffic Interruptions on Suhua Highway

In order to respond to potential interruption of passage on the Suhua Highway, in 2013 the DGH gathered members of the Taiwan Railways Administration, the Tourism Bureau, the National Freeway Bureau, the Maritime and Port Bureau, local governments, the Agriculture and Food Agency, and the Fisheries Agency to formulate SOP to respond to the interruption of road transportation on the eastern Taiwan Suhua Highway. Depending on the length of interruption, competent authorities respond with dispersal mechanisms to mitigate impact.

Gathering Expert Opinions and Conducting Flood Prevention Preparations

In April 2013, before the start of the flood season, Director General Wu Men-Feng led disaster prevention supervisors of all levels in flood prevention preparation meetings. They examined the current status of highway disaster prevention preparations, exchanged views on flood season tasks, and vowed to strive for zero disaster-related casualties in 2013.

In May 2013, experts and scholars gathered for a seminar on flood prevention. Besides discussing DGH mechanisms for flood control, professional research teams examined results of a plan for commissioning risk management research related to precipitation-induced disasters on mountainous roads, and a report was made on experimental verification research related to river basin management methods in bridge areas.

At a Meeting to Review Flood Prevention Preparations, the DGH Vowed to Strive for Zero Disaster Casualties

Highway Flood Prevention Experts' Seminar

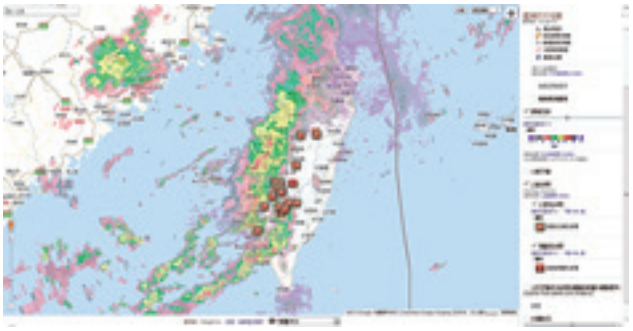
Participants praised flood prevention work conducted by the DGH over the past two years while sharing flood prevention experiences and recommendations for improving highway disaster prevention warning mechanisms.

Transmitting Highway Closure Information to Keep Drivers Away from Harm

The DGH uses various channels to announce highway-related warning information. Whether through warning broadcasts, location-based services, content management systems, news tickers, or smartphones, drivers are able to obtain firsthand information. Also, based on road characteristics, the DGH added disaster prevention facilities, including: 48 emergency parking areas, 46 emergency telephones, 154 CCTV systems, and 43 variable-message signs.

In 2013, the DGH used location-based text message services to send close to 450,000 texts to people located on high-risk roads. This active method of reaching drivers strengthened dissemination of disaster prevention information to get drivers off hazardous sections of road. The latest information on highway closures is also spread through the President Chain Store Corporation in order to benefit from the reach of its nearly 5,000 outlets located across Taiwan.

Display at President Chain Store Corporation Chain


Google Webpage

Also, starting from July 2013, the DGH began to cooperate with Google to provide the Taiwan Google Crisis Map. Local government agencies at all levels were encouraged to furnish disaster prevention information in the spirit of greater transparency.

A New Record of 1,000 Days of Natural Disaster Risk Management with Zero Casualties

Taiwan faced six extreme weather events in 2013: extremely heavy rain on 05/19 and Typhoons Soulik, Trami, Kong-Rey, Usagi, and Fitow. The DGH closed highways as a precautionary measure 240 times, and on 84 occasions highway landslides or other disasters followed the closures. Fortunately, the early action prevented human casualties.

Starting with the passing of Typhoon Megi on October 23, 2010, until December 31, 2013, Taiwan has gone 1,164 days without any casualties due to extreme weather events. This shows the effectiveness of disaster prevention mechanisms.

Executing the Second Phase of the Highway Improvement Project

Provincial highways, the backbone of the island’s road network, face environmental threats brought by climate change and additional burdens brought by growing economic activity. In response, from January 2009 to the end of 2012 the DGH conducted the Provincial Highway Dangerous and Bottleneck Section Urgent Improvement Project. This led to improvements on 66 dangerous sections of road and 19 bottleneck sections of road, the DGH followed with the Highway Improvement Project.

Three Sub-Projects to Raise Provincial Highway Safety

The project, scheduled to take place from 2013 – 2018, focuses on three major areas: improving disaster prevention on mountainous highways, strengthening earthquake resistance of bridges, and other highway improvements. It called for disaster prevention improvements on 244 mountainous sections of highway and resistance strengthening on 105 highway bridges at a total budget of NT$24.16 billion.

1. Highway Disaster Prevention in Mountainous Areas

In 2013 and 2014, plans called for improving disaster prevention capabilities in 244 locations on 34 highways, including Provincial Highway 9. Sub-projects included addition of CCTV to nine areas, addition of content managements systems to seven areas, addition of refuge platforms to one area, road anchor sensing in 93 areas, commissioning of professional services, slope repair in 34 areas, and the building of 1,845 m of open tunnels.

Disaster at 79.9 K, Provincial Highway 18

Completion of an Open Tunnel at 79.9 K, Provincial Highway 18

Work was finished in 209 locations by the end of December 2013 while the remaining 24 locations were scheduled for completion by the end of 2014.

2. Strengthening Earthquake Resistance of Bridges

From 2013 – 2015, plans called for strengthening earthquake resistance of 105 highway bridges.

Work was finished on 33 bridges by the end of December 2013 while another 30 bridges were scheduled for completion in 2014 and the remaining bridges were scheduled for completion in 2015.

3. Other Highway Improvements

From 2013 to 2018, new highway development projects will eliminate bottleneck sections of road and lead to a comprehensive highway network.

By the end of December 2013, preliminary tasks, such as environmental impact assessments, planning, design, and land acquisition, were completed on all but three sub-projects: new construction on the Yangmei – Hukou section (5K + 100 ~ 12K + 127) of Provincial Highway 31, improvements to the 20K + 200 ~ 21K + 330 section of Provincial Highway 27 (including Liujin Bridge), and improvements to the 0K + 000 ~ 2K + 680 and 3K + 420 ~ 6K + 800 sections of Provincial Highway 20B.

Achieving Year-end Goals for the Highway Maintenance Project

Upon completion of highway construction, provision of a high-quality transportation environment depends on comprehensive maintenance. Therefore, in accordance with the Highway Act, the DGH uses automobile fuel charges to finance the highway maintenance work necessary for upholding road service quality.

Conducting Annual Maintenance on Provincial Highways

Taiwan has 94 provincial highways that total 4,957 km in length. Annual maintenance undertaken by the DGH includes: major maintenance, general maintenance, highway disaster urgent repairs and restoration, road transportation safety construction maintenance and improvements, highway greenification, disaster prevention and preparations, and highway planning.

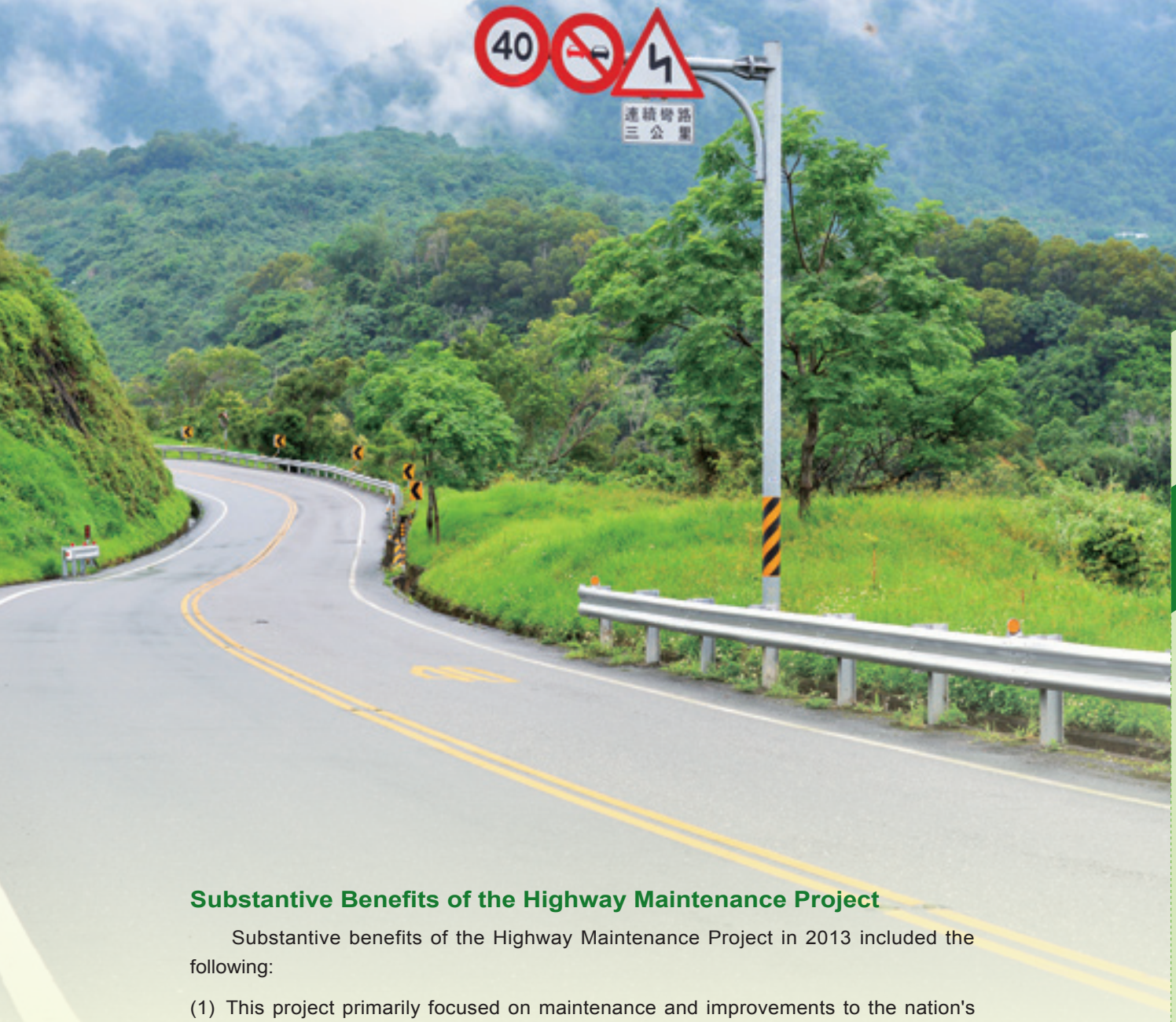
Highway Maintenance Project Implementation in 2013:

(1) Completed maintenance on the nation's 94 provincial highways, allowing the DGH to maintain transportation flow and satisfy drivers.

(2) Completed provincial highway transportation and greenification while investing in clearer road markings, thereby improving recreational quality for tourists and other road users in a cost-effective manner.

(3) Completed provincial highway disaster urgent repairs and restoration, so that roads could return to their original state within a short period of time. Innovations, improvements, and streamlining continued to raise the capability of urgent repairs following disasters, which thereby raised the general public's satisfaction toward government administration.

(4) Completed provincial highway repairs and improvements that not only promoted intercity and intercounty transport but also boosted economic activity. Benefits toward long-term national development were apparent.



Substantive Benefits of the Highway Maintenance Project

Substantive benefits of the Highway Maintenance Project in 2013 included the following:

(1) This project primarily focused on maintenance and improvements to the nation's 94 provincial highways. Completion of all objectives for 2013 kept traffic flowing smoothly, thereby satisfying drivers.

(2) Highway disasters frequently cause road obstructions or bottlenecks that affect driver safety. Eliminating such problems is the most difficult part of the project. To quickly restore traffic flow, urgent repairs and rebuilding following disasters are pressing concerns. Construction techniques must suit local characteristics while taking into account safety and natural ecology.

(3) Suitable placement of traffic signs provides clear guidance for road users and helps them reach their destination in the shortest time possible. Greenification adds to the recreational nature of highways while reducing travel fatigue.

(4) Provincial highways are key roads that connect at least two cities or counties and provide a transportation channel between major political or economic centers. Comprehensive repairs and maintenance promote inter-regional transportation and transport, thereby boosting domestic economic development.

Conducting Bridge Inspection, Classification, and Management

Besides managing and maintaining the 2,626 bridges on provincial highways, the DGH assists local government in maintaining another 342 bridges on stewarded county highways. Challenges range from traditional external factors – typhoons, extremely heavy rain, earthquakes, corrosion, and overloading – to recent increases in abnormal weather events such as extremely torrential rain. The DGH therefore must ensure its regular bridge maintenance and inspections are rigorous enough to detect problems early, so bridges can be strengthened and made resistant to disaster. Only then can the safety of road users and property be guaranteed.

Bridge Inspections Rely on a Classification System and Rigorous Checks

A key objective of the DGH is to conduct regular inspections that uncover problems, so they can be fixed at the earliest time possible. According to the DGH's internal highway maintenance handbooks and regulations, regular bridge inspections shall take place twice annually. These are based on bridge importance together with inspection, classification, and management standards included in the most recent highway maintenance handbook, which became effective from November 1, 2013. Highlights are as follows:

(1) Inspections of important bridges are to be increased and enlarged following typhoons, flooding, or earthquakes. General bridges that do not cross rivers and therefore are not subject to scouring shall have regular inspections once every two years (the same frequency as required by other public agencies), which reduces total inspections by more than 1,000 annually. The six types of bridges are classified as follows:

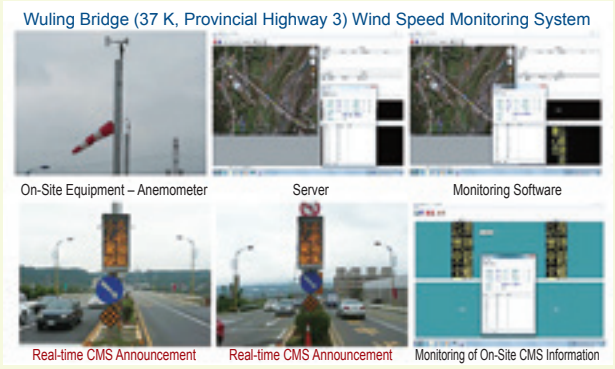
Type A: Subject to regular maintenance and monitoring
Type B: Slightly exposed foundation
Type C: Prone to slight damage in the event of a magnitude 5 or greater earthquake (list of bridges made by a competent authority via administrative order)
Type D: Highway disaster prevention Level 1 monitoring
Type E: Yet to be completed earthquake resistance analysis and strengthening
Type F: Finished in the bottom three of the new condition index or new priority index standards during regular inspections conducted before the previous flood season

(2) Following natural disasters or manmade accidents, construction branches should dispatch personnel within five hours to conduct an initial analysis of bridge damage or obstruction. This can be used to determine whether traffic restrictions are needed. Within 14 days, a follow-up special inspection report must be submitted to the DGH.

(3) To raise the accuracy of pre- and post-flood season bridge inspections, the following three quality control checks were added:

a. The deputy director of each construction branch should conduct random inspections of basic

Using a Bridge Inspection Vehicle to Examine the Penghu Cross-Sea Bridge



Wind Speed Monitoring on Wuling Bridge, Provincial Highway 3

bridge data (geometry, structure, special structural features, design, records) as well as DER inspection accuracy. These inspections shall be conducted on 10% of bridges in each branch's jurisdiction.

b. Maintenance offices shall conduct random inspections on 4% of bridges in the jurisdiction of each branch they oversee.
c. The DGH shall conduct random inspections on 2% of bridges in the jurisdiction of each maintenance office it oversees.
d. Construction branches with low accuracy in the aforementioned random inspections shall be docked points in road maintenance evaluations.

Three-Signal Warning System for Important Roads and Bridges

To understand bridge safety and road conditions, the DGH carefully monitors important road sections and bridges. This includes use of a three-signal warning system for Level 1 roads.

1. Early Warning Signal (Yellow Caution)

(1) Definition: This signal is flashed when the Central Weather Bureau issues an extreme weather warning and either precipitation forecasts reach standards for action or actual accumulated precipitation has reached early warning signal standards.
(2) Traffic Restriction Methods: Roads remain open and local governments, police precincts, and control point staff are notified to be on alert.
(3) Road User Information: Since increased rain could raise response levels, road users are encouraged to listen to warning broadcasts and closely heed control and response information for affected road sections.

2. Warning Signal (Orange Restricted)

(1) Definition: This signal is flashed when inspection of road sections shows that actual accumulated precipitation reaches warning signal standards.
(2) Traffic Restriction Methods: Roads remain open. Workers clear scattered rockfall or small landslides, and control point staff urge tourists to avoid entering affected areas.
(3) Road User Information: Road users near affected sections are urged to leave the area and others are urged to stay away.

3. Action Signal (Red Closed)

(1) Definition: This signal is flashed when inspection of road sections shows that actual accumulated precipitation has reached the standard for action to be taken.
(2) Traffic Restriction Methods: When evaluation shows that precipitation will continue, affected roads are closed.
(3) Road User Information: Road closure announcements are made. Road users are urged to head to the nearest safe parking area or temporary emergency parking area, or take a safe detour.

Conducting the Post-Morakot Highway System Urgent Repairs and Rebuilding Project

Originally, the DGH was to conduct the Post-Morakot Highway System Urgent Repairs and Rebuilding Project over a period of three years between August 2009 and August 2012. The total cost was NT$26.629 billion (with NT$3.744 billion shifted from less urgent projects, NT$12.241 billion shifted from provincial highway projects [including reserves], and NT$10.644 billion shifted from county highway and township road projects).

The project consisted of 943 tenders, including 93 tenders for provincial highway urgent repairs (100% of which are completed), 203 tenders for provincial highway rebuilding (of which 190, or 93.6%, were completed by the end of 2013), and 647 tenders on county highways and township roads (of which 644, or 99.53%, were completed by the end of 2013).

Extreme Weather Events Pose a Challenge during Rebuilding

Since the devastation of Typhoon Morakot in 2009, Taiwan has faced other typhoons and extreme weather events. Morakot rebuilding zones were directly hit by several storms: Typhoon Fanapi in 2010; extremely heavy rain on July 18 and November 15 as well as Typhoon Nanmadol in 2011; extremely heavy rain on May 12 and June 10 as well as Typhoon Talim in 2012; and Typhoons Soulik, Trami, Kong-Rey, and Usagi in 2013. These events made rebuilding even more difficult.

Post-Disaster Sequence: Restoring Access, Improving Reliability, Rebuilding

The power of nature is impressive. At any time a natural disaster can inflict significant damage. Only after years of hard work do conditions gradually return to their former state.

In the time that has passed since Typhoon Morakot, the DGH has based highway emergency repairs, rebuilding, and driving safety on transportation needs and overall land planning. The rebuilding process requires prudent planning and evaluation, especially when it comes to managing temporary roads and bridges that have to be used during flood season, despite their poor disaster resistance capability. Based on past experiences the DGH formulated a three-stage recovery sequence: 1. Restoring access for emergency transportation and supplies, 2. Improving the reliability and safety of routes for emergency transportation and supplies, and 3. Restoring highway function.

Learning to Coexist with Disasters — Humbly Facing Nature

When Typhoon Morakot struck in 2009, a riverbed along the Qinhe section of Provincial Highway 20, between Taoyuan and Fuxing (95K~103K), rose by about 30 meters. An open tunnel and the road foundation were destroyed.

To quickly restore traffic on the Southern Cross-Island Highway, the DGH decided to excavate land alongside the original Provincial Highway 20 to build a temporary road. Designers planned for this to serve as a mid-term solution, and it withstood several typhoons and bouts of extremely heavy rain in 2011. During the June 10 flooding incident of 2012, however, 1,500 mm of precipitation fell in

59 K, Provincial Highway 18, Post-Disaster

59 K, Provincial Highway 18, Post-Rebuilding

some mountainous areas. Across from the temporary road, the Butangbunasi River had not yet been fully repaired. A large landslide fell into the Laonong River, blocking floodwater and washing away Laonong's left bank. Damage to the slope destroyed the road foundation then the road itself.

Post-Morakot Lessons in Disaster Survival

Typhoon Morakot has passed, but the challenges Taiwan faces due to extreme weather events caused by global warming are only beginning. In the post-Morakot world, disaster and survival are important issues. Mankind has developed the theories of natural selection and survival of the fittest, but true risk management also requires minimizing overall damage. In an age where extreme weather events can cause significant destruction, there must be a way to avoid an endless cycle of disaster, survival, disaster, survival.

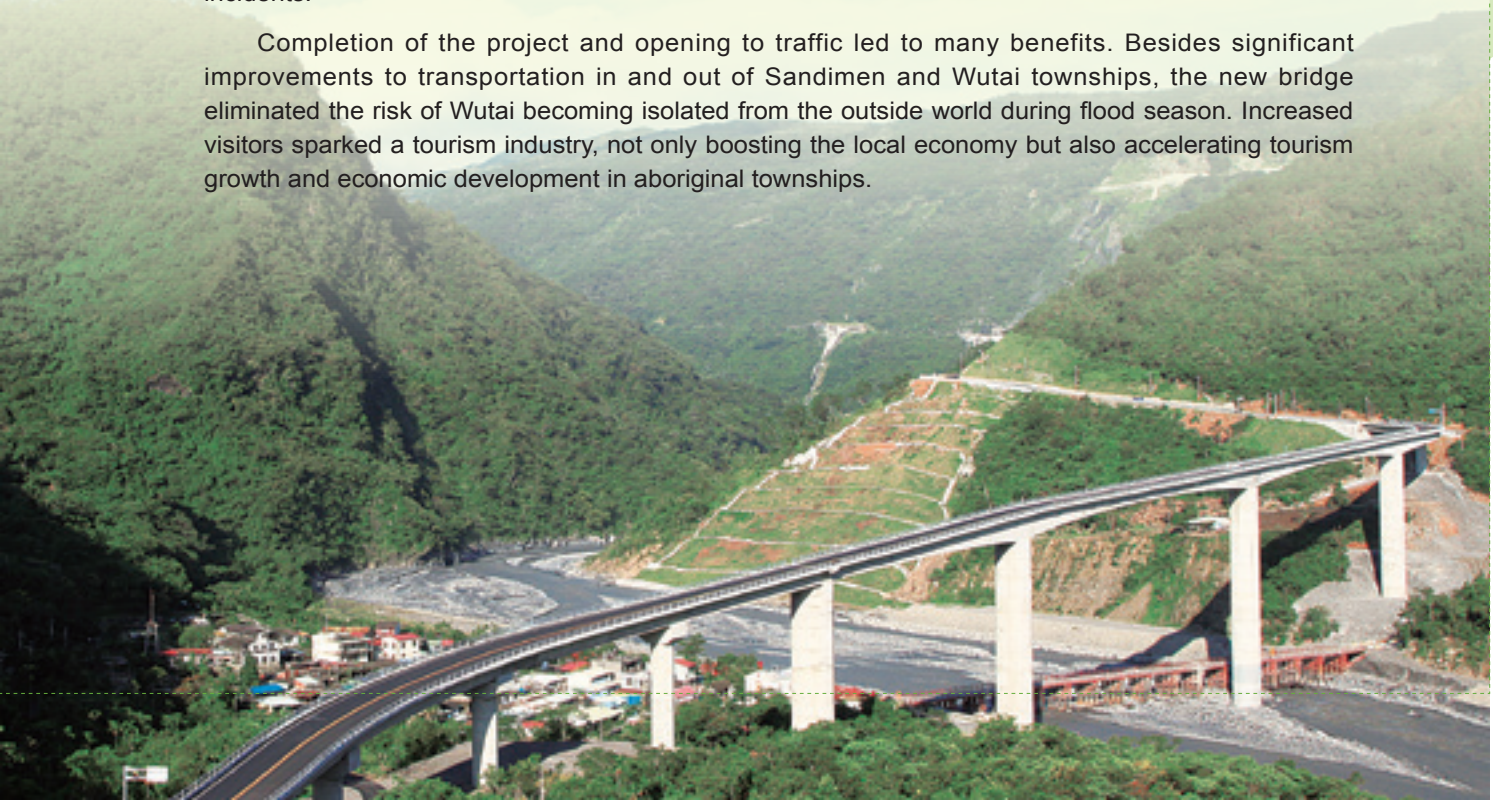
Humans cannot fight nature. Instead, they must learn to live in harmony with it and pay close attention to variations in extreme weather events. When an unusual weather event occurs, government agencies must cooperate with preparations and disaster prevention. The DGH, meanwhile, will continue to improve roads that were damaged by Typhoon Morakot, so it can ensure a complete highway system and safe flow of traffic.

Challenges Rebuilding the Wutai Guchuan Bridge

Precipitation totaling more than 2,500 mm brought by Typhoon Morakot caused the Ailiaobei River to surge, washing away the Wutai Guchuan Bridge (formerly Provincial Highway 24 No. 1 Bridge) and severing the only transportation link to Wutai Township. Rebuilding the bridge, at a cost of NT$730 million, became a major post-Morakot rebuilding project. Adhering to the principle of "joint management of mountain and river to prevent disaster and avoid risks," the DGH planned a prestressed box girder bridge that would cross the Ailiaobei River Valley. The scale of the construction – a 654-meter-long, 10-meter wide bridge with a 99-meter tall pier (including the bridge surface and foundation) that is the tallest in Taiwan – gave this project symbolic meaning.

Several times during reconstruction the Ailiaobei River surged. Challenges that included flooding of foundation excavation and difficult aerial tasks were overcome due to the hard work of the DGH and construction units. Their conscientious approach ensured successful safety management, despite the significant risks, and allowed for the 1,023-day project to be completed with zero work-safety incidents.

Completion of the project and opening to traffic led to many benefits. Besides significant improvements to transportation in and out of Sandimen and Wutai townships, the new bridge eliminated the risk of Wutai becoming isolated from the outside world during flood season. Increased visitors sparked a tourism industry, not only boosting the local economy but also accelerating tourism growth and economic development in aboriginal townships.



Spirit

Providing Innovative Motor Vehicle Services

Examining Achievements of the Highway Public Transport Enhancement Project

Luodong Transfer Stop

Following implementation of the Highway Public Transportation Development Project from 2010 – 2012, the DGH sought further improvement through the Highway Public Transport Enhancement Project, to be conducted from 2013 – 2016.


New Cishan Transfer Stop

Growth in Public Transit Ridership

Through the end of 2013, the DGH subsidized the following public transit improvements: replacement of 2,808 buses (including the addition of 1,310 low-floor buses), addition of 476 buses on new routes (including 279 low-floor buses), replacement of 5,000 old taxis, purchase of 345 handicap-friendly taxis, and installation of 9,764 multi-card readers on buses (covering 1,637 lines). Also, no rural bus route was eliminated. The achievements contributed to a nearly 90 percent approval rating among the general public and not only abated the decline in bus ridership but also reversed it.

Transport Habits Begin to Change

In 2012, ridership on highway public transit reached 1,189,010,000, an increase of 14.5% compared to ridership of 1,038,780,000 in 2009. In 2013, between the months of January and November, ridership on highway public transit increased by 2.2% compared to the same period a year earlier.

The share of trips made by private-use vehicles fell from 73.5% in 2009 to 72.6% in 2012 while the share of trips made using public transit vehicles increased from 13.4% in 2009 to 15.0%. These data suggest that the Highway Public Transportation Development Project has gradually begun to change choice of transportation mode.

Year	Private-Use Vehicles (%)	Public-Transit Vehicles (%)	Non-Power Driven Transportation Modes (%)
2009	73.5	13.4	13.1
2010	73.3	13.9	12.9
2011	74.1	14.3	11.6
2012	72.6	15.0	12.4

An Excellent Start to the Highway Public Transport Enhancement Project

Highlights of the Highway Public Transport Enhancement Project (2013 – 2017) in 2013 were as follows:

1. Shuttle Buses to Complement the Taiwan Railways Rapid Transit Program

Through a combination of subsidies for buses to open new routes and replace old buses, the DGH continues to assist local governments in adding shuttle buses to complement Taiwan Railways. Besides strengthening seamless transit, the program assists with reorganization of bus routes. Formulation of additional related measures expands the service range of public transit in Taiwan.

2. Building a Mainline Bus Network

As population distribution changes and transportation becomes more concentrated, new adjustments are needed to existing routes. The result is higher operational efficiency of buses while encouraging local governments to better organize bus routes within their jurisdictions.

2013 marked a milestone in the modernization of Taiwan's public transit network when Tainan and Kaohsiung became the first cities to propose mainline bus routes.

(1) Six Mainline Buses in Tainan

Since the upgrade of Tainan to a metropolis in 2011, the city's original inter-regional bus system was gradually integrated into a six-line mainline bus network servicing Greater Tainan. The DGH contributed by subsidizing the replacement of old buses and assisting with the provision of the top quality service needed to build people's trust.

(2) Kaohsiung's Pioneering "Chessboard" Mainline Bus Plan

Since July 2013, Kaohsiung has been implementing a pioneering "chessboard" mainline bus plan. It began operations on a dozen new mainline routes and added transfer stops. Incentives for transfer passengers encouraged people to develop the habit of transferring to the bus.

The DGH assisted by subsidizing installation of transfer facilities along with 50 bus shelters and 100 consolidated bus schedule signboards. The more convenient, safer bus stop environment created a new perception for bus transfers.

3. Building a Handicap-Friendly Transit Environment

(1) Handicap-Friendly Taxis

In order to provide seniors and people with mobility problems with more diverse, seamless transit, and to supplement inadequate rehabilitation bus services, the MOTC amended transportation industry management regulations to require that taxis providing specialized wheelchair services be either vans or station wagons. In 2013, the DGH contributed by subsidizing 345 taxis to join a new handicap-friendly taxi team. This provided people with mobility problems with a new option for autonomous travel that was not subjected to restrictions generated by the rehabilitation bus system's welfare model. The program not only gave new life to handicap-friendly transportation but also represented a transportation policy that benefited all parties involved.

(2) Handicap-Friendly Buses

In 2013, the DGH launched a joint program with the Taichung City Government and inter-regional bus operators to introduce three buses with power lifts. These handicap-friendly vehicles fulfilled many objectives: besides encouraging and assisting the disabled and people with mobility problems to leave the home, they helped Taichung cope with its status as an aging city. By using the buses on model routes that include stops at cultural and tourist attractions, the city showed its care for people with mobility problems.

4. Marketing and Educational Promotion of Highway Transit

In conjunction with the aforementioned public transit projects, the DGH held a series of activities encouraging people to "discover" Taiwan roads. By seeking out unknown stories about public transit experiences, it awakened recognition of the importance of public transit while creating a favorable impression.

In another activity the DGH held a poll to select 10 outstanding long-distance bus routes. This sparked recognition of the beautiful relationship between mankind and the land. People who were encouraged to explore the landscape along these routes discovered the impressive, touching sights that awaited them.

Ending Regular Vehicular Registration and License Renewals

Starting from January 2013, registration renewals for regular, personal-use automobiles and scooters ended. The new policy is expected to save time and money for 6 million automobile drivers and 15 million scooter drivers, benefitting virtually every household in Taiwan.

Over Time, Benefits of Registration Vanished

A vehicular registration certificate is proof of ownership to the vehicle in question. When the ROC government came to Taiwan in the 1940s, the registration and renewal system was a valuable part of vehicular management. It offered a way to change, approve, and correct ownership and vehicular information while serving as a mechanism to ensure that inspections and insurance were in order.

The registration listed the owner of the vehicle and the vehicle's specifications, both valuable pieces of information to assist authorities (police, motor vehicles agents, environmental agents, and tax collectors) carrying out inspections. The registration certificate was also an important document to check when people were buying or selling a vehicle. But information technology and social advances gradually reduced the importance of this document, leading the MOTC to eliminate regular vehicular registration renewals for personal-use automobiles and scooters.

Ending Vehicular Registration Renewals Saves Time and Money

Originally, vehicular registration for personal-use automobiles and scooters had to be renewed every three years and two years, respectively, at a cost of NT$200 and NT$150. There were typically 1.8 million applications annually among automobile users and 4 million among scooter users.

Vehicular Registration Services at a Motor Vehicle Office

As motor vehicle agencies sought to provide more convenient services, they begin to let vehicle owners change their registration at convenience stores, post offices and contracted inspection agents. But this still required petrol, time, and paperwork, imposing a burden on vehicle owners and society. The launch of the new policy at the start of the new year, saves vehicular owners about NT$1.1 billion and more than 6 million hours annually.

The Old System Continues for Business and Special-Class Vehicles

Motor vehicle agencies continue to issue paper vehicular registration certificates when drivers apply for new license plates, vehicular ownership changes, or modifications take place. This gives drivers the vehicular registration documents they need. Also, in the past scooter drivers paid a fuel tax when renewing their vehicular registration. To accommodate the new renewal regulations, like automobile owners they now receive payment notification by mail.

License Renewal Services at a Motor Vehicle Station

The old system of regular renewals for vehicular registration remains in place for commercial and special classes of vehicles, such as tour buses, ambulances, school buses, and kindergarten vans. This assists vehicular management, motor vehicle supervision, and police inspections.

Regular Renewals Also End for Scooter and Automobile Driver's Licenses

Starting from July 1, 2013, regular renewals were no longer needed for general automobile and scooter driver's licenses. For the sake of license holders, motor vehicle agencies will only issue a new license for first-time license recipients, lost or damaged licenses, or information changes. This change was expected to benefit about 15 million automobile and scooter drivers and save NT$700 million annually in renewal fees.

Ending Regular Renewals of Driver's Licenses Will Save Money for Drivers

A driver's license grants the holder permission to operate a motor vehicle. In the past, supervision of drivers required regular renewal of licenses to update and verify information. Over time, however, advances in IT and the social environment eliminated this need, leading the MOTC to propose a plan to end regular renewals for drivers of personal-use automobiles and scooters.

Before this plan took effect, general automobile and scooter drivers had to renew their licenses every six years at a cost of NT$200 each time. About 3 million applications were completed annually. Launch of the new policy ending regular renewals will save drivers about NT$700 million annually.

Regular Renewals Still Needed for Professional Drivers and Special Cases

Besides the continuation of professional driver's license renewals, renewal requirements for regular driver's licenses remain in place for: foreigners who are not permanent residents, Mainland China citizens, Hong Kong or Macau residents, Taiwanese citizens without household registration who test for or acquire a Taiwanese license, and drivers who lose their license privileges for life, then later have them reinstated and obtain a license with one year validity.

Modifying the Scooter and Automobile Fuel Tax Levy System

In the past, fuel taxes levied on scooters were collected in two-year increments when drivers renewed their vehicular registration. Since January 1, 2013, however, cancellation of regular registration renewals led to collection every July, consistent with the system used for personal-use automobiles.

Scooter Fuel Tax Levies Every July, Consistent with Automobile Levies

The change in how scooter fuel tax levies are collected led to levies on an additional 6 million vehicles in 2013, complicating procedures for DGH staff. Levies for personal-use automobiles and scooters were jointly collected between July 21 and August 20, 2013.

Automobile and Scooter Payment Notices Jointly Sent to Each Household

In order to handle the significant workload needed to levy scooter fuel taxes and to reduce postage and printing fees, first time payment notices for automobiles and scooters were compiled under one serial number for each household and delivered in one notice.

Announcement Related to 2013 Fuel Tax Levy for Automobiles and Scooters

Promotion Related to the 2013 Fuel Tax Levy for Automobiles and Scooters

Two-Stage Collection Process to Make Payments Easy

Since this was the first time that the levy system for scooters has been changed, payment of scooter fuel taxes in 2013 was conducted using a two-stage process that facilitated expanded collection.

(1) Stage 1, with collection beginning in July, covered scooters from even-numbered years that were manufactured within the past decade, were more than a decade old, and had normal registration renewal records, or had a violation record from the past five years.

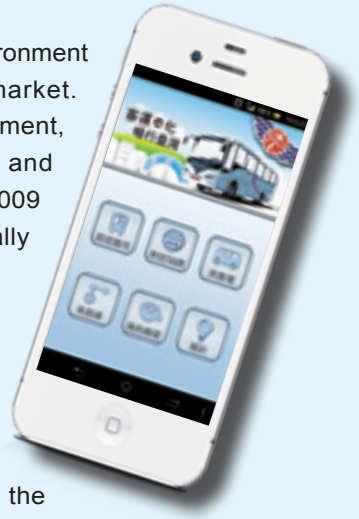
(2) Stage 2, with collection between December 1 and 31, covered scooters that were manufactured more than a decade ago that had not been declared as scrapped and that did not fulfill requirements for being declared as scrapped.

Changes to the Levying System Will Raise Collection Rates

Despite early discussion and changes to the levying system and an incomplete program design, the modified system for levying of the fuel tax on scooters was finally completed and launched on schedule in 2013.

In 2013, collection applied to 5.96 million scooters from even-numbered years. Of NT$1.218 billion due in tax, NT$987 million, or 81%, was collected. This represented 21-percentage point growth compared to the 60% collection rate when fuel tax was collected in conjunction with vehicular registration renewals.

Launching of the Intercity E-Bus System



Major changes in recent years to the domestic transportation environment led the DGH to seek ways to create a robust inter-regional bus market. Advantages are manifold: improving vehicular transportation management, assisting long-distance bus operators with management of fleets, and providing users with the driving information they need. Therefore, in 2009 the DGH began to create the Intercity E-Bus System, which it formally launched following years of hard work on January 1, 2014.

Satisfaction Rate during Trials Achieved Original Targets

The Intercity E-Bus System incorporates all the 51 long-distance bus operators in Taiwan, the 792 routes they operate, the 70,000 stops on these routes, and the 5,890 bus runs. The system provides the 510,000 people who use highway buses every day with more accurate, valuable information.

Beginning on September 27, 2013, a three-month trial of the system saw more than 1.45 million online inquiries and 35,000 downloads of the system app. Android and iOS users rated the system as four stars or greater, achieving the DGH's original target.

The Greatest System Building Challenge Was Ensuring Accuracy

The Intercity E-Bus System is Taiwan's largest, most complex system for managing information related to the movement of vehicles. When building the system, to ensure accuracy the DGH invited long-distance bus guilds and motor vehicle agencies to gather for inspection meetings. System builders were able to grasp the concerns and opinions of each long-distance bus company and use this information to make improvements to system hardware and software.

For system operation to better meet needs of a majority of users, during trials the DGH expanded feedback gathering. Adjustments to the system interface improved accuracy and practicality, leading to trust and recognition from inter-regional bus operators and passengers.

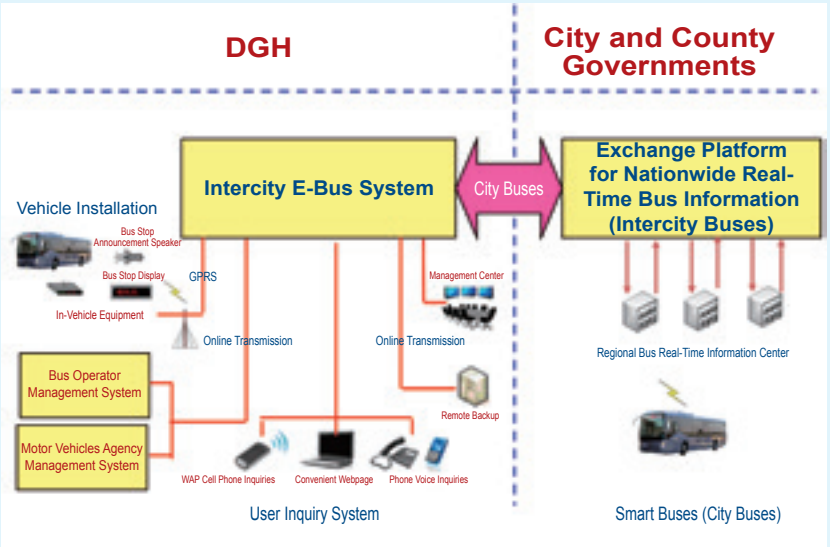
Expanding Service Effectiveness through Widespread Provision of Data

The database of the Intercity E-Bus System is available to 28 units (including city and county governments, agencies, schools, and long-distance bus companies) and in the future will be provided to private information enterprises. The objective is to expand the range and use of information in order to raise service effectiveness while boosting the information industry.

Also, to raise service quality and operational efficiency of long-distance bus operators, the DGH will assist operators with back-end management functions, including bus service adjustments, inspections, and vehicle settings.

An Important Tool for Future Travel and Tourism

The beginning of weekly two-day holidays and promotion of domestic tourism increased demand for real-time highway bus information, especially for intercity travel. In the future, the Intercity E-Bus System will be provided to the Tourism Bureau, for use with its Tour Taiwan App, as well as to local tourism departments. Its potential connection to tourism information databases and online platforms across Taiwan will provide domestic and foreign tourists with more comprehensive, real-time inter-regional bus information. As Taiwan strives to promote energy-saving, low carbon, seamless tourism and travel, the Intercity E-Bus System will provide related information services.



As people take inter-regional buses along routes rich in tourism resources, they will be able to explore villages and townships and experience local characteristics, conditions, and customs. The Intercity E-Bus System will become an indispensible tool for gaining a deeper understanding of Taiwan.

Improving Tour Bus Safety Management

Accompanying the rises in tourism and travel promotion in recent years have been increased tour bus demand and tour bus quality expectations. Agencies that oversee motor vehicles services, consumers, and tour bus operators have a joint interest in improving tour bus service quality and safety.

Formulating Improvement Plans for Better Tour Bus Management

In order to enhance operations and service quality of tour bus companies, the DGH formulated the following improvement plans:

1. Individual Driver Certification System

For better management of tour bus drivers, the DGH formulated a plan for changing from the current system of companies applying for a tour bus enterprise driver registration certificate to a new system requiring individual drivers to attend pre-professional lectures and obtain a qualification. Related regulations strengthen system management.

2. Better Training of Tour Bus Drivers

(1) In order to raise the emergency response capabilities of tour bus drivers and enhance training classes, response methods for stalling when traveling uphill or downhill were added to the curriculum.

(2) A DGH project commissioned production of practical training videos related to safe driving techniques for bus drivers on mountain roads. When shooting and production are completed, the plan is to send the video to operators for educational and training purposes.

(3) Formulation of special training for bus drivers. Plans call for progressive training that can increase driver experience and raise the professional quality of tour bus drivers.

3. Better Management of Tour Bus Drivers' Work Hours

Besides joint inspections of tour bus drivers' working hours by police and inspection units, unannounced checks are made of tour bus operator records. Since July 1, 2013, all tour buses that carry Mainland Chinese tour groups have been required to install GPS equipment that is used to strengthen management of drivers' working hours.

4. Public Release of Bus Safety Information

Many roads that tour buses travel in their journeys across Taiwan are mountainous thoroughfares that lead to popular scenic areas. The DGH is therefore in the process of formulating methods to announce safety information travelers need to make informed choices.

5. Announcement of Road Sections Prohibited for Buses or Requiring Extra Caution along with Disaster Prevention Alerts

For simple inquiries by the general public, information is provided on the DGH website under the "interregional bus/tour bus" link. Apps available for Android users – a DGH app offering provincial highway disaster and obstruction information as well as bobe 168 – provide valuable information on warnings, closed roads, etc., which travelers can use to plan itineraries.

6. Reforming Evaluation Mechanisms

In order to improve the management of tour bus operators, instead of conducting evaluations every two years as in the past, the DGH switched to annual evaluations. It also reviewed evaluation items and content to improve and strengthen the weighting of safety items.

7. Using Tachographs to Suppress Speeding

In order to suppress speeding by tour buses and resulting accidents on the Alishan Highway, since July 1, 2013, the DGH has used tachographs to catch speeders. Effectiveness led the DGH to expand the program to 18 road sections nationwide, such as the Dongao section of the Suhua Highway (on Provincial Highway 9) and the Changchun Shrine section of the Central Cross-Island Highway (on Provincial Highway 8).

8. Public Release of Bus Accident Information

On August 27, 2013, the DGH began releasing the accident information of bus operators every half year.

9. Expansion of Rule Violation Reporting Channels

On December 1, 2013, the DGH issued a press release encouraging the general public to report dangerous driving, excessive working hours, illegal driving on restricted roads, etc. Existing channels for reporting violations were consolidated to become part of a future third-generation supervision system.

10. Stiffer Penalties for Employing Unqualified Drivers

To impose stiffer penalties than those contained in the guidelines governing penalties for tour bus companies operating illegally or employing unqualified drivers, the DGH formulated an amendment that would switch legal basis to the new guidelines governing penalties for tour bus companies that violate regulations governing automobile and transport industry management. Specifically, it sought harsher penalties for companies that employ unqualified drivers.

The DGH constantly seeks to improve safety and management of tour buses. It will continue to formulate related management measures while enhancing oversight and inspection. The primary objective is to raise not only the ruality of tourism in Taiwan but also the nation's international image.

Holding a Pilot Program for Pre-Scooter License Safe Driving Instruction

Scooters that are 250cc or lower are among the most popular modes of transportation in Taiwan due to convenience and low operational costs. Economic development has turned the scooter into an indispensible part of many people's lives.

Importance of Lowering the Scooter Accident Rate

Widespread scooter use – there are currently more than 14.9 million scooters in Taiwan and more than 13.8 million people have a scooter license – contributes to scooter accidents being the leading cause of traffic deaths in Taiwan. According to Ministry of the Interior statistics, scooter riders accounted for 1,325, or 62%, of total traffic-related deaths in 2012, and 1,201, or 58.87%, of traffic-related deaths in 2013. Data such as these make reduction of scooter accident rates an important goal of authorities that oversee traffic safety.

Pre-Scooter License Safe Driving Instruction Pilot Program

In order to lower risky driving behaviors among new scooter drivers, on April 1, 2013, the DGH launched a pre-license safe driving instruction pilot program, in accordance with Article 8-1 of the road traffic safety instruction regulations. A total of 18 motor vehicles agencies participated.

Classwork consisted of a 40-minute safety video and a 50-minute safe driving class taught by road safety instructors certified at the Training Institute. Questionnaires handed out at the end of classes showed the following results:

(1) 82% of participants said the classes improved their knowledge of road safety

(2) 75% of participants said they were satisfied with the class arrangements

(3) 76% of participants said they were satisfied with the instructor's teaching style

(4) 78% of participants said they were satisfied with the license testing procedure

Public Hearing on Pre-Scooter License Safe Driving Instruction

Safe Driving Instruction at a Motor Vehicle Station

In another DGH commissioned questionnaire given to members of the general public, 75% of respondents said they supported pre-scooter license safe driving instruction.

Significant Drops in Accidents and Traffic Violations for Participants

In order to objectively examine safety instruction effectiveness, the DGH analyzed scooter accident rates and traffic violation rates among drivers who did and did not participate in the program.

According to data provided by the National Police Agency on 56,686 scooter-related deaths and injuries between April and September 2013, the accident rate among drivers who received safety instruction was 26.85% lower than among those who obtained their license at the same time but did not receive instruction. Among 21,974 traffic violations by new drivers, the rate of violations among drivers who received safety instruction was 31.67% lower than among those who obtained their license at the same time but did not receive instruction.

Public Hearing Ahead of Future Full-Scale Launch of Safety Instruction

In order to gather a wide range of opinions that can be used as reference for a future scooter testing system, on November 18, 2013, the DGH held a public hearing in the fourth floor auditorium of the NTU Alumni Association. Besides scholars and academics, public agencies and private organizations such as the ROC motorcycle party, the ROC motorcycle R&D safety association, and the Taipei Society for Traffic Safety were invited. Participants shared their opinions on the effectiveness of the safety instruction pilot program.

Those who took part in the hearing felt that safe driving instruction prior to awarding a scooter license was an effective means of ensuring safety. Besides offering praise and support, they suggested that the program be expanded. Such recognition encouraged the DGH to continue formulating plans for widespread implementation.

Conducting Traffic Accident Appraisal and Review

Article 59 of the first Highway Act, completed in 1959, provided the basis for establishment of traffic accident appraisal organizations. Thereafter, in 1964, local automobile accident appraisal committees were added to each city and county police department. Further amendments in 1971 and 1974 switched legal basis to Article 67 of the Highway Act and made the Taiwan Provincial Government the authority responsible for traffic accident appraisal in non-municipalities.

Establishment of the Reconsideration Committee for Traffic Accident Investigation by the DGH

Conducting Traffic Accident Appraisal Outside Municipalities

Government reorganization, agency restructuring, establishment of the five municipalities, and distribution of accident-related duties were cited as reasons for an amendment to Article 67 of the Highway Act, implemented on July 5, 2013. The DGH, as designated by the MOTC, was to take over traffic accident appraisal and review in administrative districts located outside of municipalities.

The failed passage of MOTC restructuring left the DGH without a mechanism for traffic accident appraisal and review. It therefore formed a task force to take over these responsibilities and completed the following duties within just two weeks: regulatory procedures, appointment of committee members, and coordination of document management and charges/fees remittance with the review committee and local appraisal committees. The DGH also arranged the temporary transfer of responsible Taiwan Provincial Government personnel and established an official document system. By July 18, 2013, it could fully handle traffic accident appraisal and review.

Review Committee Meeting

Appraisal Committee Meeting

Appraisal Meeting On-Site Inspection at an Accident Scene

Currently, appraisal committees in each of the 10 administrative districts are based in their original offices while the review committee moved to the central Taiwan branch of the Training Institute.

Improving Performance and Credibility of Traffic Accident Appraisals

Traffic accident appraisals must uphold social fairness and justice. Through a combination of traffic management regulations, the study of automobile kinetics, driving function, and kinematics, officers recreate accidents using evidence left behind at the scene. They determine the ratio of fault for each party and provide this information to judicial authorities and involved parties for adjudication, settlement, and compensation.

In order to improve the performance and credibility of appraisal committees, the DGH provided professional training and research opportunities for staff that conduct appraisals. Topics included: analysis of transportation image records, tyre track measurements and speed estimates, and evidence collection at accident scenes. Additional educational lectures covered application of traffic regulations, innovations in automobile structure and technology, etc. Domestic academic organizations were commissioned to research appraisal-related topics proposed by appraisal workers to ensure that findings would be applicable to everyday practical work.

A Better Feedback Mechanism for Appraisals

In the future, the DGH will rely on its appraisals to analyze the causes of traffic accidents. Findings will be passed on to road supervisory agencies as well as police and investigative units, who can prevent future accidents through a combination of improving road sections prone to accidents and enhancing enforcement of road regulations. The result will be greater safety assurance of life and property.

Scrapping of Scooters 10 or More Years Old

In order to update registration records for scooters 10 or more years old that had not been driven recently, since 2013 local motor vehicles offices have checked for vehicles that meet certain conditions. The offices then send explanation of scrapping procedures and related documents to remind drivers that they need to register unused vehicles as scrapped in order to reduce their fuel tax burden.

Fuel Tax Exemptions for Qualified Old Vehicles

In accordance with an MOTC amendment to Article 30-3 of the Traffic Regulation, local motor vehicles offices sent old vehicle scrapping notifications at the end of August 2013 to drivers who owned scooters that met the following conditions: manufactured at least 10 years earlier; no traffic violations, emissions tests, compulsory liability insurance, or registration information changes in the past five years. The notifications informed scooter owners that if their vehicles met certain conditions, they could be officially scrapped without the owner being liable for fuel tax payments.

Excellent Results of Scooter Scrapping Program

After receiving notification of scrapping procedures, vehicle owners simply had to fill out then submit scrapping documents in person or by fax, mail, or email.

By the end of December 31, 2013, motor vehicles offices estimated that official procedures for scrapping of vehicles had been concluded on more than 1.01 million disposed or unused scooters.

Use of a Recycling Truck for Publicity

Using Drunk Goggles for Anti-Drink Driving Demonstrations

The hard work of traffic safety authorities has led to significant progress in reducing the drink driving mortality rate. Over the past six years, deaths attributed to drink driving dropped from 576 in 2008 to 376 in 2012.

Sober-up Activities Using Drink Goggles

In order to demonstrate the seriousness of drink driving, motor vehicle offices under the DGH purchased high-tech drink goggles. These were incorporated into a series of anti-drink driving activities, from road safety lectures on the perils of drink driving to promotional events hosted by private organizations, that taught not only driving techniques but also correct driving principles. Participation by 22,400 people in 166 such activities turned drink driving into a topic of conversation among the general population. Through TV, print media, and radio interviews the government's commitment and resolve to stamp out drink driving spread. These initiatives formed a cost-effective campaign for the prevention of drink driving.

Goggles Simulate Different Levels of Impairment

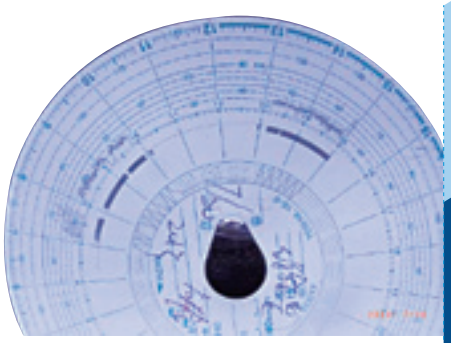
The imported, high-tech drink driving goggles come in both daytime and nighttime versions that are separated into various levels of impairment ranging from mild to moderate and severe. In the interest of safety, activity organizers arrange plastic bowling pins or cones into an "S" shape or a straight line. Participants attempt to navigate the course while wearing the glasses, as a way of mimicking the effects of being under the influence of alcohol.

Participants who stumble or knock over cones experience the hazardous behavior that makes operating a motor vehicle while impaired so dangerous. The experience cultivates a commitment to never drink and drive.

An Innovative Experience to Strengthen Prevention of Drink Driving Accidents

Participants in the anti-drink driving activities gave positive responses. Some expressed unsteadiness while others said it seemed as if the floor was floating. Despite feeling as if they were steadily walking, they knocked over cones. Children who experienced a simulation of what it is like to drive while drunk said they felt dizzy and would not dare get into a vehicle driven by a person who had been drinking. They promised to urge their parents never to drink and drive. Besides road safety lectures and drink driving classes, the drink goggles were incorporated into fun road safety activities that turned prevention of drink driving into a community-wide movement. The campaign shows how joint hard work can encourage correct driving behaviors and transportation safety.

Pioneering Use of Driving Records to Suppress Speeding by Buses on the Alishan Highway



A primary mode of transportation to the Alishan Scenic Area, one of the nation's most popular scenic destinations, is the tour bus. Accidents often result in serious injuries and even death.

Major Alishan Scenic Area Tour Bus Accidents

(June 2012 – June 2013)

Date/Time	Location	Injuries/Deaths	Cause of Accident
After 11:00, 6/27/2012 (Wednesday)	83 K, Provincial Highway 18	13 Injured (Minor)	A speeding tour bus (771-BB) shook after a suspected brake malfunction
13:43, 9/24/2012 (Monday)	64.7 K, Provincial Highway 18	0 Injured	A speeding tour bus (376-BB) struck a small passenger car after failing to maintain a safe distance
9:00, 12/10/2012 (Monday)	39.5 K, Provincial Highway 18	15 Injured	A speeding tour bus (361-BB) struck a safety railing after a suspected brake malfunction
9:20, 12/29/2012 (Saturday)	30.6 K, Provincial Highway 18	1 Death	A speeding tour bus (Z5-420) brushed a scooter after failing to maintain a safe distance
14:04, 4/22/2013 (Monday)	69.2 K, Provincial Highway 18	19 Injured (Minor)	A speeding tour bus (568-AA) and a truck passing in the opposite direction brushed one another after failing to maintain a safe distance
13:26, 6/19/2013 (Wednesday)	48.5 K, Provincial Highway 18	1 Death, 7 Injured (Minor)	A tour bus (991-DD) was suspected of going too quickly along a curve while traveling downhill (average speed 45 km/h, speed at the time of the accident 60 km/h). The bus was not in low gear.
Total (13 Months)	Six Incidents	2 Deaths, 54 Injured	
Average (Per Month)	0.5 Incidents	0.2 Deaths, 4.2 Injured (Minor)	
Average (Per Year)	5.5 Incidents	1.9 Deaths, 50 Injured (Minor)	

Source: Reported traffic accidents and emergency statistics, Chiayi Motor Vehicles Office

Using Tachograph Charts to Uncover Speeding Violations

Analysis by the Chiayi Motor Vehicle Office of past accidents involving tour buses showed that speeding was often a significant contributing factor. Therefore, in a pioneering move, the office required that tachographs be installed on all tour buses traveling the Alishan Highway then used tachograph records to fine violators. This quickly minimized speeding, thereby lowering accident rates, maintaining safety on the roads, and guaranteeing protection of life and property for road users.

Various Channels Used to Promote the New Policy

(1) Letters sent to tour bus guilds and drivers' unions requested that members be informed of the rules and encouraged to follow them.

(2) The Chiayi Motor Vehicle Office reported on the policy during a report on road safety in Chiayi County. It encouraged the Chiayi County Police Bureau and other agencies to assist and support promotion.

(3) Arrangement was made for CMS signage along Provincial Highway 18 to be used for promotion.

(4) The Fifth Maintenance Office installed signage in parking lots along the highway informing drivers that tachograph records would be used as evidence to suppress speeding.

(5) Guidelines for buses driving on mountain roads were published and distributed to drivers during joint roadside safety checks by police and inspection units.

(6) Publicity conducted through press releases and mass media channels.

(7) Updated information posted on the DGH website expanded the publicity of important topics.

(8) The general public assisted with monitoring by submitting video of dangerous driving behavior on the Alishan Highway. Souvenirs were given as thanks.

Innovative Method for Suppressing Violators Reduces Accident Casualties

Following implementation by motor vehicle authorities, investigation showed that there was one fewer accident and one fewer death from July to December 2013 than the same period in 2012. Total injuries dropped by 14, a 93.3% reduction. The initiative effectively reduced injuries and deaths attributable to traffic accidents, thereby ensuring the safety of road users and property.

Comparison of Traffic Injuries and Deaths, July – December 2012 and 2013

Time Period	Accidents	Deaths	Injuries
July – December 2012	2	1	15
July – December 2013 (Post-Implementation)	1	0	1
Year-on-Year Comparison	-1	-1（-100%）	-14（-93.3%）

Promoting Self-Administered Health Examinations for Senior Drivers

In order to prevent seniors from impacting driving safety due to health issues commonly associated with aging, motor vehicles offices under the DGH used computer records to contact persons 70 years old and above with driver's licenses valid for more than 12 years. The offices recommended that citizens with health issues affecting their ability to drive turn in their driver's license and that a record be made in the second-generation motor vehicles and driver information system.

The offices also worked with local social administration agencies, health agencies, and hospitals to hold lectures on safe road use for seniors. At these events, people no longer fit to drive were encouraged to turn in their licenses.

A Traffic Safety Promotional Activity for Senior Drivers

Employing a Diverse Range of Publicity Channels

Measures used to publicize self-administered health examinations for senior drivers included the following:

(1) Screening for persons 70 years old and above with driver's licenses valid for more than 12 years.

(2) Persons uncovered in the aforementioned screenings were verified against national household registration and conscription records of the data communications unit under Chunghwa Telecom. For those listed as deceased, a license cancellation record was made in the second-generation motor vehicles and driver information system.

(3) Other persons uncovered in the screenings were sent a form to assist with a self-administered health exam. Seniors rated as unable to withstand the physical or mental burdens of driving were told to stop driving and to turn in their licenses. Alternative transportation options – such as buses, taxis, or assistance from friends and family – were recommended.

(4) Seniors voluntarily willing to turn in their licenses must provide a copy of their national ID, their original license, and a form. A record is kept in the second-generation motor vehicles and driver information system.

(5) In combination with local social administration agencies, health agencies, and hospitals, the offices reach seniors through elder care vehicles, parks, and learning centers that seniors gather. Traffic safety lectures that discuss seniors turning in their licenses convey the value of health checks as a tool to evaluate whether a person is fit to drive. These outreach initiatives, which included prize giveaways for answering questions correctly, let motor vehicles offices directly reach their target audience.

Recognition Provided at the MOTC Innovative Contributions in Road Safety Awards

In 2013, motor vehicles units under the DGH held a total of 609 traffic safety lectures focused on seniors 70 years old or above, reaching people a total of 95,649 times. A total of 6,614 seniors turned in their licenses.

Effectiveness of the program led the MOTC to present Taipei City Motor Vehicles Office with a second place award in the motor vehicles category at the Innovative Contributions in Road Safety Awards.

Building a Foundation for Traffic Safety at Safe Driving Education Centers

Traffic safety knowledge must be solidified at the grassroots level while being spread far and wide. The DGH actively sought to achieve these goals through defensive driving training for scooter drivers and cyclists. Besides traveling to school campuses, officials built a traffic safety and promotional system for seniors. By reaching students, adolescents, young adults, seniors, and other members of the general public, the DGH taught people to respect traffic safety regulations and road rights. Cultivation of friendly and safe driving habits together with respect for the rules of the road led to improved traffic order and safety.

Achievements by Safe Driving Education Centers in Taipei, Kaohsiung

As in 2013, both the Taipei City Motor Vehicle Office Safe Driving Education Center and the Kaohsiung City Motor Vehicle Office Safe Driving Education Center have obtained great achievements in related operation.

1. Taipei City Motor Vehicle Office Safe Driving Education Center

Safe Scooter Driving, Campus Educational Tour		Safe Bus Riding Experience		Safe Cycling Promotion		Traffic Safety Promotions, Agencies and Organizations		Total	
Events	Attendance	Events	Attendance	Events	Attendance	Events	Attendance	Events	Attendance
8	1,805	28	1,388	183	10,341	35	2,064	254	15,598

2. Kaohsiung City Motor Vehicle Office Safe Driving Education Center

Safe Cycling, Campus Educational Tour		Safe Scooter Driving, Campus Educational Tour		Senior Driving Safety Education		Total	
Events	Attendance	Events	Attendance	Events	Attendance	Events	Attendance
27	6,463	13	2,122	26	8,471	66	17,056

Strengthening Regular Training of Professional Drivers of Large Vehicles

In order to build a regular training mechanism for professional drivers of large vehicles, in March 2010 the DGH amended Article 19-4 of the transportation industry management regulations. From October 1, 2010, operators of large vehicles were required to confirm that drivers had undergone regular training or pre-professional lectures held by road supervisory agencies prior to assigning them to a job.

Return Training within Six Months of License Renewal

Return training sessions for professional drivers of large vehicles are to take place within six months of license renewal review. Drivers can make an appointment online for the training session.

Preparing the Regular Training Program

In order to create a more comprehensive program that facilitates regular training of professional drivers, in June 2013 the DGH invited experts and scholars to review and complete educational materials. Besides updating new examples, they added SOP drivers should follow when vehicles stall traveling up or down a slope.

In July 2013, motor vehicles offices under the DGH held meetings to explain return training to tour bus guilds, bus guilds, tour bus unions, tour bus companies, and bus companies.

On September 1, 2013, the DGH conducted a special program offering the first return training visit for professional drivers of large motor vehicles for free. The event encouraged drivers to follow related regulations.

Purchasing New Equipment to Improve Training Quality

The DGH purchased three Scania large vehicle chassis meant for safety training purposes. They contain equipment used in the industrial setting, such as a smart shifting system, an anti-lock braking system, and a stability system.

Honoring Changhua Motor Vehicles Station at the 5th Government Service Quality Awards

A smile, a look – while these may seem like no effort at all, such conscientious gestures have the power to change.

Innovations Win Approval of Local Residents

Changhua Motor Vehicles Station introduced many innovations. Pioneering free road test guidance for disadvantaged groups assisted people with hearing problems and physical or learning disabilities. Cooperation with government agencies and enterprises facilitated onsite document acceptance and services. The station provided the nation's first mobility services staff, who helped seniors and those with mobility issues through the registration process. Establishment of the Changhua motor vehicles cycling team allowed for special traffic safety promotions and activities. And the station raised efficiency by launching the nation's first system for paper-free automobile inspections and online number cancellation. Hard work that went into these programs earned respect and praise from local residents.

A Meticulous, Caring Approach to Work

The station director led implementation of a plan for providing more courteous service that encouraged staff to treat members of the general public as family. Efforts to create a warm and comfortable service environment led to awards for tobacco control and health promotion (including healthy workplace). Fundraising activities supported orphanages and live-alone seniors. And cooperation with health centers and hospitals facilitated health checks and cancer screenings. Services such as these were groundbreaking for a motor vehicles office and showed a commitment to caring for local residents.

Love Advances Motor Vehicles Services

Rather than seeking to be the best, one must recognize that there is no end to improvement. In the future, Changhua Motor Vehicles Station will rely on the following four service beliefs: proactive, innovative digitalization, care for the disadvantaged, caring service. Moving away from past thinking of motor vehicles solely playing a supervisory role, it will add warmth, consideration, and convenience to let local residents know that love allows for endless service possibilities. All members of the station team will follow this philosophy.

Service Is an Endless Road

Winning this award was no fluke. It took 32 months of preparation and hard work carried out between September 2010 and April 2013 in conjunction with members of the MOTC, DGH, and Taichung Motor Vehicles Office. The result was to turn care for the disadvantaged and caring service from slogans into an integral part of public service.

Besides the recognition and honor that comes from winning this award, even more important was the sincere gratitude from customers served. Changhua Motor Vehicles Station believes that winning this award is only the beginning and service will never end.

Honoring an Outstanding Archivist at Madou Motor Vehicles Station

A lack of recognition for the important role served by archives management units and staff is a longstanding phenomenon. Few people inquire into the extensive effort archivists put into their jobs. Therefore, in 2002, the National Archives Administration established both the Records Management Quality Awards and the Outstanding Archivist Awards, with the inaugural awards held the following year. The purpose is to encourage government agencies to introduce new mechanisms for archives management by awarding agencies with outstanding accomplishments along with the archivists who for years have made quiet contributions.

Strict Criteria for Selecting Outstanding Archivists

To compete for the Outstanding Archivist Awards, one must have either directly conducted archives management work or served in an archives management supervisory role for at least the previous two years. Qualified candidates must then undergo an evaluation period lasting a minimum of four months.

Evaluation consists of several stages. First, the evaluation committee and members of the administration conduct preliminary document review of recommended candidates. Outstanding candidates are chosen for follow-up evaluation and interviews then the committee names its winners' list.

Outstanding Performance Led the Station to Win an Records Management Quality Awards

For the past 18 years, Ms. Zhuang Mei-hua has conducted archives management at Madou Station. Starting with implementation of the Archives Act on January 1, 2002, she has followed guidelines in the administration's archives management manual to organize past records, enter archives into databases, catalogue archives files, evaluate archives, clean up archives, conduct archives application services, manage confidential archives, digitalize archives management, and collect and deliver catalogues. She has sought staff and funding for planning archives storeroom collection space and equipment. Improved software and hardware facilities allowed for the reorganization and categorization of hundreds of thousands of official documents. Facing such monumental tasks, Ms. Zhuang conducted her work admirably. Without firsthand experience, it is impossible to grasp the commitment she put in throughout the years.

Ms. Zhuang's hard work solidified the archives management foundation at Madou Station, thereby allowing the station to emerge a winner in the 10th Records Management Quality Awards presented by the Research, Development and Evaluation Commission.

Conscientious Management of Archives Was Key to Winning

Out of a belief that excellent archivists should be recognized, Madou Station enthusiastically encouraged and recommended Ms. Zhuang for the commission's 11th Outstanding Archivist Awards. After receiving nomination, Ms. Zhuang overcame subsequent challenges to emerge as a winner from among the 27 other archivists up for consideration.

Colleagues at Madou Station not only felt happy for Ms. Zhuang but also shared in her glory. During an interview with the evaluation committee, a quote from Ms. Zhuang stood out: "Every archive must be handled with a tender heart, as if one were caring for her own child." Such commitment shows why Ms. Zhuang was truly deserving of the archivist award bestowed upon her.

Union

Aspiring Toward Sustainable Highways

Announcing Road Sections Prohibited to Buses

Sign Indicating a Hazardous Slope at 22K + 100, Provincial Highway 11

A December 9, 2012, accident involving a medium-sized bus on an industrial road in Smangus, Jianshih Township, Hsinchu County led the DGH to gather related agencies for a meeting on December 14, 2012. Officials decided that, in accordance with rules governing highway route design, new road prohibitions for Type 2 buses (mid-sized buses) would be established and combined with existing procedural guidelines governing road sections prohibited for buses or requiring extra caution. These guidelines were to be used as a reference for agencies when evaluating roads in their jurisdictions. Agencies present at the meeting expressed willingness to follow the rules and agreed to full surveys that would include non-highways.

Comprehensive Review of Bus Driving Conditions and Environment

The guidelines take into account the turning radius of buses on curved roads, width and height of buses, climate, etc. Road geometry (such as width, curve radius, slope gradients, and tunnel height), space between oncoming traffic, the existence of a regular bus service, and bus accident rates played a role in screening and inspecting roads. Road sections determined unsuitable for buses were announced by competent authorities.

Reason for Inspection	Road Sections Prohibited for Type 1 or 2 (Mid-Sized)	Road Sections Prohibited for Type 1	Road Sections Requiring Extra
Total Road Width	Total Width < 5.5 M without Extra Space Between Oncoming Traffic	5.5 M ≦Total Width < 6.5 M without Extra Space Between Oncoming Traffic	6.5 M ≦Total Width < 7 M
Smallest Horizontal Curve Radius	Smallest Horizontal Curve Radius < 12 M	Smallest Horizontal Curve Radius < 15 M	Smallest Horizontal Curve Radius < 20 M
Tunnel Height	Tunnel Height < 4.1 M	Tunnel Height < 4.1 M	4.1 M ≦ Tunnel Height < 4.6 M
Slope Gradient and Length	>12% and 150 M	>12% and 150 M	--
Climate	Snow, Ice	Snow, Ice	Heavy Fog

Completion of Road Survey and Dynamic Review

Through the end of 2013, the DGH and related agencies had completed surveys and announced 665 road sections prohibited for use by buses (including 24 on provincial highways) and 269 sections designated as requiring extra caution (including 24 on provincial highways).

Dynamic supervision measures facilitate follow-up review of road sections, so restrictions can be imposed or eliminated based on changes to road conditions.

Maps on Google Earth Showing Roads Prohibited to Buses

Warnings, Publicity, and Launch of a Map Inquiry System

The DGH and related authorities post signs and announcements on road sections banned for use by buses and warning signs on roads designated as requiring extra caution by buses.

For road sections with gradients of 7% or more on provincial highways or stewarded county highways, the DGH posts not only slope warning signs in accordance with regulations but also signs telling truck drivers to use a lower gear. Local content management systems are also employed to publicize information.

Further warnings and control information are posted on signs hanging from overpasses and other bridges. Some roads have control stops (such as Wulipu control stop on Provincial Highway 21) where officers enhance on-site control.

Using Google Earth, the DGH created spatial maps showing all road sections banned for use by buses. This information is available for browsing or download on the interregional/tour bus section of the DGH website, accessible via a link to inter-city information (http://www.thb.gov.tw/TM/Webpage.aspx?entry=180). Bus companies are encouraged to use this information to bring added value to their services.

Wulipu Control Stop at 221 K + 950, Provincial Highway 21

69 K + 660, Provincial Highway 9 (Sign Indicating Buses Should Exercise Extra Caution)

Strengthening Safe Driving Training and Maintenance of Public Service Vehicles

In order to raise highway disaster prevention and rescue capabilities while strengthening motor vehicle services, besides replacement of old transportation equipment and machinery, the DGH continued to improve safety and defensive driving training of public service vehicles operators. Evaluation procedures enhanced these measures.

Conducting Vehicular Replacements

Replacements conducted in 2013 included the following:

(1) Replacement of 19 highway patrol vehicles, two four-wheel drive patrol vehicles, one four door utility vehicle, two inspection vehicles, seven dual purpose passenger/goods transport vehicles, one testing bus, one instructional bus, and 14 scooters, for a total of 47 vehicles in eight categories. Bidding, contractual procedures, delivery, and acceptance were completed. Thirty-five vehicles were for construction units and 12 for motor vehicles units.

(2) Purchase of new four-wheel drive highway patrol vehicles for use in mountainous areas. This facilitated patrols and urgent repairs in disaster zones when roads were muddy, allowing highway staff to improve efficiency and better protect life and property.

(3) Purchase of new testing and instructional vehicles for use by driving students and road test takers. By facilitating instructional and licensing procedures, the vehicles improved traffic safety.

Safe Driving Training for DGH Staff

In terms of driving safety and educational training, in 2013 the DGH held 10 vehicular accident management and safe driving lectures. A total of 400 DGH staff with driving duties learned how to manage accidents and studied traffic regulations in order to improve traffic safety.

(1) Driver training covered study of traffic ordinances and regulations as well as safe driving measures. Content included the importance of keeping vehicles clean and conducting maintenance and inspections in order to ensure driving safety.

(2) When driving, DGH members must follow the traffic regulations, pay close attention to the road and road conditions, maintain a safe distance between other vehicles, adhere to regulations, avoid speeding, and avoid overloading. By heeding the instrument panel for any irregularities, they can eliminate potential accident risk factors.

(3) Drivers must learn common safety and defensive driving techniques, so when hazardous road or traffic situations arise, they can prevent accidents or casualties from occurring.

Unannounced Inspections to Ensure Maintenance of Public Service Vehicles

The DGH conducted unannounced inspections and evaluations of automobile management by maintenance offices, motor vehicles offices, new construction engineering offices, and training centers. This ensured maintenance and repair of all vehicles, including those for testing and instructional use, along with replacement of old vehicles. Benefits were extensive: reduction in fuel usage rates and maintenance fees, saving public funds, improvement of driving safety, and maintaining smooth traffic flow on roads.

Building the Third-Generation Motor Vehicle and Driver Information System – People, Intelligence, Cloud, Safety

Motor vehicles and driver information systems progressed from computerization in the first generation (1981 – 1993) to online service in the second generation (1994 – 2014). As information technology continues to develop, the third-generation system will apply new techniques to new functions. Service will be more user-oriented and integrate four primary concepts: integration, inclusion, intelligence, and innovation.

Comprehensive, Intelligent Third-Generation Services

In order to introduce comprehensive intelligent services, design of the third-generation system was based on the following concepts:

1. People-Oriented Information Services

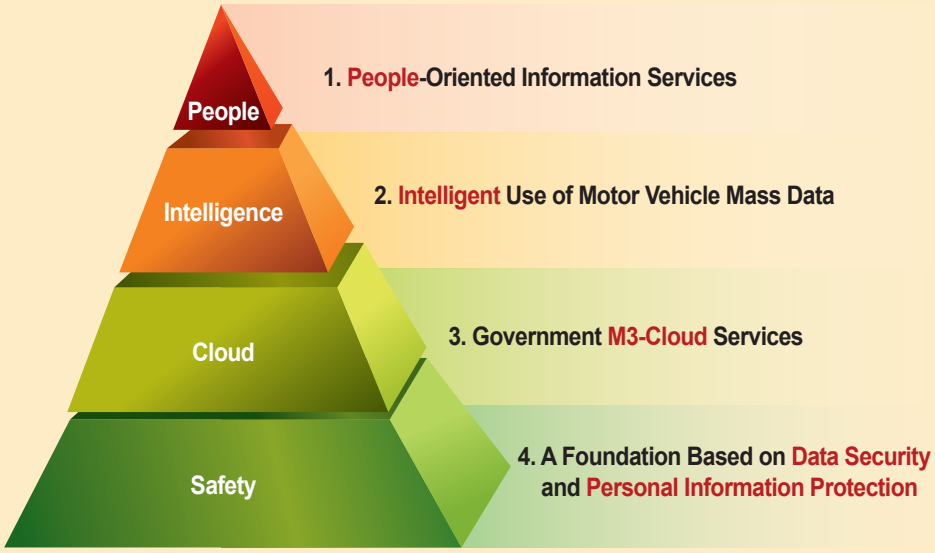
People-oriented services include better management of motor vehicles, data and records to improve notification delivery. Focused services and mobile apps provide both customized services and active alerts; establishment of a road user service center that provides integrated services.

2. Intelligent Use of Data

The mass of motor vehicle data collected over the past three decades was mined and analyzed, accumulated and applied via intelligent commercial techniques. Besides achieving added value, these measures bring greater intelligence to motor vehicles services. Officials accumulate, pass on, and share experiences, while high-level decision-makers use the information for reference.

3. Motor Vehicles Cloud Services

Compilation of motor vehicle information assisted with digital convergence. A single platform for motor vehicle information provides diverse services across multiple platforms and devices, creating a valuable electronic management tool.



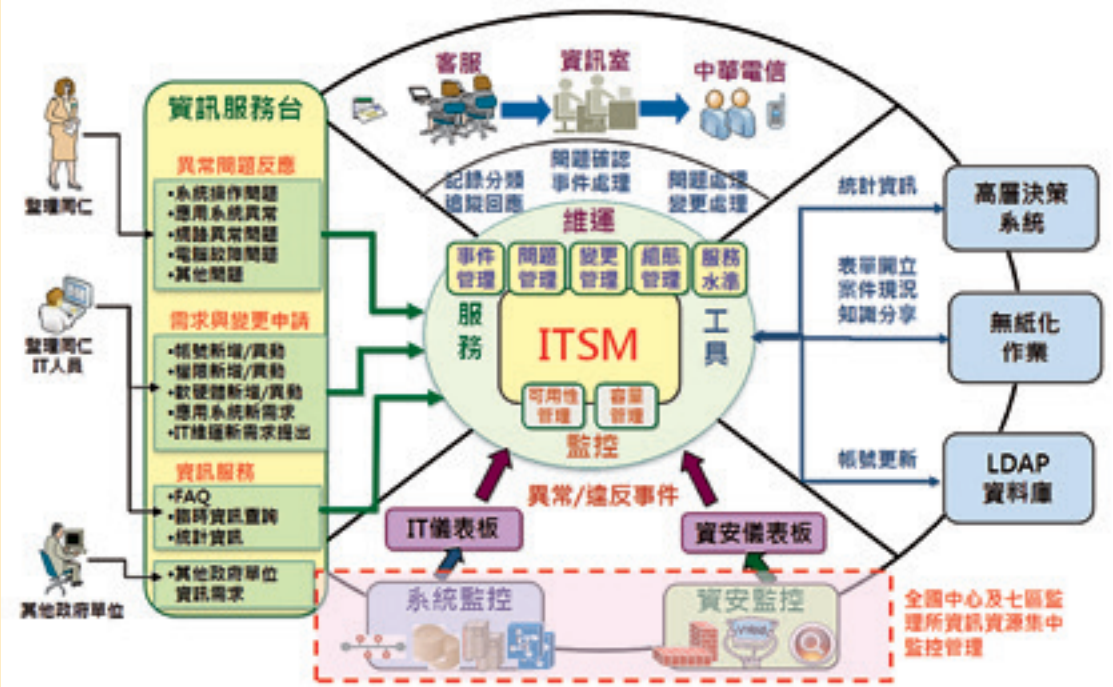
4. Strengthening Data Security and Personal Information Protection

(1) Building Central Monitoring and an Information Safety Maintenance Center

Comprehensive monitoring and management mechanisms must oversee networks, machine rooms, mainframes, databases, and information security. These, along with application programs, information security, and machine room environment, are covered by the third-generation motor vehicles and driver information system, in order to give real-time responses to operations and the overall condition of the third-generation system.

(2) Integrates international certifications: ISO20000 for IT service management, ISO27001 for information security management, and BS10012 for personal information management.

(3) Stronger security measures are added to each stage of the information lifecycle to ensure protection of personal information. Security incidents are reported as they arise so they can be handled according to the information services management process.



Breaking New Ground in Map and Data Applications via SafeTaiwan

An extensive cross-departmental endeavor since 2011 – in the areas of plan evaluation, drafting of regulations, procurement agreements, and map and data collection – which culminated in September 2013 with the launch of the SafeTaiwan platform. Standardized systems for management and announcement create an integrated platform for the browsing of maps and cartographic information. Additionally, universal design principles led to seven unique service models to facilitate use by different target groups.

Improvements via the Second Stage Establishment Plan

In 2013, the DGH invited 18 agencies and organizations to investigate ways of using maps and data compiled on the SafeTaiwan platform to assist with advance disaster prevention and rescue decision-making along with the rapid spread of related warnings.

In the future, the DGH will continue to expand stored maps and data, increase the number of cooperating agencies and organizations, and improve coordination models. It took an important step in this direction in December 2013 with the formal launch of the second stage establishment plan, which seeks to further improve software as a service, platform as a service, data as a service, and infrastructure as a service function.

Integrating Government Resources with Global Disaster Prevention and Rescue Maps and Data

The DGH has already collected maps and data from government agencies while sourcing open information available globally. Map and information types cover fields as diverse as information and communications technology, transportation, atmospherics, civil engineering, geology, and disaster prevention and rescue. They are organized under the intuitive headings of land, water, road, bridge, human, and disaster.

Currently, map and data information is divided into more than 2,000 "layers" and broken down into general and restricted access categories for external and internal users. Approximately 93% of the information is fully open for browsing, including 610 layers that provide access to dynamic information from external agencies and organizations, such as weather and earthquake

Post-Earthquake Highway Inspection by CCTV

19 Contributors to SafeTaiwan

Group Photo at the Workshop on Taiwan ICT Development

Trophy from the 2013 IT Month Top 100 Innovative Products Awards

info, CCTV images, and highway blockages. Besides serving as a valuable resource for disaster prevention, rescue, and warning decisions, the platform is a tool for individual users to manage risk and can even be utilized for national land planning.

Widespread Recognition of the Platform's Innovative Services

The SafeTaiwan platform is a user-oriented product divided into seven service models. It is highly usable, effective, fast and can be used across different devices and browsers. Its various service models satisfy the needs of high-level decision makers, front line prevention and rescue workers, general users, as well as map and data management staff.

Twice the DGH was invited to display the SafeTaiwan platform at the Workshop on Taiwan ICT Development, hosted by the Ministry of Foreign Affairs, and the platform was also honored in the innovative service category at the 2013 IT month top 100 innovative products awards.

Public-Private Coordination Consolidates Disaster Prevention and Rescue Capabilities

Disaster prevention and rescue is led by the government, yet still depends on the support of a wide range of groups for fast resolution. For example, when an earthquake and tsunami struck Japan on March 11, 2011, the disaster that resulted required both public and private resources in order to achieve timely rescue and restoration.

Therefore, for the first time research organizations and commercial enterprises were invited to cooperate with government agencies in development of this platform. A Combination of public and private strengths will give added value to government resources and local information provided by citizens, thereby consolidating disaster prevention and rescue capabilities.

Remote Backup Centers Strengthen Information Security

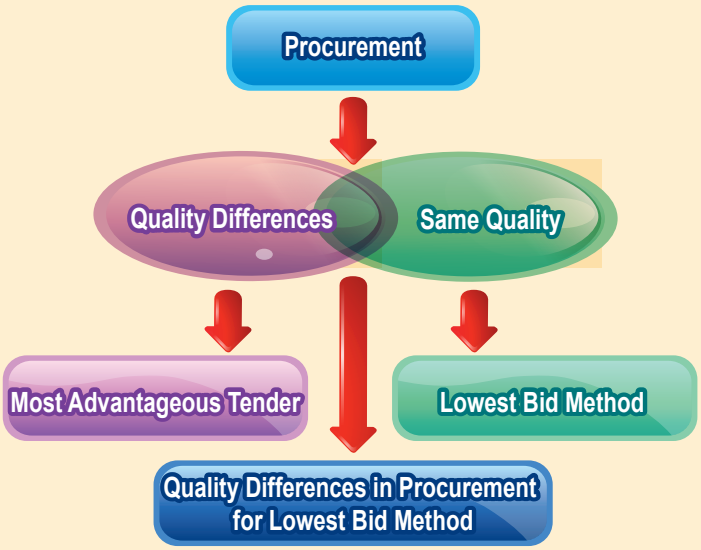
Stability and reliability are the prerequisites of a safe service. In December 2013, when the DGH officially launched the second stage plan for its spatial information storage and service platform, it used the Government Service Network to build remote backup centers in northern and central Taiwan. Through use of authenticated encryption, Security Operation Center, and adherence to the Personal Information Protection Act, it ensures information security and protection of personal information, in order to provide truly safe services.

Diverse Cooperation Models Provided Via API Construction

As part of the second stage plan, the DGH will develop an application programming interface (API). Besides map and data browsing and management functions available with the original service platform, cooperating agencies and organizations will be able to use the API to access maps and data, or they will be able to use KML-API to add maps and data to their own management platforms. The new functions will strengthen existing cooperation models.

Pioneering Use of Procedures Governing Quality Differences in Construction Procurement for Lowest Bid Method

In order to prevent excessive underbidding from affecting infrastructure quality, in November 2011 the DGH established regulatory procedures governing quality differences in construction procurement when awarding a contract to the lowest tender. As a trial, the procedures were first applied to the Suhua Highway of Provincial Highway No.9 Mountainous Section Improvement Project in conjunction with application principles for use by engineering offices. The initiative led the DGH to be recognized as the first agency under the MOTC to apply such procedures.



Principles of Quality Differences in Construction Procurement

The DGH established the regulatory procedures in accordance with Article 52 of the Government Procurement Act and Articles 64-2 and 66 of the enforcement rules.

Following analysis of quality differences for construction procurement, when there are significant differences in quality, generally the most advantageous tenderer shall be the winner. When there are not significant differences in quality, the tenderer with the lowest tender shall be awarded the contract.

Comprehensive Evaluation Mechanisms for Quality Differences in Construction Procurement

From establishment of the regulatory procedures to the end of December 2013, the DGH held 24 tenders (comprising 18 large procurements and six non-large procurements), 15 of which are in the construction stage.

When assessing quality differences of construction procurement, review mechanisms evaluate technical proposals to eliminate tenderers that fail to meet desired standards. Through service recommendation documents, tenderers gain a better understanding of key construction components, allowing them to grasp unusual or hypothetical work and items for subcontracting, so the bidding price can more closely reflect actual costs. A better understanding of the construction project also allows earlier preparation by tenderers, thereby reducing time for preliminary procedures and the start of work after the tender is awarded.

Lowest bid tenderers with poor construction techniques and capabilities, poor management capabilities, or weak performance in meeting contractual terms can be eliminated via the review process. Results show that review has been effective in eliminating negative underbidding practices and has thereby raised construction quality.

National Seminar for Agencies Involved in Construction

For expanded results and communication, the MOTC asked the DGH to hold national seminars on procedures governing quality differences in construction procurement when awarding a contract to the lowest tender. Four seminars took place, on November 28 and December 9, 19, and 26, 2013, in northern, eastern, central, and southern Taiwan, respectively. In attendance were staff responsible for procurement at the Public Construction Commission, MOTC, and agencies overseen by the MOTC, including the Taiwan Railways Administration, Bureau of High Speed Rail, Railway Reconstruction Bureau, Taiwan Area National Expressway Engineering Bureau, Taiwan Area National Freeway Bureau, Civil Aeronautics Administration, Tourism Bureau, Central Weather Bureau, Institute of Transportation, and Maritime and Port Bureau, as well as the Taiwan International Ports Corporation, Chunghwa Post Co., Taoyuan International Airport Corp., along with engineering offices under the DGH. In order to increase communication with commercial representatives and pave the way to more widespread benefits and cooperation, joining the aforementioned public representatives were members of the Taiwan General Contractors Association.

A total of 136 people attended the seminars, including 13 members of the contractors association. Enthusiastic participation showed that the seminars achieved their objective of popularizing the procedures. Industrial representatives in attendance – from the contractors association, Pan Asia, Continental Engineering Corp., and BES Engineering Corp. – were inspired to pay greater attention to construction quality and improve their image.

The MOTC praised the seminars following their completion. In the future, the DGH will continue promotion of procedures governing quality differences in construction procurement when awarding a contract to the lowest tender. This will prevent excessive underbidding from affecting infrastructure quality.




Launching of a Book Chronicling Provincial Highway 1

For many people, Taiwan Provincial Highway 1 is home to more memories and dreams accumulated during the process of growth and life than any other road in Taiwan. The highway begins in the north at one of Taipei's most bustling areas: Boai special district, at the intersection of Zhongxiao East-West Road and Zhongshan North-South Road. After passing through 14 cities and counties and more than 70 townships and villages on Taiwan's west coast, it ends in the beautiful Pingtung fishing village of Fonggang. Over its 460 kilometers the road penetrates the localities of the west coast and traverses more than 400 years of history, sharing in the extensive economic activity and historical events that take place along this important corridor.

Promotional Material for the Book Launch

A North-South Route Plays Witness to Taiwan's West Coast Development

In the beginning, Provincial Highway 1 was known as "state road." It became the "north-south highway" during the Japanese colonial period, and only in 1962, when the provincial highway numbering system was completed, did it gain the name in use today. As it winds from north to south the highway passes through busy metropolises, quiet mountain regions, and coastal zones, enchanting drivers with varied landscapes. On either side of the two-way, four-lane highway rows of trees seem to wave at passersby. Intersecting trains pass overhead or through underground tunnels. The wide and spacious, smooth and level route offers unobstructed passage on a modern thoroughfare.

Scene at the Book Launch

In the 1970s, when construction of a national freeway network was in its initial stage, there was discussion of turning this main line into a sort of direct thoroughfare between major destinations. In the end, the road was left as a link to the many villages, towns, and cities of the west coast.

Portrait of a Highway in a Feature Book and Exhibition

How did Provincial Highway 1 progress from a series of un-linked dirt roads, into the wide and spacious, smooth and level, tree-lined modern thoroughfare that travelers enjoy today? In a sense it was like the complicated, difficult transformation of a caterpillar into a butterfly.

To offer a complete record of the magnificent history behind Provincial Highway 1, the DGH gathered a special team to examine everything about the highway. From long historical searches and field investigations, to camera crews who captured aerial footage,

photographs from below bridges, and tracking footage from cameras placed atop automobiles, the team compiled valuable images and information into a feature publication that paints a portrait of Provincial Highway 1 from past to present.

A book launch took place on December 18, 2013, in the first floor main hall of Taipei Main Station beside the North 2 entrance. Also, up until the 25th of the same month, a related video exhibition continued in the same location.

A Book Launch Plays Witness to History

Among the important people gathered for the book launch, besides MOTC consultant Zhang Tong, there were retired senior officials of the DGH, including former Deputy Director General Wu Rui-long; former chief engineers Lin Jia-dian, Wang Qing-yi, and Zhou Yin-de; and former Motor Vehicle Division chief Shih Jin-liang. Each took time out of their schedules to witness this historic moment. The book launch began with a greeting and a brief explanation of the relationship between Provincial Highway 1 and Taiwan's development from Deputy Director General Jaw. Next, came a viewing of a 10-minute video produced in conjunction with the book, followed by a speech from consultant Zhang.

For the highlight of the event, organizers invited supervisors, VIPs, and retired highway officials to sign the inside cover of one of the books. Consultant Zhang then presented this new artifact to Deputy Director General Jaw, who offered it to the curators of the DGH exhibition room to become part of the room's permanent collection. Next, forebears of highway management, including former Deputy Director General Wu, former chief engineer Lin Jia-dian, and former Motor Vehicle Division chief Shih Jin-liang, shared their highway stories. Finally, it was time for the book's authors to speak. The creative director, Mr. Lin Ching-hu of Taiwei Audio/Video Co., and writers Wu Li-ying, Zhong Dong-rong, and Kang Yuan went on stage to discuss their experiences, bringing to an end this joyful, warm, and touching look back at history.

The Unique Grace of Provincial Highway 1 in Video

The cultural and landscape changes that have taken place along Provincial Highway 1 are a microcosm of the past 400 years of Taiwanese history. The road has accompanied the development of major cities on Taiwan's west coast. Famed views and historic landmarks dot its route, drawing in interested visitors.

Consultant Zhang Tong Handing Over the Signed Copy of the Book to Be Stored in the DGH Archives

Video footage depicting Provincial Highway 1 shows the changes that have taken place to the road along with the land and people that border it. The road is no longer just a road; it is a repository for memories and emotions. From these reflections it is clear that Provincial Highway 1 has its own unique grace.

Conducting the 2013 Safety Protection Exercises

In order to raise risk awareness and the response capabilities of the DGH and workers in the various agencies it oversees, the DGH directed the Kaohsiung City Motor Vehicles Office to conduct safety protection exercises on November 17, 2013. Other units were able to watch and participate.

Safety Drills Linked to Motor Vehicle Duties

The Kaohsiung City Motor Vehicle Office designed four drill categories based on potential risk situations that could be faced by motor vehicle agencies: suppression of personal-use vehicles posing as taxis by joint roadside inspection units, protection and management of personal information, handling disturbances caused by service desk customers and potential explosive packages, and firefighting safety in motor vehicle facilities.

Each drill was not only unique and creative but also integrated motor vehicle responsibilities. Workers of the Kaohsiung office brought lively, realistic performances to humorous plots, earning the praise of everyone in attendance.

Uniform Praise Shown in Satisfaction Survey

Besides members of each agency overseen by the DGH, supervisors from the MOTC joined to provide guidance. Underscoring the communal

nature of this undertaking were invitations given to the Kaohsiung Civil Service Ethics Office, Kaohsiung police and firefighting units, the Kaohsiung Guai Bau Bei Kindergarten, local residents, reporters, and enterprises. Approximately 700 people were in attendance.

Satisfaction surveys showed that participants were deeply pleased with the event. Results included 100% satisfaction for activity site planning, time management, drill design, and overall satisfaction, along with 99.1% satisfaction for promotion.

Additional Lessons Learned in Fun Activities

Besides the exercises, the event included safety promotion quiz activities. Visitors were able to answer questions at electronic kiosks and win prizes in a special quiz game.

Another booth at the exercises encouraged confidentiality of sensitive government information. Various promotional methods raised recognition of the proper handling of sensitive government information to protect staff, agencies, and the public they serve.

Promoting Transparent Administrative-Judicial Cooperation and Clean Governance

In order to ensure the quality of the Suhua Highway of Provincial Highway No.9 Mountainous Section Improvement Project while preventing inappropriate interference, on September 11, 2013, the Directorate General of Highways held a special activity to promote transparent cooperation between administrative and justice units and a platform for clean governance. The event focused on applying the following instruments to infrastructure construction: transparent cooperation between administrative and justice units, preemptive prevention of corruption, and expansion of public supervision. The objective was to turn the Suhua project into a model of quality, professionalism, effectiveness, and honesty.

Showing Resolve to Fight Corruption by Signing a Clean Governance Declaration

The Suhua project is being closely watched and eagerly anticipated by eastern Taiwan residents who long for a safe route home. In order to ensure that construction proceeds smoothly and to prevent malpractice, the Ministry of Justice and MOTC held this activity at the DGH Fourth Maintenance Office and invited industry members, officials, academics, local clean government platform members and volunteers, as well as NGOs. Administrative and justice agencies joined construction teams in signing a joint declaration to promote administrative transparency and clean governance.

Besides the Ministry of Justice and MOTC, other agencies in attendance included the Public Construction Commission, Yilan and Hualien prosecutors and county government offices, the DGH, the Suhua Improvement Engineering Office, along with the Taiwan branch of Transparency International and construction and supervisory enterprises.

On the day of the event, besides signing the declaration, participants listened to a briefing on construction progress and transparency measures given by the head of the Suhua Improvement Engineering Office, Shau How-jei. Other speakers included the head of the Southern Region Water Resources Office, Lai Chien-hsin, and Prosecutor Xue Zhi-he. By sharing experiences and ideas, these officials showed a commitment to using transparency as a tool for preventing corruption.

Suhua Project Construction Status Available 24 Hours a Day

A display at the activity described the information that is available online, relating to the inviting and awarding of tenders by the Suhua Improvement Engineering Office. This includes construction progress and work conditions, quality inspections and improvement of deficiencies, establishment of an environmental protection and monitoring task force by the office, management of energy saving and carbon reduction measures, environmental and ecological conservation, and research and analysis into project impact on hydrology, geology, and water resources. Real-time images and construction photos assist in monitoring of construction enterprises by local residents and members of the general public.

The DGH takes an active role in promoting public disclosure and transparency. By extending worksite invitations to prosecutors, investigators, anti-corruption officials, students, and community groups it promotes transparent government administration, honest practice among construction enterprises, and eager oversight by the general public. By focusing on preemptive prevention of corruption and integrating administrative and judicial resources, it serves as guardian of major national infrastructure projects and guarantor of high-quality construction.

Winning 1st Place for the Team Award at the "2013 MOTC Civil Servants' Writing Contest for Selective Books"

Living in an era of knowledge explosion and worldwide competition, civil servants, as backbones of a country, must strive for excellence and advance with the time, so that they can enhance national competitiveness with innovative and epochal thinking. For this reason, the DGH, which has always encouraged lifelong learning for its employees, endeavors to promote selective book reading.

MOTC Minister Yeh Kuang-Shih Presented an Award to Former Director General Wu Men-Feng

Competition Results Demonstrate the Effectiveness of Organizational Learning Promotion by the DGH

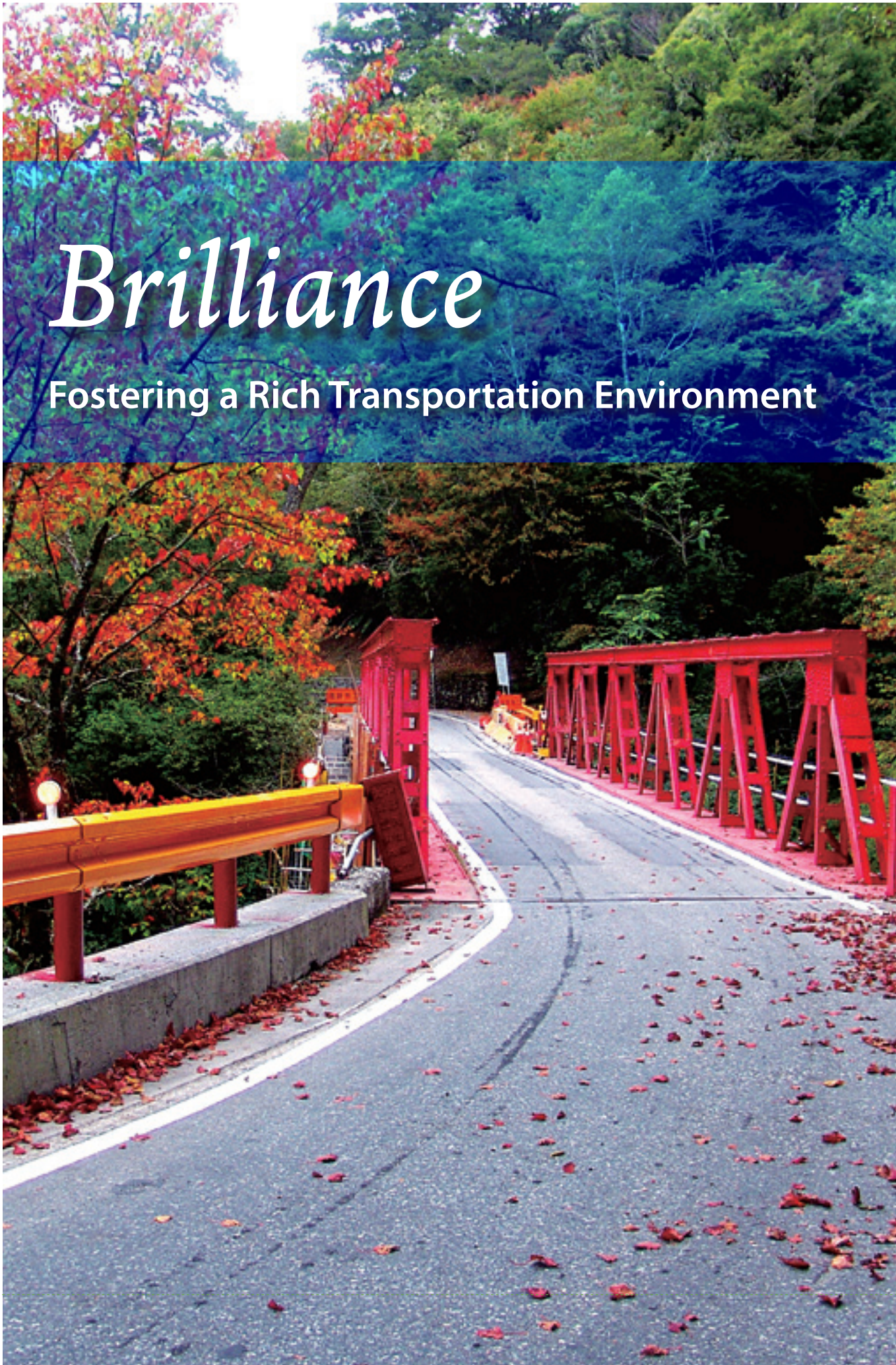
In 2013, the DGH participated in "Civil Servants' Selective Book Review Writing" held by the Ministry of Transportation and Communications (MOTC). The DGH held a preliminary review from 255 reviews and recommended 20 compositions to take part in the MOTC contest. Compositions were evaluated on criteria such as enlightenment and originality, argument and interpretation, rhetoric and structure. The DGH not only produced 4 out of 10 individual winners – one of whom received superior award, one with a first class award, and two second class awards, the DGH also won the first place in the group category for two consecutive years. Ren Ming-kun, a director at the Hsinchu Motor Vehicles Office, won an excellence award at the "National Civil Servants' Selective Book Review Writing" held by the National Academy of Civil Service. The performance demonstrates the effectiveness of organizational learning promotion by the DGH.

Promotion of Reading to Boost Lifelong and Organizational Learning

Organizational learning requires full participation combined with a study philosophy that can lead to consensus and commitment among all members of the organization. In 2013, under the support and encouragement of the director general, the DGH organized many events including 9 "World Café workshops", 27 "Guided Reading classes," 2 "Talk to Writers," 50 "study groups,' and 8 "composition-workshops" to strengthen the annual "Promotional Campaign of Book Reading for Civil Servants" systems.

A"Talk to Writers" event

The DGH also established an online study group section as part of its interactive organizational learning platform. This includes videos of the guided reading sessions, briefings, and book recommendations. By sharing thoughts on the website, DGH staff spark learning interest and raise study effectiveness. Knowledge Management (KM) is just the process of capturing, developing, sharing, and effectively using organizational knowledge. The DGH develops Knowledge management to improve performance and staff quality.



Brilliance

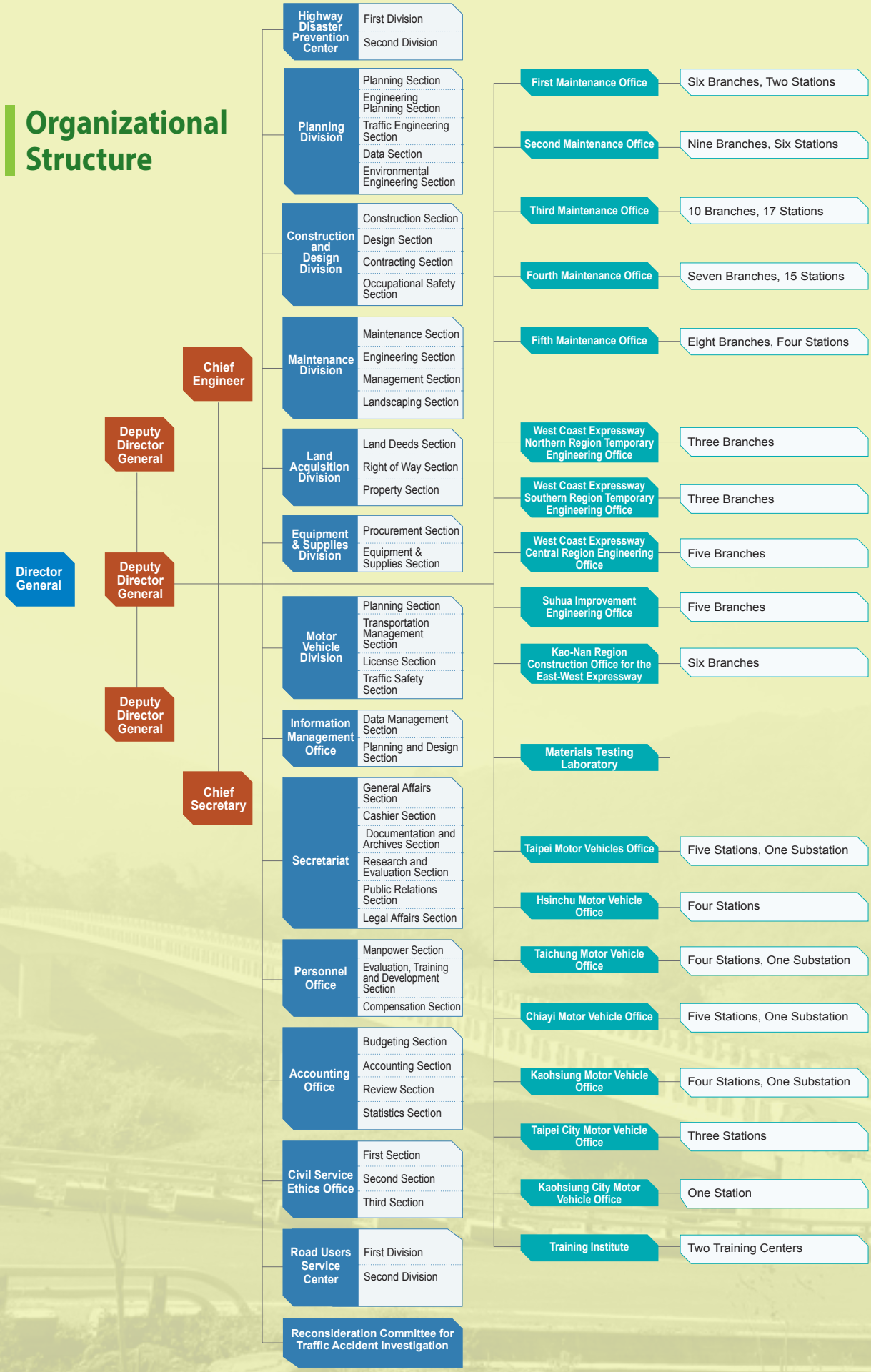
Fostering a Rich Transportation Environment

Administrative Performance

2013 Administrative Projects

Project Name	Annual Budget (NT$1,000)	Timeframe (Years)	Supervisory Level
Follow Up to the West Coast Expressway Continuous Construction Project	4,681,107	2009 – 2019	Executive Yuan
East-West Expressway Construction Projects and Network Improvement Projects	3,475,155	2009 – 2016	Executive Yuan
The Suhua Highway of Provincial Highway No.9 Mountainous Section Improvement Project	5,899,128	2010 – 2017	Executive Yuan
Management of Tsengwen, Nanhwa and Wushantou Reservoirs to Stabilize Southern Water Supplies Project (DGH Portion)	50,000	2010 – 2015	Executive Yuan
Provincial Highway 2C Construction and Improvement Project	1,091,439	2008 – 2015	Ministry
Provincial Highway Bridge Construction to Accommodate River Management Planning	1,221,852	2009 – 2013	Ministry
Region-Based Road System Construction Project (Highway System)	4,890,889	2009 – 2014	Ministry
Follow Up to the South Link Highway of Provincial Highway No.9 Widening Project	371,690	2011 – 2017	Ministry
Third-Generation Motor Vehicle and Driver Information System Establishment Project	752,700	2012 – 2014	Ministry
Highway Public Transport Enhancement Project	3,131,112	2013 – 2016	Ministry
Highway Improvement Project	2,425,108	2013 – 2018	Ministry
Highway Maintenance Project	8,709,295	2013	Autonomous Management

Organizational Structure



Budget Enforcement

Revenues

Year	Enforcement Circumstances
2013	The year's revenues budget was NT$9,065,225,000. Actual receipts were NT$9,379,808,000 and uncollected receivables were NT$440,748,000 (4.86% of budget), amounting to NT$9,820,556,000. Implementation efficiency was 108.33%.
Previous FY	Previous fiscal receivables were NT$393,825,000. Actual receipts were NT$386,804,000 (98.22% of receivables). The remaining NT$7,021,000 was shifted to the following year for implementation (1.78% of budget).

Expenditures

Year	Enforcement Circumstances
2013	The year's expenditures budget was NT$43,977,829,000. Actual expenditures (not including suspense payments) were NT$40,466,647,000, accounts payable were NT$0, and the amount due to the treasury was NT$349,650,000 (0.80% of budget). Implementation efficiency including suspense payments was 93.10%.
Previous FY	Encumbrances were NT$4,492,074,000. Actual expenditures (not including suspense payments) were NT$3,373,565,000, accounts payable were NT$0, and write-offs were NT$125,505,000 (2.79% of encumbrances). Implementation efficiency including suspense payments was 85.47%.

Special Budget for the Economic Revitalization Policy to Expand Investment in Public Works

Year	Enforcement Circumstances
Previous FY	＊ 2011 encumbrances were NT$61,296,000. Actual expenditures (not including suspense payments) were NT$61,093,000, accounts payable were NT$0, and write-offs were NT$203,000 (0.33% of encumbrances). Implementation efficiency was 100.00%. ＊ 2010 encumbrances were NT$83,637,000. Actual expenditures (not including suspense payments) were NT$83,637,000, accounts payable were NT$0, and write-offs were NT$0 (0% of encumbrances). Implementation efficiency was 100.00%.

Post-Typhoon Morakot Reconstruction Special Budget

Year	Enforcement Circumstances
2013	2012 encumbrances were NT$5,691,135,000 (construction period 2009 – 2012). Actual expenditures (not including suspense payments) were NT$3,881,657, accounts payable were NT$0, and the amount due to the treasury was NT$75,164,000 (1.32% of encumbrances). Implementation efficiency including suspense payments was 72.47%.

Encumbrances

Expenditures

Year	Enforcement Circumstances
2013	Encumbrance applications were NT$3,161,532,000 (7.19% of total budget)
Previous FY	Encumbrance applications were NT$993,004,000 (22.11% of total budget)

Post-Typhoon Morakot Reconstruction Special Budget

Year	Enforcement Circumstances
2013	Encumbrance applications were NT$1,734,314,000 (30.47% of total budget)

Encumbrance applications from above transferred to 2014 totaled NT$5,888,850,000 (accounting for 10.84% of the budget and encumbrances).

Competition Performance

Awards Received by DGH Units in 2013

Evaluation (Verification) or Competition Name	Recipient	Place
4th Innovative Contributions in Road Safety Awards – Transportation Construction	Zhonghe Branch, First Maintenance Office	1st Place
2013 MOTC Golden Way Award for the Construction Excellence Category (Reconstruction to Road Foundation of Sections 122K + 015 ~ 122K + 141 and 122K + 400 ~ 122K + 940, Provincial Highway 21)	Second Maintenance Office	4th Place
2013 MOTC Golden Way Award in the Excellent Landscaping Category (45K + 373 ~ 52K, Provincial Highway 7A)	Guguan Branch, Second Maintenance Office	1st Place
2013 MOTC Golden Way Award in the Driver Information Category	Second Maintenance Office	1st Place
2012 Verification in Disaster Prevention and Rescue Mobilization from a Transportation Agency	Second Maintenance Office	1st Place
2013 Awards for Excellence in Promoting Worker Safety and Health, Council of Labor Affairs (Emei Bridge Reconstruction, 96 K + 010, Provincial Highway 3)	Second Maintenance Office	Nominated
2013 Awards for Excellence in Promoting Worker Safety and Health, Council of Labor Affairs (Baolai 2nd Bridge, 80 K + 800, Provincial Highway 20)	Third Maintenance Office	Selected
2013 MOTC Golden Way Award in the Road Maintenance Category for Provincial Highways and Stewarded County Highways	Third Maintenance Office	1st Place
2013 MOTC Golden Way Award in the Road Maintenance Category for Provincial Highways and Stewarded County Highways	Taitung Branch, Third Maintenance Office	1st Place
Follow Up to the West Coast Expressway Continuous Construction Project (Overseen by the Executive Yuan)	West Coast Expressway Northern Region Engineering Office	1st Class
East-West Expressway Construction Projects and Network Improvement Projects (Overseen by the Executive Yuan)	West Coast Expressway Northern Region Engineering Office	1st Class
Follow Up to the West Coast Expressway Continuous Construction Project (Overseen by the Executive Yuan)	West Coast Expressway Central Region Engineering Office	1st Class
East-West Expressway Construction Projects and Network Improvement Projects (Overseen by the Executive Yuan)	West Coast Expressway Southern Region Engineering Office	1st Class
Follow Up to the West Coast Expressway Continuous Construction Project (Overseen by the Executive Yuan)	West Coast Expressway Southern Region Engineering Office	1st Class
2013 Awards for Excellence in Promoting Worker Safety and Health, Council of Labor Affairs (Tender WH77-A Yancheng Interchange New Construction Project, Badongliao – Jiukuaicuo, 297K + 300 ～ 298K + 613, West Coast Expressway)	West Coast Expressway Southern Region Engineering Office	Nominated
East-West Expressway Construction Projects and Network Improvement Projects (Overseen by the Executive Yuan)	West Coast Expressway Southern Region Engineering Office	1st Class
2013 Awards for Excellence in Promoting Worker Safety and Health, Council of Labor Affairs (Tender E707-1 New Construction Project, Beimen Interchange to Nan 1 Township Road, Beimen – Yujing Section, East-West Expressway)	Kao-Nan Region Construction Office for the East-West Expressway	Selected
13th Public Construction Commission Golden Quality Awards (Tender WH50 New Construction Project, Hanbao – Xinsheng Section, 190K + 028 ～ 193K + 270, West Coast Expressway)	Kao-Nan Region Construction Office for the East-West Expressway	Outstanding Performance

Evaluation (Verification) or Competition Name	Recipient	Place
2012 Transportation Construction Project Environmental Impact Assessment On-Site Inspection Plan	Suhua Improvement Engineering Office	1st Place
2012 Executive Yuan Improvement Program for Traffic Order and Safety, Motor Vehicle Supervision	Taipei Motor Vehicle Office	1st Place
2012 Fuel Tax Collection Performance by Motor Vehicle Supervisory Units	Taipei Motor Vehicle Office	Superior
2012 Executive Yuan Improvement Program for Traffic Order and Safety, Team Category Group 2	Zhongli Motor Vehicle Station, Taoyuan Motor Vehicle Station	1st Place
2012 Executive Yuan Improvement Program for Traffic Order and Safety, Dump Truck Safety Management Evaluations	Miaoli Motor Vehicle Station	1st Place
2012 Motor Vehicle Freight Traffic Survey	Zhongli Motor Vehicle Station	1st Place
2012 Public Servant Book Review Composition Contest – Group Category, DGH and Subordinate Agencies (One 1st Class, One 2nd Class)	Hsinchu Motor Vehicle Office	1st Place
2012 Fuel Tax Collection Performance by Motor Vehicle Supervisory Units	Hsinchu Motor Vehicle Office	Superior
5th Executive Yuan, Government Service Quality Awards	Changhua Motor Vehicle Station	Outstanding Performance
2012 Executive Yuan Improvement Program for Traffic Order and Safety	Changhua Motor Vehicle Station	1st Place
2012 Fuel Tax Collection Performance by Motor Vehicle Supervisory Units	Taichung Motor Vehicle Office	Superior
11th Golden Wingspan Award	Kaohsiung Motor Vehicle Office	First Rate
5th Innovative Contributions in Road Safety Awards – Self-Administered Health Examinations for Senior Drivers	Taipei City Motor Vehicle Office	2nd Place
2012 Fuel Tax Collection Performance by Motor Vehicle Supervisory Units	Kaohsiung City Motor Vehicle Office	1st Place

Research and Development

2013 Autonomous Research and Development Achievements

Research Items	Research Agencies	Research Personnel
Feasibility of Integrating Tire Pressure Monitoring Systems Into the Safety Management of Large Vehicles	Central Region Training Center, Training Institute	Liu Ying-biao, Zhang Sen-long, Ye Qi-zhuan, Jian Pei-qing, Tang Yao-xin, Lin Shi-yan, Lai Wen-bin, Chen Zong-xin, Ye Chang-heng, Dai Liang-han
Research for Lessons & Demonstration of Eco-driving	Southern Region Training Center, Training Institute	Chen Sin-bin, Fan Shun-fa, Tsai Wen-bi, Huang Hsin-shiang
Evaluation of the Functionality (Effectiveness) of Driver's Education Classes Before Scooter Road Tests	Banqiao Motor Vehicle Station, Taipei Motor Vehicle Office	Lai Ming-yi, Pan Sen-rong, Xu Bi-ru, Gao Gui-mei, Yu Zheng-yuan
Online Registration of Personal Property Secured Transactions	Taichung Motor Vehicle Office	Gao Dong-bao, Chen Pin-ling, Chen Qing-zheng, Lin Yan-zhi
Digital Retrieval System for Management of Suspended Plates	Yunlin Motor Vehicle Station, Kaohsiung Motor Vehicle Office	Wu Meng-feng, Zhang Zhi-ming, Jhuang Jing-hui, Cai Ben-wang
Plate-Free Vehicles and License Plate Image Capture Solutions on Outlying Island	Taitung Motor Vehicle Station, Kaohsiung Motor Vehicle Office	Li Qing-zhang, Zhou Zhi-chang, Zhu Yue-xiu, Xie You-zhi, Yang Zhi-xian
Evaluation of Pilot Program for Conducting License Road Exams on Public Roads – Case Study of Kaohsiung Motor Vehicle Office	Kaohsiung City Motor Vehicle Office	Chen Tian-ci, Li Zuo-hong, Chen Fu, Li Qi-xian
Information Security in Relation to Cloud Computing and Virtualization	Kaohsiung City Motor Vehicle Office	He Ming-yong, Chen Tang-sheng, Lin Yi-xuan

Major Events

1 Month

1	Starting from this day, regular registrations were eliminated on personal-use vehicles, such as general use automobiles, scooters, and trucks. School buses, kindergarten vans, and ambulances were excluded.
4	Completion of Tender WH53-1 new construction, Gongguan drainage – Xibin Bridge, 210K + 522 ～ 212K + 700, West Coast Expressway. Linkage to the Mailiao Industrial Park made this an important transit for routing heavy vehicles away from nearby urban roads.
8	Completion of Tender WH56-B main line new construction, Yunyi Interchange – Haifeng Bridge, 220K + 906 ~ 225K + 340, West Coast Expressway, raised service quality.
15	On this day, Fugue Bridge, located between Shizhuo, Jhuci Township, Chiayi County and Shizi Village, Alishan Township, opened, demonstrating that post-Typhoon Morakot reconstruction on Provincial Highway 18 was nearing completion. The NT$280 million-large span, steel girder bridge features a platform and pedestal well foundation design, with a half-through form and steel truss bridge.
23	A new interchange located at the 39K + 700 marker of the West Coast Expressway opened before the Lunar New Year holiday. Improved service raised speed on the road network and reduced average travel time.
28	The DGH issued a book outlining procedures for safe management of personal information. Effective mechanisms and a new organizational structure distributed work in a manner that ensured proper management of personal information by all members of the DGH, in order to ensure protection of rights.
	Information on Lunar New Year holiday activities and related traffic measures was compiled and updated in a special Lunar New Year section of the 2013 Transportation Management Calendar. Before the start of New Year's, all activities listed in the calendar were added online.
31	Full opening of Expressway 65 took place at 12 pm following completion of Tender 3-1 new construction on Zhongzheng Road, Banqiao – Dahan River section of Special Highway 2 (8K + 177 ～ 10K + 060) on January 22.
	of a road linking to Sanwan Village 21 Lin, on the bottom left side of the Sanwan Outer Ring Road overpass, at 96K + 950, Provincial Highway 3, Miaoli County. Resistance by local residents initially prevented construction from proceeding. Following negotiations, a consensus was reached to widen the turning area and add an intercepting ditch.

2 Month

5	After completion of Tender CI02 south section new construction, on an east coast access road of the Port of Keelung (Provincial Highway 62A), the road opened. This dramatically reduced time and distance to travel between Xiaodong Road in Keelung City, Expressway 62 (Wanrui Expressway), and Provincial Highway 2D.
1.22~2.5	To publicize Lunar New Year holiday traffic management reports, the DGH invited the National Freeway Bureau, Taiwan Railways Administration, the Bureau of High Speed Rail, and subsidiary agencies to join in forming local media platforms. From January 22 to February 5, the agencies held a total of 16 joint Lunar New Year traffic management press conferences.
8	Inspection and announcement of road sections prohibited for buses or requiring extra caution was completed on January 31. Organization of provincial highway road sections showed 22 sections where buses are prohibited and 23 sections requiring extra caution. On county and township roads, there were 609 sections where buses are prohibited and 234 sections requiring extra caution.

9~17	The transportation management project for the 2013 Lunar New Year period ended with average daily ridership on inter-regional buses reaching 300,000. In cooperation with police agencies, the DGH conducted 1,587 bus roadside inspections and 3,033 tour bus roadside inspections at freeway toll stations and scenic areas, etc.
2.19~5.31	With the completion of the Spring Festival holiday period, traffic restrictions were implemented on a disaster-hit section of Provincial Highway 9 at the 115.8 K marker. Two-way, single-lane traffic was managed 24 hours a day using traffic lights.
10~28	Restrictions on visitor volume, promotion of public transit, and special shuttle buses assisted with the management of more than 40,000 visitors during the 2013 Wuling Farm Cherry Blossom Festival. Buses filled to more than 90% average cap

1	In conjunction with government paper reduction efforts, the DGH implemented a paper-free meeting room policy following examination by the Secretariat of similar policies used by the MOTC and Executive Yuan. After three months implementation and evaluation, the program proved to be effective and was officially launched in April.
11	Full launch of the motor vehicle third-generation computer testing system. Motor vehicle offices and stations nationwide completed a unified database for computerized tests that replaced traditional paper tests of the past.
3.16~4.7	Weekend and Tomb Sweeping Festival restrictions on small automobiles, public transit transfers, and distribution of ticketing booths prevented congestion on highways and improved the travel experience for visitors to the Alishan flower festival.

1	Commencement of the Follow Up to the South Link Highway of Provincial Highway No.9 Widening Project (412K + 350 ~ 415K + 500).
3	At 10 am, the downstream side of the Donggang Bridge on Provincial Highway 17 opened.
6	Completion of Tender WH49 new construction on the Fuxing – Fubao section of the West Coast Expressway (182K + 720 – 184K + 820). An interchange improved accessibility of surrounding areas and reduced traffic costs.
15	Formal launch of a new management system for the director general's mailbox provided functions for checking progress of inquiries made by the general public, management of DGH case tracking, and issuing of simple replies.
19	Completion of Tender WH49-1 new construction to the Fubao – Hsianian section of the West Coast Expressway (184K + 820 ～ 187K + 910).

2	Completion of Tender WH56-A, new main line construction to the Yunyi Interchange – Haifeng Bridge section of the West Coast Expressway (216K + 360 ~ 220K + 906).
6	Urgent rebuilding of Shuangyuan Bridge, 248K + 100 ~ 251K + 000, Provincial Highway 17: Completion of the freeway ramp, bicycle stairway, and entryway decorative design.
6	Revised plans for the East-West Expressway Construction Projects and Network Improvement Projects received approval of the Council for Economic Planning and Development.

7	MOTC officials gathered with experts from industry, government, and academia for a 2013 seminar on highway flood prevention. Transportation Minister Yeh Kuang-Shih praised the DGH's flood prevention efforts over the previous two years and gave recommendations for disaster prevention mechanisms ahead of the 2013 flood season. Yeh expressed a desire for improvements that could ensure greater safety in Taiwan.
14	Official opening of Minsheng Bridge, on Provincial Highway 21 in Namasia District.
25	A delegation including Transportation Minister Yeh Kuang-Shih, DGH Director General Wu Men-Feng, and other transportation officials went to Alishan Township, Chiayi County to conduct an inspection of disaster repair work on Provincial Highway 18.
31	A regulatory amendment announced by the MOTC in June and effective for the year dropped second inspection fees for small, personal-use automobiles 10 years old or above by a third, from NT$450 to NT$300.

6 Month

5	DGH Fourth Maintenance Office deputy engineer and deputy chief Fu Li-xiang, Suhua Improvement Engineering Office deputy chief Huang Feng-gang, Maintenance Division deputy engineer Wu Ya-ru, and Information Management Office deputy engineer Zheng Jie-wen were named 2013 model civil servants by the MOTC. The ministry announced that a ceremony to honor the four would be held on June 27.
6	Completion of work to Tender E707-3 new construction between Xuejia Interchange and National Freeway 1, Beimen – Yujing route, 8K + 600 ~ 12K + 950.
18	Upon retirement of DGH Deputy Director General Chang Jen-te, Construction and Design Division chief Hsia Ming-sheng took over as the new deputy director general.
19	Changhua Motor Vehicles Station, under the Taichung Motor Vehicles Office, was honored in the front line service agency category of the 5th Government Service Quality Awards. This is the highest honor for service by a government agency.
28	Following approval, operations began on a new Kuo-Kuang Motor Transport bus route transiting three freeways: Yuanshan Bus Station – Taipei Interchange – National Freeway 1 – Nangang Bus Station – National Freeway 3 – National Freeway 5 – Toucheng Interchange – Toucheng Township, Yilan County.
28	Following the cancellation of regular scooter registration renewals from 2013, scooter fuel taxes began to be levied annually each July in line with levies on automobiles.
28	Following recommendation by the DGH, Kuo Zheng-hong, a member of the Taipei Motor Vehicles Office, received an MOTC model of clean governance award.

7 Month

1	From this day, regular renewal of scooter and automobile licenses ended.
1	Third Maintenance Office chief Deng Wen-guang was promoted to head the Construction and Design Division, after former division chief Hsia Ming-sheng was promoted to DGH deputy director general. Yang Zong-yue, head of the West Coast Expressway Southern Region Temporary Engineering Office, replaced Deng.
5	In accordance with implementation this month of an amendment to Article 67 of the Highway Act, the MOTC designated the DGH to handle traffic accident appraisal and review.

5	From this day, the DGH took authority over seven major transportation enterprises, including highway automobile transportation enterprises. This followed an announcement by the president on July 7, 2013, of an amendment to Article 37 of the Highway Act along with related regulatory changes that shifted the aforementioned authority back to the central government.
5	Completion of work to Tender E707-3 new construction between Xuejia Interchange and National Freeway 1, Beimen – Yujing route, 8K + 600 ~ 12K + 950.
10	Start of Tunnel C2 new construction, Ancu – Caopu section, South Link Highway, Provincial Highway 9 (6K + 300 ~ 11K + 006).
16	Fourth Maintenance Office chief Zhang Yun-hong was promoted to deputy chief engineer following the retirement of former Deputy Chief Engineer Chen Chao-xin. Replacing Zhang was Liao Wu-zhang, who was promoted from deputy office chief.
16	Deputy director of the Materials Testing Laboratory, DGH, Huang San-zhe, was promoted to head the laboratory following the retirement of former Director Chen Shi-yi.
16	Kaohsiung Motor Vehicles Office chief Wang Zai-ju was promoted to head the Motor Vehicles Division following the promotion of former Division chief Xie Jie-tian to MOTC counselor. Former Taichung Motor Vehicles Office chief Chen Cong-qian replaced Wang, former Hsinchu Motor Vehicles Office chief Ke Wu replaced Chen, Taipei Motor Vehicles Office chief Zhang Chao-yang replaced Ke, and the director of the Secretariat, Chen Yu-hao, replaced Zhang.
16	The deputy chief of the Training Institute, Liu Ying-biao, was promoted to head the institute following the retirement of former chief Shi Jin-liang. Chen Xin-bin, the head of the institute's engineering office and director of the Southern Training Center, replaced Liu.
16	Former Motor Vehicles Division deputy chief Yuan Guo-zhi was promoted to director of the Secretariat.
29	A section chief in the MOTC Department of Accounting, Chen Rong-gui, was appointed director of the DGH Accounting Office, after former Director Chen Hui-ling was transferred to the department to serve as a senior specialist.
30	Eight members of the DGH were honored for outstanding performance as public servants: Fifth Maintenance Office chief Cai Zong-cheng, Construction and Design Division section chief Zhu Jian-zhong, Kaohsiung Motor Vehicle Office section assistant Chen Qiu-dong, Planning Division section chief Chen Wen-qi, Second Maintenance Office branch director Lu Yong-ting, Taipei City Motor Vehicles Office technician Shen Zong-shu, West Coast Expressway Central Region Engineering Office branch director Wu Yao-shen, and West Coast Expressway Southern Region Temporary Engineering Office section chief Wen Hong-fa.

2	The Research, Development, and Evaluation Commission honored Ms. Zhuang Mei-hua of the Madou Motor Vehicles Station, Chiayi Motor Vehicle Office during the 11th Outstanding Archivists Awards. The DGH had nominated Ms. Zhuang as part of its efforts to improve archives management at subsidiary agencies.
5	Lu Bi-zong, head of the New Taipei City Traffic Adjudication Office, was appointed head of the Taipei City Motor Vehicles Office following the retirement of former office chief Fan Su-qing.
5	At 12 pm, Minzu Bridge, on Provincial Highway 21 in Namasia District, opened following the completion of new construction.
6	At 11 am, Baolai 2nd Bridge, on Provincial Highway 20 in Liouguei, opened following the completion of new construction.

	16	Commencement of an improvement project (Tender B1) to the 417K + 715 ~ 426 K + 000 section of Provincial Highway 9.
	20	Commencement of an improvement project (Tender A2-2) to the 409K + 900 ~ 412K + 350 section of Provincial Highway 9.
	21	During the approach of Typhoon Trami, Transportation Minister Yeh Kuang-shih visited the DGH to inspect flood preparations. Yeh praised staff for 1,033 days of zero disaster-related deaths or injuries on highways and encouraged everyone to continue their hard work.
9 Month	10	Final analysis of the differences between the original and subsequent environmental impact for the Follow Up to the South Link Highway of Provincial Highway No.9 Widening Project was approved by the Environmental Protection Administration and filed for future reference.
	11	The DGH held an event on transparent administrative justice and clean governance, hosted by Administrative Deputy Minister Fan. Joining a seminar and signing ceremony to pledge transparent, clean governance were Agency Against Corruption Director General Chu Kun-mao and the chief prosecutors of Yilan and Hualien.
	12	The opening of a grade-separated intersection at Changhua Coastal Industrial Park saves transportation time and cost for people using the industrial park.
	17	The DGH invited navigation system operators to conduct tests and gather images of the section of Expressway 84 between Xuejia Interchange and National Freeway 1 prior to official opening.
	18	The DGH recommended 20 compositions to take part in "2013 MOTC Civil Servants' Writing Contest for Selective Books" and the MOTC honored four – Ren Ming-kun, Hsinchu Motor Vehicle Office (Superior), Xiao Min-hui, Taipei Motor Vehicle Office (1st Class), Wang Rou-yun, Wu Hui-zhen, Hsinchu Motor Vehicle Office (2nd Class).
	20	Completion of an improvement project to the 407K + 264 ~ 408K + 140 section of Provincial Highway 9. Widening the section of road to four lanes made passage easier for vehicles.
	26	△The Chiayi Motor Vehicle Office was awarded third place recognition for excellent contributions to a 2013 "clean up Taiwan" event conducted by the MOTC.
	27	Completion of Tender C821 construction of the Provincial Highway 17 – Road 2-11 Guanmiao section of the east-west expressway network. Once the route opens it will form a comprehensive transportation network by linking Provincial Highway 17 with Provincial Highway 1 and National Freeways 1 and 3.
10 Month	3	Urgent rebuilding of Shuangyuan Bridge, Provincial Highway 17: The bridge opened following completion of the freeway ramp, bicycle stairway, and entryway decorative design. It made access to Linyuan Industrial Park and Provincial Highway 21 more convenient for small automobiles and provided a new option for local cyclists.
	3	DGH Fourth Maintenance Office deputy engineer and Nanao construction branch deputy chief Fu Li-xiang was named 2013 model civil servants by the Executive Yuan.
	5	A ceremony held in the morning marked the opening of the Wutai Guchuan Bridge, located at the border of Sandimen and Wutai townships, Pingtung County. The bridge opened at 6 in the evening.
	16	The DGH won the first place for the team award in "2013 MOTC Civil Servants' Writing Contest for Selective Books." It was to be honored during a departmental report session on November 7.

20	The opening of a route today between Siaying Interchange and Xuejia Interchange on Expressway 84 connected National Freeway 1 and Provincial Highway 19. This will not only ease traffic on the National Sun Yat-Sen Freeway but also build a more comprehensive network of freeways and expressways. Expansion of freeway service will promote balanced local development.
21	The opening of the Ciaotou Interchange to Huzinei Interchange section of Expressway 61. Improvement to frequent congestion has boosted economic development in surrounding Yunlin areas such as Mailiao, Taisi, and Dongshi.
22	Commencement of work on main line overpass construction, Daan – Dajia section, West Coast Expressway (136K + 855 ~ 144K + 080).
30	The MOTC approved in principal permits for Taipei Bus and Metropolitan Transport Corporation to operate a route between Xindian District, New Taipei City and Suao Township, Yilan County via National Freeway 5.
30	Automobile and container freight warning and management mechanisms recommended by the Kaohsiung City Motor Vehicle Office received 1st class recognition in the management category of an MOTC awards program for innovative suggestions. Transportation Minister Yeh Kuang-shih praised the office during an inter-departmental report meeting.

7	The Kaohsiung City Motor Vehicle Office completed 2013 safety protection exercises. The unique, creative nature of each activity led to widespread praise from all participants.
9	Time restricted access to the Tongfu to Tataka section of the Central Cross-Island Highway, Provincial Highway 21 began for Type A buses. The route had closed to Type A buses following Typhoon Morakot, but could be reopened following post-disaster repairs and improvements.
18	The opening of the Fuxing – Hanbao section of the West Coast Expressway (Tender WH49) satisfied transportation needs between neighboring cities and townships, thereby boosting development in the southwest coastal region of Changhua.
18	At a public hearing held at the NTU Alumni Association, the DGH explained results of its pilot program for safe driving instruction prior to the awarding of a scooter license. Earlier in the year, the MOTC approved the two-hour program, which began from April 1 at seven motor vehicles offices and stations. At a review meeting on May 28, the DGH decided to extend the program to an additional two locations, and then extended it to nine more offices and stations on September 1, bringing the total to 18. The lectures were also cut to one-and-a-half hours. Data showed that between April and September, there was a 26.85% drop in accidents and a 31.67% drop in traffic violations among new drivers who attended the lectures.
28	The opening of a new eastward freeway ramp at Dounan Interchange, Expressway 78 provided residents of Dapi and Dounan townships, Yunlin County and Dalin Township, Chiayi County with a convenient transportation link to Douliou, Gukeng and National Freeway 3.
11.30~12.8	The DGH's SafeTaiwan@WikiGIS platform was featured in a display at Exhibition Hall 1, Taipei World Trade Center as part of an exhibition featuring winners in the 2013 IT month top 100 innovative product awards.
30	The transit bus No. 7 route formally opened after the Highway Public Transportation Development Project subsidized the purchase of three electric buses for Hsinchu County in 2012. The route, between Jhubei City Hall and the high-speed rail's Hsinchu Station, was the first in Hsinchu to feature petrol- and emissions-free buses that were also low noise.

12 Month

13	New double culverts on the two side lanes from 271 K + 140 ~ 271 K + 153, Expressway 61 opened to traffic at noon.
15	The full Guanmiao section of Expressway 86 opened. It offers comprehensive road connections by linking Provincial Highway 17 with Provincial Highway 1 and National Freeways 1 and 3.
18	The DGH held a book launch for release of a special publication that paints a portrait of Provincial Highway 1 from past to present. Promotion continued with a related video exhibition from December 19 – 25.
19	At the 2013 MOTC Service Quality Awards the DGH was honored in the service planning agency category for its highway disaster prevention warning mechanisms. Fengyuan Motor Vehicles Station, Taichung Motor Vehicles Offices was also honored in the frontline service agency category.
19	Following the completion of Tender CI01 on November 18, new roads that are part of the Port of Keelung east coast access road network opened. The new route lowered the traffic burden on neighboring cities and townships and congestion in downtown Keelung, thereby improving the overall environment of Keelung and raising the competitiveness of the Port of Keelung and the city.
22	Follow Up to the West Coast Expressway Continuous Construction Project: Commencement of work on Tender WH10-A main line new construction on the West Coast Expressway (54 K + 320 ~ 60 K + 312).
23	Announcement of results for a DGH contest to select 10 exciting bus routes. Choosing from among 18 candidates in an online poll conducted between November 22 and December 21, netizens named route 108 Taipei Bus as their favorite. Toward the end of January 2014, the DGH followed up the contest with special discounts for the 10 routes.
27	Minor modifications conducted to the Intercity E-Bus System based on user feedback gathered during a three-month trial beginning from September 27, 2013. Across Taiwan, 51 interregional bus operators operating 792 bus routes took part in the trial. Official launch was scheduled for January 1, 2014.
27	The deputy division chief of the Construction and Design Division, Lan Wei-gong, took over as head of the West Coast Expressway Southern Region Temporary Engineering Office. The position had temporarily been filled by the head of the Kao-Nan Region Construction Office for the East-West Expressway, Wu Wei.
27	The head of the West Coast Expressway Southern Region Temporary Engineering Office, Lan Wei-gong, took over as acting head of the Kao-Nan Region Construction Office for the East-West Expressway. The original head of the Kao-Nan Office, Wu Wei, was transferred to the DGH's Chief Engineer office.
29	The opening of the Hanbao – Wanggong section on the West Coast Expressway linked major industrial zones on the west coast and eased congestion on Provincial Highway 17 by reducing the volume of heavy vehicles and weekend traffic.

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65, Dongyuan St., Wanhua District, Taipei 10863, Taiwan, R.O.C.
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