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“THANKS TEAM!” SAYS CEO

Tropical Storm Gustav visited our shores between August 28 and 29. Given the mandate of the Agency, we were once again called up to respond in order to make the lives of many Jamaicans more comfortable and to facilitate the continuation of the productive capacities of our country. The team once again rose to the occasion! *Continued on page 3*



Team members tracking Tropical Storm Gustav in the Emergency Operation Centre that was operationalised at the NWA's Corporate Office on August 28, 2008. The Centre was manned by NWA team members for four days, during which time over 350 reports of affected roads, bridges and drains among other structures, were recorded. In picture are, from right: Shane McAnuff - Network and Service Administrator; Stephen A. Shaw - Manager, Communication and Customer Services; Wendelline Wilson, Administrative Assitant - IT Department; Connie Duncan, Youth Service worker - IT Department; and Stacy-Ann Austin - GIS Officer.

Tropical Storm Gustav Highlights



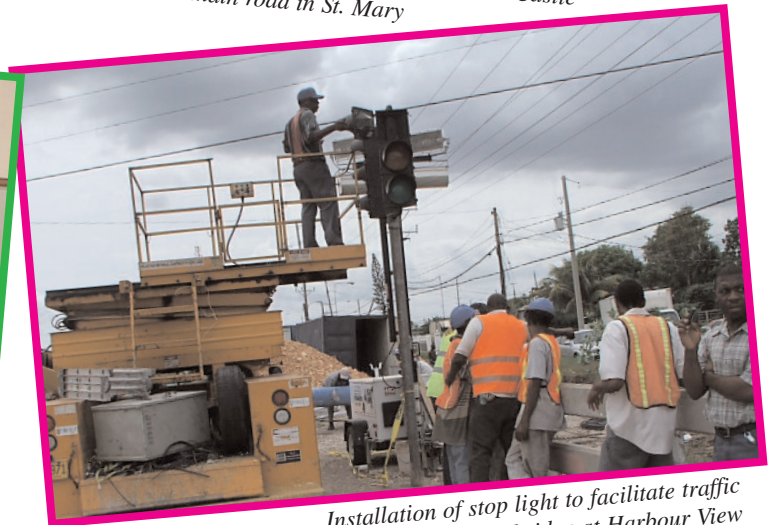
Border-Cuffy Gully, St. Mary



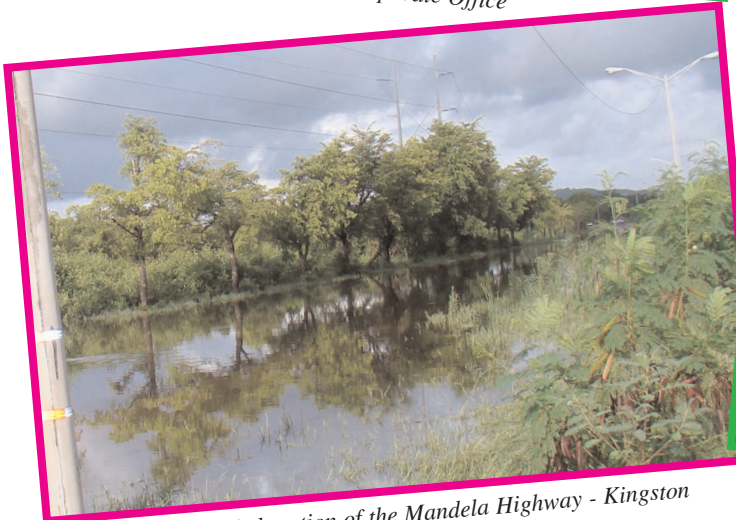
Killonkolly (PC road) off the Highgate to Windsor Castle main road in St. Mary



Emergency Operations Center - Corporate Office



Installation of stop light to facilitate traffic across the single lane bridge at Harbour View



A flooded section of the Mandela Highway - Kingston



Gordon Town Road - St. Andrew

Thanks team...

Continued from page 1

The modus operandi of the Agency in responding to the threat of a natural disaster, such as Gustav is widely known and accepted. Our Emergency Operations Centre was opened, equipment was pre-positioned and team members put on high alert to respond to emergency situations. These activities were well executed and facilitated the timely re-opening of more than 70% of the nearly 400 affected roads within a week.

This feat could not have been achieved without you my team members. To this end, I wish to thank the volunteers who came out during and after the storm to man the Operations Centre, even at the risk of personal injury. Special mention must go out to Miss Wendellene Wilson who spent more than 24 hours in the Centre, manning the facility before, during and after the storm.

Commendations also to members of the Office Management team who ensured that critical supplies were available during and after the event. The parish and regional teams must also be thanked, as you worked tirelessly to have roadways re-opened in order to facilitate the delivery of critical services.

The public was kept informed and reassured through our Communication and Customer Services Department. Information was made readily available so that members of the public were able to plan and execute their business in minimal discomfort.

I also want to say a big thank you to the team members who worked night and day to get traffic moving between Bull Bay and Harbour View. The washing away of a span of the Dry River Bridge couples with the subsequent difficulties faced by the thousands of persons who had to go about their business, may have been the single most challenging event associated with the storm. The team rose to the occasion and persons were able to move within five days of the event. In the process, lifting over 30 tonnes of steel and making over 200 connections to make the Bailey Bridge, which now link communities beyond Bull Bay to

the Corporate Area.

We should all remember that the hurricane season is still with us, so there may be need for us to respond once again. I ask that you continue to be supportive, professional and courageous, as we work for the benefit of our country. The many calls and commendations that we have received privately and publicly is testimony of the appreciation that many Jamaicans have for

our efforts during this trying period.

It was Paul J. Meyer who said that "productivity is never an accident. It is always the result of a commitment to excellence, intelligent planning, and focused effort." Your efforts are truly recognised. Again, on behalf of the senior management team, I want to thank you all for the support.

TEAM SPIRIT INDEED!



The Agency was not without its own 'mis-haps' due to Tropical Storm Gustav. One of our own, Shane McAnuff had to be rescued by fellow team members after his car got stuck in the flood waters.

Top photo from left: Wendellene Wilson - IT Department; Josiene Nelson - Finance Department and Wade Brown - Manager, IT Department.

Bottom photo from left: Cornwall Williams, Wendellene Wilson, Shane McAnuff - IT Department; Josiene Nelson - Finance Department and (at back) Dionne Newman - Record Services Department.

THE EFFECTS OF TROPICAL STORM GUSTAV

Tropical Storm Gustav - NWA's Response

Thursday, August 28, 2008 marked another eventful day for Jamaica and indeed for the National Works Agency. The island was hit by Tropical Storm Gustav whose centre moved along Jamaica's south coast at maximum wind speed of 110 kilometres per hour. This resulted in fallen trees and utility poles island-wide.

As well, heavy rains which preceded the passage of Gustav (August 27), and which also accompanied the storm on August 28 continuing through to August 29, with increasing intensity in some parishes, resulted in damage to roads and road infrastructure in every parish. Most parishes were hard hit by these flood rains. The Meteorological (MET) Office of Jamaica through its Rainfall Report indicated that rainfall measurements in a number of areas had exceeded their 30-year average. In Kingston and St. Andrew, Lawrence Tavern exceeded its 30-year rainfall average by 232%; Langley by 444.3% and at the Norman Manley International Airport it was exceeded by 417.3%. In St. Catherine, the rainfall data collected indicated that in Swansea the 30 year average was exceeded by 306.7% and Worthy Park, 233.6%. In Trelawny, Gayle's Valley exceeded by 344.5% and Hampden 261.9%. In St. Elizabeth, the 30 year average in Mountainside was exceeded by 226.3%. In St. Mary, the district of Orange River showed that the average was exceeded by 436.2%; in Richmond it was 336.3% and in Boscobel 256.6%. Mammee Ridge in St. Ann showed that the 30 year average was exceeded by 262.4%, while Bybrook, Portland it was 211.1%. In St. Thomas, rainfall data collected in Duckenfield showed that the average was exceeded by 227.7%. The Sangster's International Airport in St. James recorded 161.1% above the average. In Manchester, Marshalls Pen showed 323.3% above the 30 year average and in Clarendon, Mocho had 153.7% above the average, while Beckford Kraal had 180.7%.

Damage Recorded by the NWA

A total of three hundred and sixty-eight (368) road sections were affected by the passage of the storm and attendant rains. This, according to reports received and recorded through the NWA's Emergency Response Centre (EOC), which operated from Thursday, August 28, 2008 through to Sunday, August 31, 2008. The roads affected included sections along the main road network, as well as parochial roads. Records of damage included fallen trees and utility poles; land slippages/landslides; washed down silt/silt deposits; breakaways of roads and protective structures; extensive scouring of road surfaces; and severe inundation. These occurrences of damage had rendered many of the roadways impassable.

NWA's Response

The NWA's response to the effects of Tropical Storm Gustav and attendant rains was remarkable. By September 2, 2008, the NWA had responded to a total of two hundred and ninety-eight (298) or eighty per cent (80%) of the reported cases of damage, re-opening blocked roadways to at least single-lane access. At September 5, 2008, six (6) days after the passage of Tropical Storm Gustav, only sixty-two (62) of the affected roads reported, remained blocked. These were spread across seven (7) parishes: St. Andrew; St. Catherine, St. Thomas, St. Mary; Portland; Clarendon



The Flat Bridge, St. Catherine after the passage of Tropical Storm Gustav

and St. James, and included twenty (20) main roads and forty-two (42) Parochial roads.

By the end of September 2008, all main roads in St. Andrew for which the Agency had received reports of damage resulting from Gustav, were reopened to vehicular access. Four (4) Parish Council Roads, however remained closed. These were the Mammee River road which sustained a massive breakaway that rendered the road impassable; the Bloxborough - Bito; Lime Tree - Tower Hill; and the Flamstead roads.

In St. Catherine all roads which had reported cases of damage were reopened with the exception of the Bog Walk Gorge which had sustained extensive damage to the road surface and the approach to the Flat Bridge. Following extensive work, the roadway was reopened on October 5. In St. Thomas two (2) roads are still closed: the Mt. Sinai - Loop Road which was abandoned as a result of a breaking away of the Murray Gully; and the Belvedere to Hall Head main road which was made impassable by severe inundation and scouring caused by the Negro River reclaiming the course used for vehicular traffic. In St. Mary, three (3) road sections remained closed. These are the Border to Cuffy Gully main road which was rendered impassable by a severe breakaway at Jones Rock (cost of repairs estimated at \$45-million); the Chovey to Claremont main road, caused by the washing away of the Westmoreland Bridge; and the Bernard to St. Catherine Border which had sustained a breakaway along that corridor. In Portland, the Cascade main road was still impassable. Three retaining walls had broken away along this roadway. The cost to repair these breakaways was estimated at forty to sixty million dollars. In Clarendon the Nine Turn - Riches main road remained impassable as a result of extensive scouring. Approximately 100 metres of this roadway had sunken to a depth of approximately 1.5 metres. In St. James one (1) road section remained closed. This was the Vaughn's Field - Niagra Main road which had sustained a breakaway in the vicinity of Jackson Road. Twelve roadways remain impassable, resulting from the storm.

It is the hope of the National Works Agency that it will be able to obtain the facilities necessary to restore full access to those roads which still remained impassable. This it hopes to achieve in the shortest possible time, given the nature of damage along those roadways and the resources needed to address them.

THE WESTERN REGION

The western parishes of Hanover, Westmoreland, St. James, and Trelawny were spared the full wrath of the storm. However these parishes suffered some damage primarily in the form of landslips, breakaways, fallen trees, downed power lines, blocked drains, inundation of roadways and scoured road sections.



Kew-Jericho-Mosquito Cove, Hanover after the passage of Tropical Storm Gustav

Following the passage of the storm the technical team toured the control sections across the parishes in the region. It was discovered that at least seventy roads were affected by the passage of the storm. The NWA was able to meet its objective of having these roadways reopened within the first week of the passage of the storm. As a result, it was 'business as usual' for motorist travelling across the region following the passage of the storm.

The NWA has received much commendation from the public for the work that was done to have the roadways reopened. There have been numerous calls from residents who were impressed with the speedy reopening of many roadways across the region. The Agency has also received commendation for the timely dissemination of information regarding the status of affected roadways. This information enabled motorists to plan their routes carefully, resulting in minimal delays going about their business.

Estimates for repair work have been prepared and submitted for approval. Work to rehabilitate these damaged roadways is expected to commence, as soon as the funding has been identified.

CENTRAL REGION

The parishes of Clarendon, St Elizabeth and to a lesser extent, Manchester was impacted with landslides, inundation, break-

aways, and destruction of trees and scouring on some roadways, resulting from Tropical Storm Gustav.

Inundation impacted several roads in St Elizabeth. The road in Maggoty had to be closed in the vicinity of the old PWD office building along the Tombstone to Vauxhall road section. There were other areas such as Siloah and Williamsfield along the Tombstone to Union roadway that were inundated. Small vehicles were at risk of flooding days after the storm in the vicinity of New Holland and Middle Quarters, along the Tombstone to Luana road. Sections of Park to Mountainside and Park to Williamsfield were also inundated for nearly a week.

Heavy scouring, fallen trees and large deposits of silt and debris also contributed to the retardation of the movement of traffic in some areas of the bread basket parish. This was evident at the Old Lacovia Bridge, Rocky Hill and Black River. Fallen trees were a hindrance in areas such as Quickstep, New Market, Middle Quarters, Sandy Ground, Luana, Baptist, Brompton and Wilton. These were cleared quickly.

NORTH EAST REGION

Tropical Storm Gustav, the first system to wreak major havoc in Jamaica since the start of the 2008 hurricane season, will be on the lips and minds of many Jamaicans for years to come. As it moved northward, this system was originally thought not to be a threat to Jamaica. However, in the wee hours of August 28, 2008, it started a slow trek west-southwestward towards Jamaica, hitting the island from the eastern end, later that day.

The North Eastern parishes of St. Thomas, Portland and St. Mary were hit hard with over eighty-eight roads across these three parishes reportedly affected. St. Ann suffered little damage with five (5) roads affected. Roads though were just a fraction of the damage as the storm took with it, the Westmoreland bridge in St. Mary, marooned the community of Cascade in Portland, closed the Yallahs to Llandewey main road in St. Thomas and flooded



Agualta Vale - Broadgate, St. Mary after the passage of Tropical Storm Gustav

homes as rivers 'broke' their banks.

Frantic phone calls were made to the National Works Agency's Emergency Center as persons tried to bring attention to the state of the roads, bridges, drains and gullies in their area. The NWA team in the region responded, heroically, and was able to clear twenty percent (20%) of the affected roads by the time Gustav's outer bands left the island on August 31.

St. Thomas

St. Thomas was one of the hardest hit parishes as its many waterways flooded roads and the already distressed roadways were victims of landslips, fallen trees, breakaways, debris and scouring. It was the first parish that Gustav visited and as the storm was in no hurry to leave, much damage occurred. Up until September 22, 2008, almost a month after the passage of the tropical storm, the Belvedere to Hall Head main road was still impassable. This was not entirely due to the impact of Gustav, as rains associated with Tropical Storm Hannah, Hurricane Ike and other systems, continually flooded the passage and impeded works.

St. Mary

St. Mary, home to the now collapsed Westmoreland Bridge, also received major structural damage from the storm. Landslips, breakaways, silt, debris, scouring and flooding accounted for most of the damage. To date, the need for the construction of retaining walls has left the Border to Cuffy Gully and the Bernard to St. Catherine border main roads blocked. The collapse of the Westmoreland Bridge has also, indefinitely, made the Chovey to Claremont road impassable.

Portland

Portland had its fair share of damage, and in the aftermath of Gustav, one community - Cascade - was left cut off, with Emergency Response teams having to airlift supplies to them. This was due to the breaking away of three retaining walls, repairs to which will cost over one hundred million dollars. The roads were affected by fallen trees, utility poles, inundation, landslips and blocked drains. No road in the parish, with the exception of Cascade, remains impassable.

St. Ann

There was some report of flooding and scoured road surfaces in the parish of St. Ann, however, no roadway was left impassable. By the time, Gustav had passed, all corridors were accessible.

Back to normal

It is now business as usual in the Northeastern Region with over ninety-five percent (95%) of roads affected by Tropical Storm Gustav now back in service. Rains continue to fall but with no adverse effect. Regular maintenance of roads, drains, bridges and gullies continue. Work continues on the Segment Three leg of the North Coast Highway Improvement Project, despite some delays. The restoration is not complete but the NWA team forges forward while "developing safe, reliable and quality roads".

Kingston Metropolitan Region

Wind and rainfall associated with Tropical Storm Gustav moved stealthily across the island between August 28 and 29. Its impact



Aerial view of the Harbour View Bridge, St. Andrew after the passage of Tropical Storm Gustav

was devastating. It uprooted trees, damaged houses, displaced "gully-banks", caused blocked roads, drains and the scouring of many roadways.

St. Catherine and St. Andrew were two of the more severely affected parishes. The Rio Cobre overflowed its banks resulting in significant damage to the Bog Walk Gorge main road. The damage to this major thoroughfare meant that motorists travelling to the North Coast and its environs had to use the alternative routes through Barry and Sligoville. The international road construction company Bouygues Travaux Publics repaired the roadway at no cost to the Government and people of Jamaica.

In the Kingston Metropolitan Region (KMR), 52 roads were blocked, 11 flooded, 19 reduced to single lane usage and 45 were cleared within a very short time frame following the passage of the Tropical Storm.

A section of the Hope River Bridge at Harbour View in St. Andrew was destroyed. By September 3, 2008 a temporary Bailey bridge was launched at the Hope River location. The bridge launch was carried out by one of the National Works Agency's Force Account Teams in collaboration with work crews from the Jamaica Defense Force. The NWA is constructing a Ford upstream, in close proximity to the Hope River Bridge, which will cater to heavy duty vehicles of all sizes and weights, transporting aggregate and other materials and people from and to locations in St. Thomas and other areas. In the meantime the Agency is working on designs for replacement of the Hope River Bridge.

The Sandy Gully drainage network as well as other gullies and drains sustained major damage to the boundary walls and inverts during the passage of the Tropical Storm. The estimated cost of undertaking repairs to these drains and gullies is over \$1 billion.

Regional and parish officers have visited damaged roadways across the KMR, carried out damage assessment, prepared and submitted estimates for repairs. Repairs to these roadways will proceed when approval is given and funds are made available.

Beware of

Inland Flooding!

"In the 1970s, '80s, and '90s, inland flooding was responsible for more than half of the deaths associated with tropical cyclones in the United States."

Consider the following:

Tropical Storm Allison

Harris County Flood Control District

When it comes to hurricanes, wind speeds do not tell the whole story. Hurricanes produce storm surges, tornadoes, and often the most deadly of all - inland flooding. While storm surge is always a potential threat, more people have died from inland flooding from 1970 up to 2000. Intense rainfall is not directly related to the wind speed of tropical cyclones. In fact, some of the greatest rainfall amounts occur from weaker storms that drift slowly or stall over an area.

Inland flooding can be a major threat to communities hundreds of miles from the coast as intense rain falls from these huge

tropical air masses.

Tropical Storm Allison (2001) produced extremely heavy rainfall and catastrophic floods in the Houston, Texas area. Allison then acquired subtropical characteristics and continued to produce heavy rainfall and flooding near its track from Louisiana eastward to North Carolina, and then northward along the U.S. east coast to Massachusetts. Forty-one deaths were directly related to the heavy rain, flooding, tornadoes, and high surf. Damage estimates reported by the Federal Emergency Management Agency (FEMA) were near \$5 billion, with approximately \$4.8 billion in the Houston metropolitan area alone

Hurricane Floyd (1999) brought intense rains and record flooding to the Eastern U.S. Of the 56 people who perished, 50 drowned due to inland flooding.

Hurricane Floyd Courtesy of NASA/GSFC

Tropical Storm Alberto (1994) drifted over the Southeast United States and produced torrential rainfall. More than 21 inches of rain fell at Americus, Georgia. Thirty-three people drowned. Damages exceeded \$750 million.

Tropical Storm Claudette (1979) brought 45 inches of rain to an area near Alvin, Texas, contributing to more than \$600 million in damages.

Hurricane Agnes (1972) produced floods in the Northeast United States which contributed to 122 deaths and \$6.4 billion in damages. Long after the winds from Hurricane Diane (1955) subsided, the storm brought inland flooding to Pennsylvania, New York, and New England contributing to nearly 200 deaths and \$4.2 billion in damages.

In a study from 1970 to 1999, freshwater flooding accounted for more than half (59%) of U.S. tropical cyclone deaths. These floods are why 63% of U.S. tropical cyclone deaths during that period occurred in inland counties.

At least 23% of U.S. tropical cyclone deaths occur to people who drown in, or attempting to abandon, their cars. 78% of children killed by tropical cyclones drowned in freshwater floods. So, the next time you hear hurricane -- think inland flooding!

What can you do?

- When you hear hurricane, think inland flooding.
- Determine whether you live in a potential flood zone.
- If advised to evacuate, do so immediately.
- Keep abreast of road conditions through the news media.
- Move to a safe area before access is cut off by flood water.
- Do not attempt to cross flowing water. As little as six inches of water may cause you to lose control of your vehicle.
- Develop a flood emergency action plan.



A flooded home in Anotto Bay, St. Mary after heavy rains in October 2007

Retrieved from:

<http://www.nhc.noaa.gov/haw2/english/intro.shtml>

The New Yallahs Bridge - A sigh of Relief!

Construction of the new Bridge, at Yallahs, St. Thomas which began in September 2007, is now completed. This 159-metre, composite highway structure was opened to traffic on Thursday, August 14, 2008, eleven (11) weeks ahead of its scheduled completion date of October 31, 2008. The Yallahs Bridge has been constructed across the Yallahs Ford (located between Albion and Poor Man's Corner by a Consortium (Pihl & Sons/Mabey & Johnson), at a contract sum of J\$402,707,440.

HISTORY OF THE YALLAHS FORD

The Yallahs Ford had been in existence for nearly five decades. It was built as a private fording and used as such in the 1960's - 1980's. Over the years, the Ford has been flooded several times, sustaining extensive damage on some of these occasions. During Hurricanes Lili and Isidore in September/October 2002, for example, the Ford was totally destroyed and again during torrential rains in 2003, at which time the two-hundred and forty-foot (240ft) Bailey Bridge which was erected in mid-October 2002, had to be taken out, after the eastern abutment was washed out, resulting in the collapse of the bridge (cf. Report of the Environmental Impact Assessment of the Proposed Yallahs Bridge Construction, Pg.1 & 3).

Flooding of the Yallahs Ford had, over the past years, consistently resulted in the road becoming impassable for extended periods, severing links to eastern Jamaica, via this route, and causing much inconvenience to residents of St. Thomas. The newly constructed Yallahs Bridge, then, is anticipated to be a permanent solution to the perennial problem of extensive flooding and destruction of the Ford whenever the Yallahs River is in spate.

Design of the New Yallahs Bridge

The 159 meters Yallahs Bridge is comprised of four spans of 34.5 meters, 45.0 meters, 45.0 meters and 34.5 meters. The bridge measures 12.1 meters in width. The cross section (width) consists of one 9.1 meters carriageway (two traffic lanes); and two 1.2 meters foot walks. It has been



An aerial view of the newly constructed Yallahs Bridge, St. Thomas.

designed for a life span of 75 years and was built with a flow depth (distance/clearance underneath the bridge) of 6.7 metres (approximately 20 feet). This new bridge is supported on piles which were anchored at an average of 30 metres (approximately 100 feet) underground, with a 10-metre perimeter by 3.5 metres deep scour protection (protection of the piles). The Scour Protection was done via the Rip Rap method, i.e. backfilling/reinforcement of the piles with approximately 6,000 cubic tonnes of boulders.

In further support of the expectation that the new Yallahs Bridge is to be a permanent, or (conservatively), a more stable solution to the pre-existing Ford, it might be comforting to know also, that the new Yallahs Bridge was designed for a one in

one hundred years (1:100) peak flow, which means that the Bridge is expected to withstand flood flows which are expected to occur only once in 100 years.

In addition to the completion of Yallahs Bridge, Bunding works are expected to commence shortly, upstream the structure. This is in order to regulate flows within the river course and further reduce the probability of flooding or damage to the bridge.

It is the NWA's hope that the residents of St. Thomas and, in indeed the many motorists who will traverse the new bridge, will all echo the sentiments of Project Manager, Lynval Ramdial, when he says of the Yallahs Bridge, "A sigh of relief, at last!"

Palisadoes Road Rock Revetment

solid during Tropical Storm Gustav

Coastal defences for areas such as the shoreline along the Palisadoes Peninsula in Kingston face some of the more hostile wave conditions imaginable. The loss of land is alarming and the threat to the roadway is of major concern. Regular occurrence of severe storms in recent years has increased shoreline erosion and damage to the road network. Following Hurricane Ivan in 2004, Wilma in 2005 and Hurricane Dean in 2007, the shoreline and roadway along the peninsula was considerably damaged. Large sections were scoured. Mounds of sand and debris were deposited along the corridor and contributed to the prolonged blockage of the roadway.

Though not a hurricane, Tropical Storm Gustav because of its intensity and slow passage over Jamaica caused much damage and dislocation. However, there was a sense of urgency and anticipation when a team of officers visited the Palisadoes Peninsula following the passage of the storm.

As on occasions, there was no scouring, no mounds of sand or boulders. The corridor was in tact and passable. This was the case because the Rock Revetment withstood the test. The use of Rock Revetments appears to be the most viable option for halting shoreline erosion and damage to the infrastructure. These structures protect the shoreline and control erosion. They dissipate the energy of storm waves, preventing damage, if well designed and maintained. They are carefully engineered structures used to protect long lengths of shoreline along our roadways.

Prior to Hurricane Dean in August 2007, the NWA did 109 metres of revetment. The roadway and shoreline was impacted, but not the section where the revetment was done.

Revetments are widely used in selected areas to protect the shoreline in order to ensure access to important assets such as the Maritime Institute, the Yacht Club and the Norman Manley International Airport. It is sometimes not cost effective to provide full protection using seawalls and instead the permeable revetments are used to reduce the erosion power of waves by wave energy dissipation.

Major Projects Manager, George Knight, who has responsibility for the Palisadoes Rock Revetment Project is pleased with how it has performed. According to Knight, "The Revetment stood up. The decision to construct one was correct and the money was well spent. I am very pleased with the outcome".

While Knight has overall responsibility for the project, the daily activities on the site are being directed by Caswell Whyte. Whyte has been working with the team responsible for the project from its inception. He is satisfied with the outcome and the overall team effort.

"It is difficult and tedious work sometimes working against the elements, but it has to be done, so I put all effort into getting the rocks

properly in place". When completed the revetment will be along more than one kilometre of the Palisadoes Peninsula.



Photos show Rock revetment work done before the passage of Tropical Storm Gustav along the Palisadoes Road in Kingston.

Improvement of Washington Boulevard (Fifth Road) -

A step closer to Reality

Can hardly wait for the promised six-lane, 2.75-kilometre stretch of roadway extending from the Dunrobin/Constant Spring Road Intersection to the Washington Boulevard/Molynes Road Intersection in St. Andrew? Well, the NWA is a step closer to realizing this goal.

The Washington Boulevard Improvement Project which was implemented on June 1, 2007, has the objective of improving and upgrading the standard of the Washington Boulevard - Dunrobin corridor in St. Andrew. This in order to: reduce overall road transportation costs; improve highway safety; reduce congestion along the corridor; and assist the Government of Jamaica with the establishment of a Vehicle Weight Enforcement Programme.

The corridor will undergo enhancements that include reconstruction of the existing pavement; widening of the roadway from two to six lanes; construction of sidewalks, kerbs, drains; retaining walls and an overpass; installation of traffic light infrastructure and street lighting; as well as the laying of 600mm diameter water transmission pipelines along 1.6 km of the roadway. The project will also see to Institutional strengthening which will facilitate working closely with the Island Traffic Authority (ITA) to develop and implement a vehicle weight enforcement programme.

The Washington Boulevard Improvement Project is estimated to cost twenty-three million, three hundred and ninety thousand United States Dollars (US\$23.39-million), of which the Caribbean Development Bank (CDB) has approved a loan of fourteen million, seven hundred and seventy seven thousand United States Dollars (US\$14.777-million). The remainder of US\$8.613-million is to be financed by the Government of Jamaica (GOJ).

The first disbursement of the CDB loan was subject to the Agency's fulfilment of four (4) preconditions. These were: the appointment of a Project Manager; Arrangements must be in place for access to all lands required; Supervising Consultants must be engaged; and an Environmental Permit must be obtained from the relevant local authority.



Workmen applying the final touches to a boundary wall along Dunrobin Avenue

Project Achievements to Date

At the end of September 2008, all preconditions of the CDB loan were met, in that:-

- A Project Manager has been appointed (June 11, 2007);
- An environmental permit has been obtained from the National Environmental and Planning Agency (N.E.P.A) (December 11, 2007);
- Cabinet approved the award of a contract to Mott MacDonald Limited of the United Kingdom for Consultancy services (June 16, 2008). This contract was signed in July 2008 and the Mott MacDonald commenced services on September 1, 2008.
- The NWA now has access to all thirty-seven (37) parcels of land along Dunrobin Avenue, which will be affected by the improvements along the corridor. At the end of September 2008, payments were disbursed to a total of thirty-four (34) parcel owners. Two (2) parcels of land were acquired via compulsory acquisition and arrangements were in progress to make payment to the remaining one (1) parcel owner.

Construction of Boundary Walls

Construction of Boundary walls along the thirty-seven (37) parcels of land commenced in February 2008. To date, nineteen (19) walls have been completed and works are in progress on a further seven (7). Completion of Boundary Walls is targeted for the end of October 2008.

Utility Relocation

The Jamaica Public Service Company (JPSCO) and Cable and Wireless (C&W) have both completed designs for relocation of their utility plants. Relocation activities are scheduled to commence next month (October 2008).

Road and Bridge Construction

Designs for road and bridge construction works and bidding documents are now being finalized. The Consultants have, as well, conducted their reviews and have submitted their suggestions. Pre-qualification of contractors have also been completed and Invitations to Tender are scheduled for October 2008.

The civil works contract is expected to be awarded by January 2009, for the commencement of the road construction works. These works are projected for completion within 18 and 24 months of the commencement date.

Improved Corridor from Adelphi to Kent in St. James



Workers sweeping loose material from a section of the Adelphi to Kent roadway in preparation for paving

The Adelphi to Kent main road in St. James, sections of which have been in a state of disrepair for many years is now receiving a well needed facelift.

Residents of communities along this corridor have been complaining about the poor road conditions for some time. Persistent flood rains have overtime severely scoured sections of the roadway resulting in an uncomfortable driving experience for motorists who use this corridor. This condition has been exacerbated by the poor drainage system in some of the worst affected areas.

The National Works Agency (NWA) has responded to the cries of the residents and has begun a major restorative project along sections of this corridor. This project which is valued at \$5 million is aimed at improving the drainage system, as well as the road condition in the area. The effort forms part of the Agency's thrust to improve the condition of the island's main road network and flood control system.

The project began on September 10, 2008 and involves the improvement of 10,000 square metres of roadway. The work is being undertaken by one of the NWA's Force Account teams. This team has been working assiduously to effect the necessary repairs to the corridor.

The improvement in the drainage system aside, the works also include the bushing of verges. In terms of the road surface, the team is undertaking the patching and rehabilitation activities on some sections of the roadway. To date the NWA team has completed the bushing of verges along sections of the roadway and is now proceeding with work to prepare sections of the roadway for asphaltting. In addition culverts are being installed at critical points along the corridor.

This project has been met with great appreciation from residents in the area who have expressed their satisfaction with the work that is being undertaken. The residents are pleased with the progress of the works. "I think the work going on nicely. I can't wait for it to finish," a resident said. The overall sentiment is that this project has been long in coming, but when completed, will give motorists and residents a more comfortable driving experience.

"We glad for the work in the community, a long time we want see something like this. Hopefully the work finish quick, so we can really see the and feel the benefits," said Terry-Ann Obrian, a resident of the community.

The project is expected to be completed by mid November.

Cecil Richards

The Quintessential PWD Man

'CJ' Cecil Jarrett Richards fondly referred to as "Reverend Richards" because of the frequency with which he has been called on to offer prayer at National Works Agency public gatherings, can be regarded as the quintessential public servant. His talent and the ability that he displays on these occasions could easily lead you to believe that Cecil Richards chose the wrong calling.

Cecil Richards is a deeply religious person and committed churchman but his 41 years journey at the former Public Works Department and successor the National Works Agency is indicative of commitment and service in the Public sector. Cecil Richards has worked in the Government service for his entire professional career and must be regarded as an outstanding public servant.

He recalls that this association with the Public Works Department began while still in school at St. Georges College Extension. Cecil was able to secure a holiday job during the summer at the Stony Hill Station. "As a teenager I needed money to purchase the things that young people of all ages want, go to the movies, buy a pair of Clarks, things like that and I felt the only way to get money was to work for it". So he decided to go to the Public Works Department to enquire if a summer job was available.

"I don't recall who made the suggestion to me, but I was successful and started working at the PWD with William Plummer and Rhoney Haase, who was in charge of the station, at the offices located in Stony Hill". It was through "holiday day work" that he made his first connection with the Public Works Department and he has remained with the Department since then.

Cecil attended St. Theresa's Primary School and St. Georges College Extension. At St. Georges he pursued courses in Economics, Technical Drawing and Mathematics, English Language, Geography among other subjects.

His enthusiasm, discipline and keen interest were noted. "They liked me" he recounts, and every summer from then on he was able to secure a summer job with the PWD. When he left school, Cecil began working with Raymond International & Emkay, the company that was responsible for the Sandy Gully Drainage Scheme Project.

While there, he received a call from Mr. Rhoney Haase, who was the Works Overseer in charge of the Stony Hill Station, to attend an interview at the Public Works Department. He was successful and secured a job as a Field Assistant. On July 12th 1967 his formal association with the Public Works Department began. He was attached to the Stony Hill Offices between 1967 and 1969. Later, he was transferred to Gordon Town, where supervision of control sections and their maintenance was among his main duties.

Cecil was quickly absorbed by road construction work of the PWD. His focus and hard work meant he was selected for further training at what was the then Tarrant Training School, where he received

instruction in road construction and maintenance. He did well in the various areas of the Department's operations, was sent to the Half Way Tree Offices, located adjacent to the St. Andrew

Parish Church, and promoted to Works Overseer Grade 2.

This promotion and added responsibility meant that he now supervised Office Staff and Field Assistants. Following this promotion he was sent to work with the Road Maintenance and Improvement Project (RIMP). This was a World Bank Project which was undertaking overlay works along the main road network in five parishes - St. Ann, St. Andrew, St. Mary, Portland and St. Thomas.

The persons responsible for this project were Gilbert Coulton, Richard Powell, Peter Schroeter and later the venerable Karl Martin. He joined RIMP as a project engineer and when Peter Schroeter was reassigned he assumed responsibility for the project.

CJ recalls that, "This project was being undertaken during the early 1970's, sometime between 1974 and 1975. A number of Officers who worked with the Maintenance Directorate were seconded to supervise this project. "We were the pioneers as it were. Among these officers was Vincent "Tony" Small. He is presently the NWA Parish Manager in St. Ann. Roy Anderson who left the PWD prior to the advent of the NWA. Then later on Fredrick Webb, Assistant Parish Manager in Portland and Malcolm Morgan who now works with the Major Projects Directorate, joined the programme".

At the end of the Project, which lasted approximately two years, Mr. Richards went back to his substantive post at the PWD and was dispatched to St. Ann having been promoted to Works Overseer 1. From St. Ann he moved to St. Thomas then on to Clarendon and finally Manchester where he remained until his transfer in 1985 to Kingston. On his return, he assisted in establishing the Corporate Area Maintenance Unit, popularly called "Urban". Cecil was eventually promoted to Superintendent and worked at "Urban" until 2001. The NWA came into existence in 2001. Cecil applied for the job and was selected as the Parish Manager for St. Andrew, a position he still occupies.

Cecil Richards has provided leadership in all areas of the Public Works Department. One of his more outstanding achievements in his long career is the Discovery Bay to Runaway Bay Improvement



Cecil Richards



Cecil on one of his many site visits.

Project. It was being managed by Ludlow Coley, but Cecil had displayed such skills in all the areas of road works that it was easy to hand over the project to him. "I took over the project. That was a very good and challenging experience, but I enjoyed it" he says. "It involved blasting, to widen the roadway adjacent to the caves. It was hard, technical, challenging work".

He describes the overlay of roadways as another challenging experience. "We never had much of that in Jamaica at that time". It was the first major overlay Works Contract awarded in Jamaica, a Road Improvement and Maintenance Programme (RIMP). This activity was supervised by the British consulting engineering firm of T.P.O'Sullivan and Partners. "They held workshops and courses prior to us taking on the overlay work. Michael Colin Campbell an experienced expatriate engineer taught us overlay. The days in the field were something else. The heat was excruciating. We added Tamarinds to water with lime juice and used this to refresh ourselves. We shared everything. If it was one bulla we all shared it. It was very hard team work but it was enjoyable". The team work and camaraderie enabled the officers to better confront the challenges and enjoy the time spent working on the project.

Cecil recalls that his first stint at "Urban was also challenging and different from work in the parishes. "There was not the normal bushing and drain cleaning. Instead you had structures like gratings, kerbs and sidewalks". He also worked on a project improvement in Ocho Rios, constructing drains, sidewalks and kerb walls. "This was also challenging and it provided added experience".

Wherever Cecil Richards served, his commitment and passion allowed him to gain the admiration and respect of colleagues. He also formed many friendships along the way "too numerous to mention". "I met a lot of people in all the parishes that I worked. I am still close to Tony Small, Malcolm Morgan and Fredrick Webb".

Cecil Richards's professionalism made it easy for him to make the transition from the PWD to the NWA. "Many aspects of the old system had to change. We could not continue to operate in that way. Several things needed changing; however everything should not have been changed". Cecil feels that in many ways "we have missed the boat and made a profound and fundamental mistake". According to Cecil, an organization that has been around for so long, "must have been doing something good, this should have been retained". He believes in accountability, "but red-tape makes our job too hard. When we were changing over we should have had a proper review and kept and improved on the good aspects of the old system".

He feels that funding is a major problem and is perhaps the main reason why the Agency is unable to achieve the goals it set itself. "I was extremely excited when I joined the Agency. It was poised to take off, but it never maintained the momentum. The training, the Rewards and Recognition are all good things. But it fell down after the initial start up. The area of communication is good, not like in the old days, people know about the NWA because of the communication, but we fall down when it comes to solving the problems to do with our core responsibility".

There are three areas of the organizations activities which he has identified and feels are important to be singled out for special attention. Encroachment along the network is a major problem. "The Agency needs to put teeth in the system and give the officers the tools they need to address this forcefully". A training programme needs to be developed that emphasises training in Routine Maintenance and public awareness and education about road related matters needs to be improved.

Cecil Richards is an avid sportsman. His favourites are Cricket and Table Tennis in that order. "I love sports, and have participated in many but cricket is my main game. I played Minor Cup for Melbourne Cricket Club of which I am still a member and played on the over-40 cricket team as well. In the old days there were some good players who just never get the opportunity because there were many top players. The aim was to win and after the game we had fun. If today was then many of us could walk into the Jamaica Cricket or even the West Indies Team. The standard then was very high".

Cecil Richards is a dedicated family man. He has been married for 37 years. The union with his wife Yvette, who is a business woman, produced five daughters who have excelled academically.

His religious outlook on life and relationship with his church is important to him. This he says influences his relationships. He is a Lay Reader at St. Jude's Anglican Church, Stony Hill where he has been a member since 1979. He gives back to his community in other ways as well. He sits on several Boards including that of the Wortley Home for Girls, the Golden Spring Basic School and the Brandon Hill Primary and Junior High.

Friendly, forthright and modest. Cecil Richards, the quintessential PWD man, one of the stalwarts and now NWA team player, is an example of sustained hard work and a model to be emulated. His contributions is deserving of our attention, admiration and respect.

HOW TO AVOID SKIDDING AND COLLISION ON WET ROADS

Skidding is caused by a lack of traction as you drive. Skidding causes accidents, injuries property damage and in extreme cases, death. Bad weather, mechanical failure and poorly maintained roadways may contribute to collisions. More collisions however are caused by driver error than by any other factor. The tragedy is that nearly all collisions could have been prevented. Safe driving habits are simple, but in today's hectic driving world, they are often overlooked, forgotten or simply ignored.

A vital step to avoid skidding is to buy vehicles with anti lock brakes and traction systems. These systems, now becoming standard in most new cars help to prevent skidding. If you don't have anti lock brakes, try to press gently onto your brakes to prevent the brakes from locking and sending you into a skid. If you feel yourself losing control, try to let up a little bit on the brakes.

If it is rainy, you must slow down especially when turning to prevent skids. You should also take care if it is the first rain in a long time since the roads are usually slick with oil and grease that have not been washed away for awhile. In the end if conditions are truly bad, simply pull over until conditions improve



shorter as they age. With the decrease in height many people may also experience a deterioration of posture.

THE BENEFITS OF STRENGTH TRAINING

Strength training slows down the aging process. Strength training includes any weight bearing activity, but is most generally associated with weight lifting, and bodyweight exercises. Strength training can help you stave off

and even reverse the loss of muscle mass and bone density due to aging.

Loss of lean tissue mass. Your muscles and internal organs are lean tissues. As we age, most of us lose both muscle and internal organ weight and replace the lean tissue with fat. People who age well, who seem to be far younger than their years, retain their lean tissue mass. Indeed, the Evergreen Project found that the more lean tissue you have the longer your life, the fewer your illnesses and the better your mental functioning.

- Lean tissues protect you from many age-related ailments:
- Reduces risk of bone fractures by supporting bones.
- Improves sexual health by stimulating sex hormone production.
- Reverses hormonal age by boosting human growth hormone.
- Helps you keep trim by boosting your metabolic rate.
- Gives you more energy by increasing glycogen stores.
- Decreases risk of infection by strengthening your immune system.

Lean tissue loss begins at age 30, with an average of three pounds lost per decade. Yet the loss is preventable and completely reversible. I've seen patients of all ages regain 100 percent of their youthful lean mass.

To build muscle mass, you must engage your big muscles. The quadriceps on the front of your thigh, the hamstrings on the back of your leg and the gluteus of the buttocks are your three biggest. Provide stiff resistance through a broad range of motion for these three muscles. This can include weight training with squats or leg presses, bodyweight exercises, bicycling, stair-stoppers or elliptical machines.



As we age, we begin to lose muscle mass after the age of thirty and bone density after the age of forty. Some of this loss occurs because of the natural processes of aging. The losses in muscle mass and bone density can be slowed and even turned around by implementing a strength training program.

CONSEQUENCES OF LOSING MUSCLE MASS

Sedentary individuals can begin to lose muscle mass as early as their mid-twenties. Human beings can lose up to 1-2 percent of muscle mass per year, eventually losing as much as 50 % of muscle mass in the course of a lifetime. The effects of losing muscle mass include a decrease in strength, greater susceptibility to injury, and an increase in body fat.

Less strength due to loss of muscle mass makes it more difficult to do athletic movements, and eventually can even hamper the ability to do everyday tasks. The loss of strength and flexibility in the muscles associated with aging, leads to greater possibility of injury.

A lesser known side effect of loss of muscle mass is decrease in metabolism. Muscles burn calories. The less muscle mass you have, the less calories you can burn. It is very important to maintain muscle mass in order avoid gaining weight as you age.

CONSEQUENCES OF LOSING BONE DENSITY

Bone density peaks between the ages of 25 and 35. Eventually as we age our bones shrink and become less dense. The loss of bone density causes an increased risk of Osteoporosis. Osteoporosis makes the bones more susceptible to breaking. Shrinking of the bones can also cause people to become

Tropical Storm Gustav Highlights



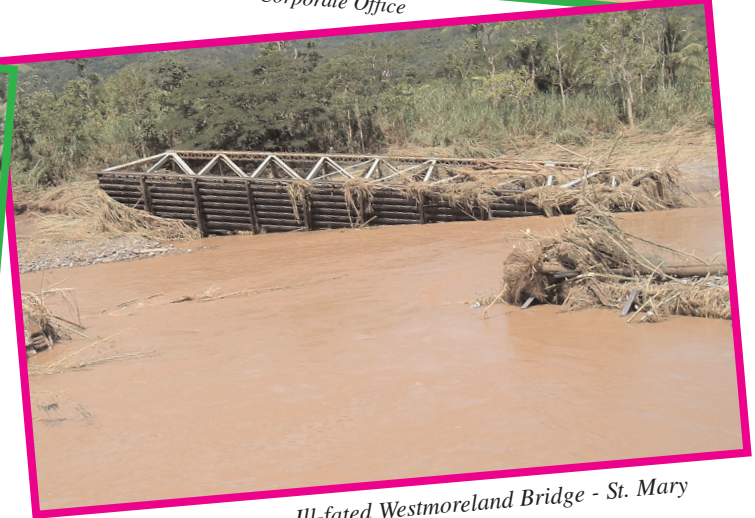
Cruiser Gully, Barbican - St. Andrew



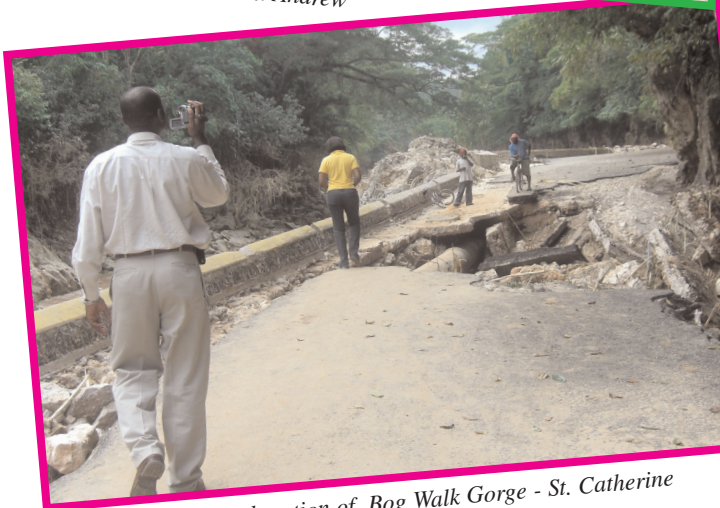
Team Members in the EOC - Corporate Office



Damaged Gully Wall - St. Andrew



Ill-fated Westmoreland Bridge - St. Mary



A damaged section of Bog Walk Gorge - St. Catherine



Landslide along the Wirefence to the Warsop roadway- Trelawny

JOKES

Ha HA Ha!



BACK TO SCHOOL BUDGET TIP No. 34



"Well, if bread's free, and gravy's free, how about bread and gravy?"

Pack grade-A lunches this school year!

Well it is that time of year again - Back to School! Here are two lunch box ideas that will give parent grade-A this school year. Kids will love these easy fun recipe!

MOUNTAINS AND FOREST SANDWICH



WHAT YOU NEED

- 1 Cheese single
- 1 slice Bologna
- 1 hot dog bun
- 1 Tbsp. Mayonase dressing
- 1 leaf lettuce leaf

WHAT YOU DO

CUT Cheese single and bologna in 1/2, using knife to make zig-zag

cut. SPREAD inside of bun with dressing; fill with lettuce, Cheese and bologna.

SERVING SUGGESTION

Serve with tomatoes and or any other vegetable or fruit on the side.

CHECKERBOARD TURKEY SANDWICH



WHAT YOU NEED

- 1 slice whole wheat bread
- 1 Tbsp. Cheese Spread
- 3 slices OSCAR MAYER Deli Fresh Shaved Oven Roasted Turkey Breast
- 3 slices tomato
- 1 slice white bread

WHAT YOU DO

SPREAD wheat bread with cream cheese spread; top with turkey, tomatoes and white bread.

CUT sandwich into 3 horizontal strips, then 3 vertical strips to make 9 squares. Turn 4 or 5 of the squares upside down.

ARRANGE squares on plate, alternating colors as needed to resemble a checkerboard.

SERVING SUGGESTION

Serve with fruit/fruit juice on the side.

<http://www.kraftfoods.com/kf/YourKids/LunchboxSolutions/LunchboxBuilder.aspx>

Team NWA
let your voice be heard!

We welcome your

articles, poems,

inspirations, quotes, etc

send to: susanwebb@nwa.gov.jm