

# Town of Black Diamond

## Municipal Recovery Action Plan for 2013 Flood

December 20, 2013

final

## REPORT

BLACK DIAMOND

Municipal Recovery  
Action Plan for 2013  
Flood

2013-12-20



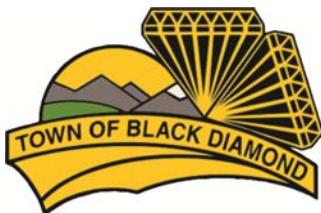
# 1.0 Background

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In June of 2013, Alberta suffered one of the province's worst natural disasters in history with torrential downpours and subsequent flooding in many communities across the province, including the Town of Black Diamond.

The Sheep River flows increased significantly, overflowing its banks and eroding the land next to the Black Diamond Water Treatment Plant, the Foothill's Lions Campground, (upstream of the Highway 22 bridge) and near Vale's Greenhouse (downstream of the Highway 22 bridge). Water flooded into Town and damaged the water treatment plant so significantly that the treatment and distribution of water to the Town of Black Diamond was no longer feasible. The campground, fire hall, homes, parks and businesses throughout Town were also greatly damaged.

The Province appointed four new Associate Ministers to deal with the flooded areas in southern Alberta, Associate Minister Kyle Fawcett represents the southwest, which includes the Town of Black Diamond. He and his team were in touch with and available to Town staff and Council throughout the initial phases of the disaster recovery process.

Members of the Disaster Recovery Team were provided with tours of the damaged areas soon after their appointment, so that they could see firsthand the damages sustained and obtain an understanding of the priorities and needs of the community.

Working in partnership with Alberta Transportation, Alberta Environment & Sustainable Resource Development, the road rebuild to reconnect with the bridge was finished in a few weeks rather than a few months. The Disaster Recovery Team also assisted the community by ensuring that efforts to provide a reliable and safe source of potable water to the Town, after losing wells and the water treatment plant in the flood, was a priority for all involved in the approval and funding process.

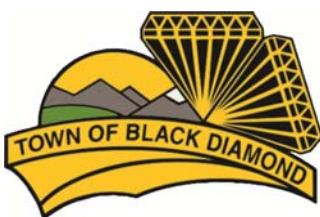
The work done by the Town and its contractors immediately following the flood, to push the water flow back near where it flowed prior to the flood, was done to facilitate restoration of the electricity and communications. It also allowed the road crew to begin a complete rebuild of the washed out road to the bridge, from the riverbed up. That work, while successful for its immediate purposes, was not an engineered project. It was done quickly and to the best ability of those involved in the work, but it was never intended to be a permanent solution. Therefore, under the direction of the Province, the Town has engaged an engineering firm to identify short-term assessment of the Town's storm drainage and berm requirements, long-term assessment and recommendations related to riverbank remediation, including strategies for future flood prevention measures. The Town will continue to work with the Province and the appropriate agencies and consultants to determine viable solutions to these issues.

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## 2.0 Introduction

The Town of Black Diamond recognizes that each affected individual, family, business and community member has different needs in relation to recovery from the floods. They are committed to ensuring their communities can rebuild and recover to a state equal to or greater than the pre-disaster conditions by designing and implementing safe, efficient, and cost effective strategies.

A Municipal Recovery Action Plan recognizes the need to swiftly rebuild flood-affected areas while continuing to pursue the municipalities' strategic goals. A recovery plan is intended to guide recovery efforts and help target resources where they will be most valuable and impactful for the remainder of this fiscal year and beyond. The Municipal Flood Recovery Plan will also influence the development of future Municipal Strategic Plans and other related government documents that are part of the annual business planning cycle.

Using the building blocks described in the Provincial Recovery Framework <http://alberta.ca/alberta/images/Flood-Recovery-Framework.pdf> released in July 2013, the Flood Recovery Plan provides more detail to government departments and stakeholders as to how the Town of Black Diamond intends to achieve the outcomes described in the framework. This detail includes the key milestones for this fiscal year (to March 31, 2014) and beyond. The strategic guidance is intended to enable continued alignment of efforts and provide clarity for longer-term planning, particularly for municipal departments.

## 3.0 Vision and Principles

### Flood Recovery Vision

To honour the residents and businesses of Black Diamond affected by the floods by supporting the social, environmental and economic recovery of the Town in order to provide a healthy and resilient community for current and future generations.

### Principles

Regional Focus, Resident Focus, Sustainability, Service Hub, Timely, Fairness, Preserve Culture, Preserve Vision.

### Resiliency and Flood Recovery Goals

- Protect the Town from future flooding
- Ensure the Town has a sustainable raw water source and re-establish infrastructure to its former state prior to flooding
- Ensure the affected community has the information necessary to support residents and recovery efforts
- Revitalize the economy of the flood-impacted region
- Rebuild municipal infrastructure, transportation and recreation facilities

## 4.0 Stakeholders

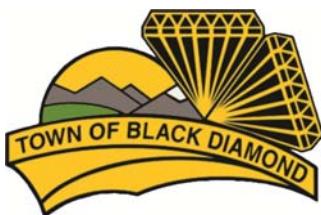
The municipality of Black Diamond is working with the following stakeholders during the flood recovery process:

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#### Individuals and Families

The individuals and families in the region are on their way to recovery. They have returned to their homes, returned to their employment, placed children back in school, and are in the process of working with insurance companies, seeking information on the process of rebuilding and/or are rebuilding.

#### Local Governments

The Town of Black Diamond is leading and planning the recovery within their community and are working with the Town of Turner Valley, the MD of Foothills and the Village of Longview to establish a sustainable long term water source with the construction of a waterline from Turner Valley to Black Diamond.

#### Businesses

The majority of Local businesses have reopened in Black Diamond with the exception of the car wash attached to the FasGas and the Town's only Dental Office. The FasGas car wash will be closed until a permanent, sustainable, water source is established.

#### Red Cross

The Red Cross was contracted by the Government of Alberta to work with municipal and provincial governments since the beginning of the disaster. Red Cross and Alberta Municipal Affairs continue to work towards ensuring residents are able to transition from temporary accommodations into longer-term solutions. The Red Cross have established a presence within Black Diamond to allow for residents in need of assistance to access their services.

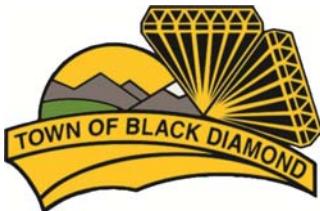
#### Government of Alberta- Flood Recovery Task Force

The Government of Alberta provides a support role to the local government recovery. The Government of Alberta appointed the Flood Recovery Task Force to coordinate department support to the affected communities and facilitate the recovery process. The Flood Recovery Task Force has assigned Flood Recovery Coordinators, William Ales and Arthur Anderson to the Town of Black Diamond to assist with flood recovery efforts. The Town of Black Diamond has also met with Minister Fawcett regarding flood recovery efforts and funding and has received assistance and clarification through his office.

#### Federal Government

The Government of Canada will provide financial assistance to Alberta through the Disaster Recovery Program. The Town of Black Diamond has applied for

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funding under this program for restoration of eligible flood damaged infrastructure to pre-flood conditions.

### **Alberta Transportation**

Alberta Transportation owns and maintains Highway 22 and the Highway 22 bridge that crosses the Sheep River on the west side of Town. The Town of Black Diamond is coordinating proposed flood mitigation measures for the community with Alberta Transportation's proposed bridge protection for construction completion prior to spring.

The Town has also contacted Alberta Transportation to discuss their concerns with the size of the Highway 22 bridge and the flood damage the Town incurred due to the bridge being under capacity for the current 1:100 year flood flow rates.

### **Alberta Environment and Sustainable Resources (AESRD)**

AESRD is providing funding for flood mitigation and erosion control measures. They are also responsible for approvals under the Water Act and Public Lands Act.

## **5.0 Governance Roles and Responsibilities**

The Town of Black Diamond will lead their community through the current and long-term recovery process with the continued support of the Alberta Government and neighboring municipalities. Under the guidelines of the provincial recovery framework, the Town will ensure that operations best support the needs of the community while ensuring all parties are operating with an understanding of the core recovery principles, the governance model, cost effectiveness, timeliness, and taking the residents into account.

By creating and implementing action plans, the Town will lead their residents, local businesses, and community members through the decision making and coordination process, and ultimately assigning resources to complete the necessary tasks.

## **6.0 Recovery Planning Framework**

### **PEOPLE**

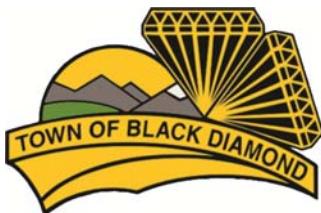
The highest priority is the overall physical, mental and social well-being of the residents of the Town of Black Diamond. Identifying the needs of individuals, businesses, and the community as a whole is the first step in rebuilding not only the disaster struck areas of the Town and surrounding areas, but also the spirit and culture of the community itself. This will be achieved by identifying and

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assessing the needs and priorities of the residents and businesses and ensuring that the right resources are in place to support the action plan.

The Town of Black Diamond is committed to keeping residents and businesses informed of efforts to repair damages caused by the flood and ongoing emergency measures, including a fire ban and water use restrictions. Technical information and Frequently Asked Questions are also available through regular updates on behalf of the Quad Regional Water Partnership. Information about provincial flood relief programs and services is housed on the Town's Flood Recovery webpage and promoted through the Town's social media channels (i.e. Facebook and Twitter).

In addition to mailing updates directly to residences, the Town is exploring options for enhancing its digital channels. The Town and its consultant are currently reviewing the website to improve functionality and increase accessibility to flood-related information and resources online. The Town understands that a multiplicity of communication tools is required to reach a diverse audience, and is currently reviewing the efficacy of existing tools and considering options for expanding its 'toolkit'. In the interim, the website will be the main source for information and resources about flood relief, recovery, and mitigation.

### Safety

Safety includes the provision of fire and police services, property safety assessments/cleanup, site access and essential services such as potable water and sewage. The Town of Black Diamond's Safe Operation's plan will be revised as the Water Treatment Plant was destroyed during the flood and the new water source will be coming from Turner Valley. While contractors worked to re-establish a water supply, the municipality ensured emergency water supplies by trucking potable water. This was augmented with the installation of approx. 5000' of high volume fire hose from Turner Valley to Black Diamond until a more robust temporary plastic pipe could be installed over land. These temporary solutions were yet finalized with the completion of the permanent water supply line from Turner Valley that is governed under the Quad Regional Partnership and was completed November, 2013. With these measures and resident's efforts to conserve water, the community was able to maintain a potable water supply.

In addition, the town hauled away all of the flood damaged materials from the homes and businesses and cleared away the dangerous items from the WTP site. This also included debris left from the many trailers and motor homes that were washed away out of the campground and found beside the river in the town's off-leash park.

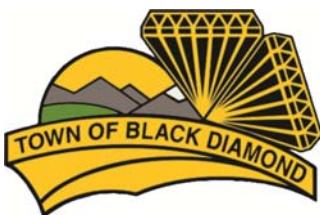
Provisions have been implemented to secure those areas that pose a danger to the public. The Town is also encouraging everyone to stay away from the river as the ice forming may hide newly developed unseen hazards.

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**Health**

Health care includes ensuring emergency care, acute care, long-term care and seniors' health, public health and addictions and mental health activities, which are monitored over the longer term. This may also include community health assessments and long-term health care strategies if required. Although the Town of Black Diamond was challenged with the loss of the water supply, they were able to ensure that the health care facility was able to continue to operate and ensure both their patients and long term care patients were able to stay in the community.

Once the initial crisis was over residents were accompanied by the fire department to return to their homes to pick up essential items. Within days of the flood, those same residents were allowed to return to their homes and with the assistance of firefighters, volunteers and sustainable resource development employees the clean-up of their homes began. This prompt and expedient action at cleaning these homes prevented more significant issues from developing. Electrical and heating systems were inspected by both Fortis and Atco and once appropriate remediation of the appliances and electrical panels was completed by certified electricians gas and power were restored.

**Social well-being**

Considerations for social well-being include activities related to community and group support, faith-based activities, sports and education initiatives, interim housing and return-to-work support.

**ENVIRONMENT**

The disaster had significant impacts on the environment as a result of overland flooding and sewage back up. The Town of Black Diamond is working with the Quad Regional Water Partnership to devise a long-term water servicing solution and to provide a sustainable water service to the Town. In addition, the Town has requested the services of Urban Systems to help coordinate flood recovery efforts. Current flood recovery projects include:

- repairs to Wilrich Playground, Legacy Park, the off leash park and riverfront trails
- repairs to damaged roads and the sewer system including future flood mitigation for a section of the Westend sanitary sewer that was exposed during the floods
- repairs to the Fire Hall and surrounding area

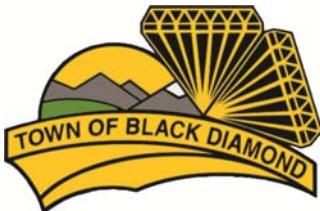
The Town is also assessing the extent of damages to the area upstream of the Highway 22 bridge (formerly the north end of the Foothills Lions Campground) to determine how to treat this land, which was severely damaged during the flood.

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### Amenities

The hockey rink is a valuable amenity for the Town of Black Diamond. Water was trucked in after the Black Diamond water treatment plant was no longer functioning to allow for people to continue to use the facilities.

### Waste and pollution management

Properly and effectively managing waste, particularly in landfills, is essential to the ongoing protection of human health and enhancement of the natural environment.

## 7.0 Reconstruction

The disaster affected a large portion of the Town of Black Diamond. Damaged infrastructure included residential, commercial and public buildings, as well as utilities. Prioritizing the needs of the community on a social and economic basis has to be taken into account for the re-establishment of a viable, attractive and sustainable community.

### Residential, commercial and public buildings

The status for reconstruction of Town owned public buildings damaged by the flood is as follows:

- Water treatment plant- The water treatment plant was damaged beyond repair.
- Fire hall - The fire hall wall was damaged and repaired
- Town of Black Diamond's campground buildings- one of the 3 campground buildings was repaired. The other two campground buildings were damaged beyond repair during the floods. The Town is currently considering as to whether or not the buildings will be replaced.

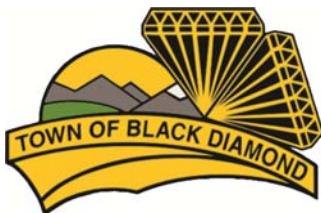
The flood physically damaged 5 businesses with waters rising 3 or 4 feet up from their floors. Of those 5 businesses, one remains closed, the Town's only dental clinic, and one remains partially closed, the car wash/gasoline station. The car wash portion of the gasoline station is closed due to the Town's restricted water usage policy put in effect because of the loss of the water treatment plant to the flood. Until the Town is able to secure a permanent water source, the carwash will remain closed. The other flooded businesses took roughly 1.5 weeks to repair the damage done by the floods before they were able to reopen. Whether the businesses were flooded or not, all businesses experienced an average of a 50% reduction in business for almost a month after the flood due to the loss of the bridges connecting Black Diamond to neighbours Turner Valley and Millarville. Further loss of business occurred as a result of the loss of the Town's only campground that traditionally has been operating at near its capacity with 66 sites typically filled throughout the camping season.

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### Re-establish Insured Assets

Insurance received for the Water Treatment Plant will go to the establishment of a water source from the Town of Turner Valley. The Fire hall was established to pre-flood conditions, as was one of the Campground buildings.

The Town is assessing the extent of the damages to the area upstream of the Highway 22 bridge (formerly the north end of the Foothills Campground) to determine how to treat this land which was severely impacted by the flood.

### Architecture and Surveying

After the cleanup of debris, decisions regarding the establishment of architectural controls will need to be taken and property lines may need to be re-surveyed.

### Prevention

In addition to repairing damages caused by the flood, the Town has requested the services of Urban Systems and MPE Engineering Ltd. to explore flood mitigation measures for the future protection of Black Diamond. Several projects have been identified as priorities for flood mitigation, including:

- relocation of the west-end sanitary sewer away from the river or, alternatively, the installation of a permanent erosion control to protect the sanitary sewer in its current location
- construction of a dyke on the east side of the river upstream of the Highway 22 bridge
- reinstatement of the drainage outfall located south of Highway 22 and east of the river and installation of a backflow prevention device to prevent the river from flooding the Town
- installation of erosion protection on the east side of the river, downstream of the Highway 22 bridge

**Note:** Flood mitigation efforts are being contemplated in the context of a 100 year flood event. A 100 year flood event has a 1% probability of occurring in any given year. The province will fund flood mitigation measures designed for these 100 year events.

Construction of the above flood mitigation measures is expected to begin as soon as possible in the New Year. Work required for protection against spring runoff is expected to be completed prior to May, 2014.

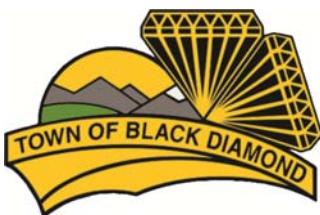
The Town of Black Diamond is currently working with Alberta Transportation to coordinate community flood mitigation with the protection of the Highway 22 bridge and a section of highway located within the flood plain. All flood mitigation projects, including those proposed by Alberta Transportation, have been analyzed to determine the impacts on river alignment and flows during a 100 year flood event.

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### Information for Homeowners and Business Owners

Due to the diversity of individuals, home and business owners involved in the losses, information on rebuilding will need to be proactively provided.

### Planning and Development Regulations

Land Use Bylaw 98-14 regulates the use and development of land within the Town. Section 8.21 addresses land that is subject to flooding. The Bylaw makes reference to the Flood Risk Mapping that was prepared for the Town under the Canada Alberta Flood Damage Reduction Program, and distinguishes between the Floodway, where flood waters are deep and fast, and the Flood Fringe, where water is shallow and moves slowly. The following is a summary of the regulations contained in Section 8.21 of the Land Use Bylaw. Please refer to the Land Use Bylaw for the specific policies.

In the Floodway, development is limited to the following uses:

- Existing uses;
- Extensive Agriculture;
- Public Parks;
- Playgrounds
- Natural Areas
- Parking Areas
- No new buildings are permitted except for the replacement of existing structures provided the new structures are adequately flood proofed.

In the Flood Fringe, the uses that are listed in the land use district for which a parcel is designated continue to apply, in addition to the following regulations:

- All new buildings and major additions are to be adequately flood-proofed to 0.5m above the design flood level;
- The bottom of the first floor joists, or the bottom surface of the slab-on-grade of the structure must be 0.5m above the design flood level;
- All mechanical and electrical equipment shall be located above the design flood level;
- Basements are discouraged in new buildings unless flood-proofed designed by a qualified professional.

A Development Permit is required for all new buildings larger than 13.4 m<sup>2</sup> (144 ft<sup>2</sup>). All Development Permit applications are to be referred to Alberta Environment for comment. In addition to the standard information that is required for all Development Permit applications, applications in the Flood Risk Area require an engineer's report specifying the how the development will be flood-proofed, including:

- Site alterations and filling of the property;

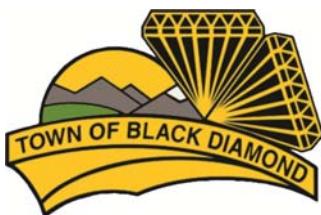
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- Foundation and drainage;
- Erosion protection;
- Impact on adjacent properties.

Before rebuilding, careful attention should be paid to the existing planning requirements and restrictions of the municipalities. Currently, building openings are to be constructed 0.5m above the elevation of the flood fringe.

### Inspections

The affected areas fall under the Alberta Safety Codes Act (chpt S-1 RSA 2000) for permitting and inspections.

At this time, Alberta Municipal Affairs will monitor and assist the municipalities in their permitting and inspection programs to ensure construction is in compliance with the Act.

### Utilities

It is imperative that water, sewer, gas, electricity, and private sewage systems are restored to safe operational levels. Water service has been restored and the Town is working with other municipalities to secure a permanent sustainable water source. The Town is currently reviewing the sewer system to assess damages and what will be required to repair or replace. Electricity services were assessed and fixed prior to the residents returning to their homes. Ongoing assessments will continue to ensure that all services meet or exceed pre-flood levels.

### ECONOMY

The economic recovery of the region will help ensure that people, business and industry, infrastructure and government in the region are able to return to normal. The plan will support the return of economic health in the region, and will help to enhance the economy and offset economic disadvantages experienced as a direct result of the disaster.

#### Individuals

Essential services must be accessible by all community members and restored relative to pre-flood levels.

#### Business

To help businesses deal with the aftermath of the flood, the Town has regularly updated business owners on what and how to obtain provincial support. Furthermore, the Town is in the process of finalizing a \$50,000 grant from the Province's Enterprise Development Department. This grant will be used to advertise and promote the Town over the next two years to stimulate a support local campaign and bring in tourists from Calgary and region.

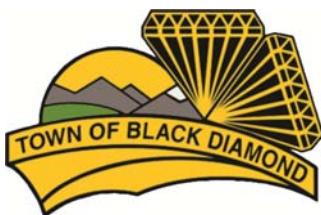
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### Infrastructure, communications and transport planning

Restoration of the affected communications, infrastructure and transportation links has been vital to the recovery and enhancement of the local economy.

### Government

Support of the local government in Black Diamond is imperative to assist with the economic recovery of the region. Intermediate and long-term supports will be put in place to assist local governments with their recovery goals.

## 8.0 Success Factors

In general, community recovery is successful if it overcomes the impacts of the disaster, re-establishes an economic and social base that instills confidence in the local citizens and businesses, and rebuilds the community to be more resilient from future disasters. A critical issue in defining recovery success is specifying when recovery is complete. Metrics (indicators) of successful recovery are based on this end point. Recovery is also considered within the context of the trajectory of the community and not based solely on a static pre-disaster state. For example, successful recovery considers the previous population growth of the community not just the total population. Measures of success for each individual project or activity in the plan are required to monitor overall success of the recovery.

### PEOPLE

Overall population in 2015 is consistent with the 2010 census data plus a growth based on historical and current local and provincial rate information.

### ENVIRONMENT

Environmental parameters water and biodiversity monitoring show that there have been no long-term adverse impacts to the region due to the flood. Full sustainable water supply is available to Black Diamond by May, 2014.

### RECONSTRUCTION

All destroyed or damaged structures are being rebuilt, and growth rate for the community has been re-established.

### ECONOMY

Employment rate - Regional employment in 2015 is consistent with local historical and overall provincial rates.

## 9.0 Recovery Plan Funding

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A plan should be supported to some extent by all levels of government, including municipal, provincial and federal; not for profit organizations; and support through donations from individuals, agencies and businesses.

The federal government will fund some aspects through the Disaster Recovery Program (DRP), and other aspects through special programs or financial approvals.

The Provincial Government will fund flood mitigation projects through the Flood Recovery Erosion Control (FREC) program.

Insurance is expected to cover some or all of the damages to buildings owned by the Town of Black Diamond, including the Water Treatment Plant, Fire hall and Campground buildings.

**Southern Alberta Flood Response Program:** The province has provided funding assistance for additional staff during the flood recovery process. Project Management services provided by Urban Systems for flood recovery are expected to be covered under this grant.

All designs for projects that are expected to be covered under DRP or FREC programs are to be submitted to the province for review and approval prior to detailed design and construction. Urban Systems and MPE Engineering Ltd. are currently preparing preliminary designs for flood mitigation projects and analyzing the potential financial, economic, environmental and social impacts associated with implementation. Once analyses have been completed, results will be provided to the Town for approval before submission to the province.

## 10.0 Conclusion

Recovery cannot be defined simply by the region's return to pre-disaster circumstances. Recovery is a success when it overcomes the impacts of disasters and re-establishes an economic and social base that will enable future growth. Continued collaboration and support from all stakeholders will be a key enabler of success in the long-term recovery of the Town of Black Diamond.

