



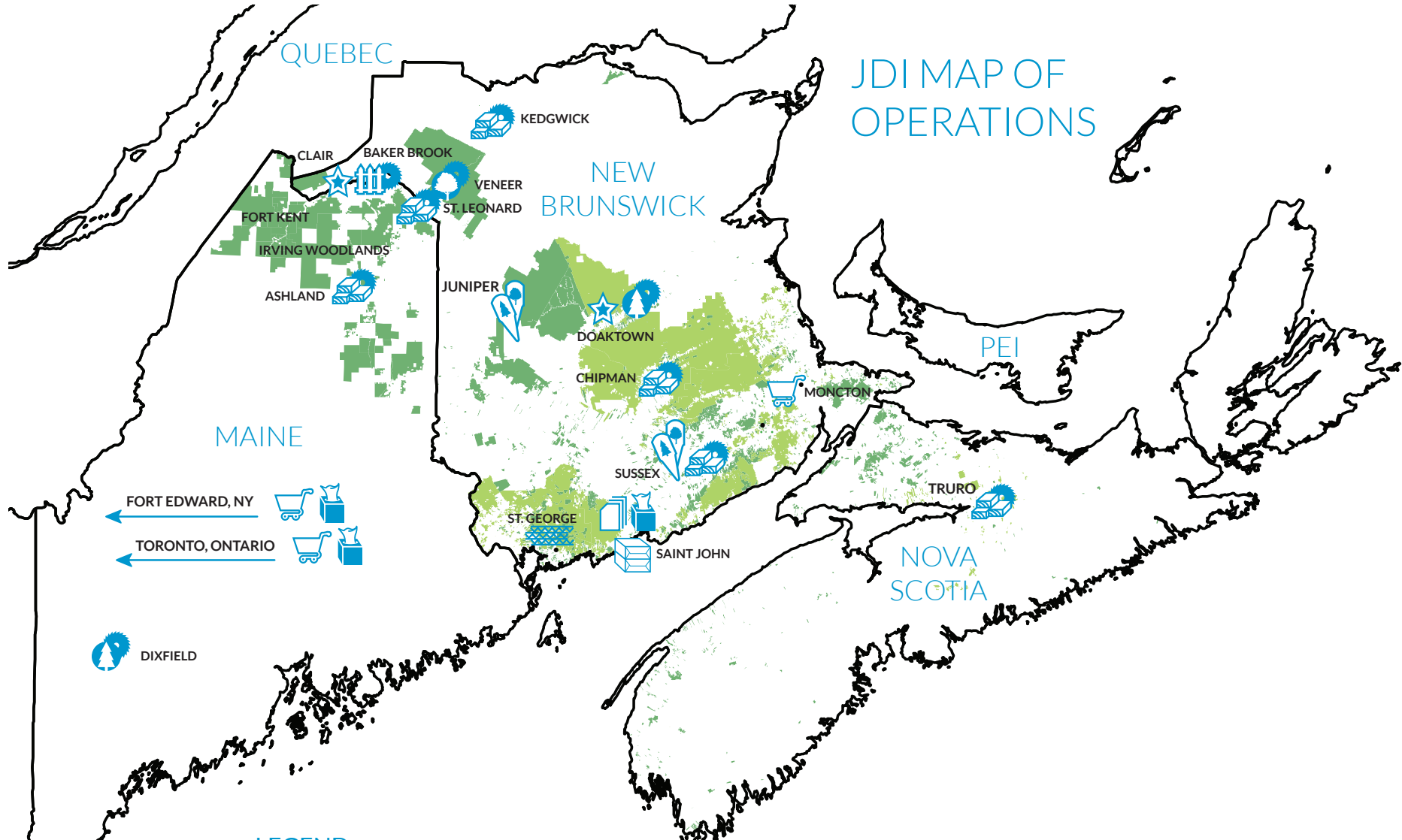
Woodlands Division  
Sustainability Summary

2014



J.D. IRVING, LIMITED  
WOODLANDS DIVISION

# JDI MAP OF OPERATIONS



## LEGEND

FREEHOLD LAND 1,311,540 HA	SAWMILLS	HARDWOOD	WHITE PINE	PULP (NBSK**, NBHK***)	TISSUE
CROWN LAND 1,046,966 HA	SPF* LUMBER	CEDAR	PAPER	CONSUMER PRODUCTS	SPECIALTY WOOD PRODUCTS
TREE NURSERIES	*Spruce Pine Fir **Northern Bleached Softwood Kraft ***Northern Bleached Hardwood Kraft		CORRUGATING MEDIUM		

 <p>SUSTAINABLE FORESTRY INITIATIVE SFI-00032</p>	<p>All forests owned or managed are SFI certified</p>
 <p>FSC www.fsc.org FSC® C041515 The mark of responsible forestry</p>	<p>All Maine woodlands are Forest Stewardship Council® (FSC® C041515) certified</p>
 <p>ISO 14001 REGISTERED</p>	<p>All forests owned or managed and IPP, IPL, ITC (Saint John) &amp; LUP</p>

Our New Brunswick and Nova Scotia owned or managed forests are certified by the Sustainable Forestry Initiative (SFI) while our Maine woodlands are certified to the Forest Stewardship Council® (FSC®) Standard. Our sustainable forest management practices require us to plan and forecast 80 years into the future to responsibly sustain our forests. These forest management plans and practices are applied across all of our owned and managed woodland, both in Canada and the U.S.



# OUR APPROACH TO SUSTAINABLE FOREST MANAGEMENT

## TAKING A LONG-TERM, LANDSCAPE VIEW

Our business begins with the forest. JDI's approach to sustainable forest management (SFM) is based on a long-term planning process that reflects a full life cycle of trees on the land we own or manage. As a company that owns and manages forests as part of our integrated value chain, JDI has been pro-actively embracing the principles and practices of SFM. Today, our commitment is stronger than ever as we continue to invest in expertise and advanced technologies, applying disciplined science to forest modeling and forecasting.

Sustainable forest management at JDI means balancing and managing environmental, social, and economic outcomes in the working forests we own or manage.

Focused on rigorous land management and responsible stewardship, Irving Woodlands is guided by a 100-year Management Plan that preserves the environmental and ecological integrity of our land, air, water, and wildlife. Our team of 150 forestry professionals bring an everyday commitment to ensuring healthy forests - applying disciplined science, advanced technology, and best practices while ensuring accountability through independent audits and environmental certification.

Our approach to sustainable forest management includes:

- Nurseries and seed production
- Tree planting and stand tending
- Planning, modeling, growth, and yield monitoring
- Road construction and maintenance
- Harvesting and transportation
- Wood procurement and sales
- Fish, wildlife, recreational and environmental management
- Wildlife reserves
- Deer wintering areas
- Old spruce/fir habitat blocks
- Vegetation community and successional stages
- Watercourse buffer zones
- Aesthetic buffers
- Voluntary unique and recreational area conservation
- Forest fire and other forest protection activities
- Research, development, and continuous improvement
- Performance measurement and accountability through internal and external audits

## Sustainable Forest Management Planning 80-100 Years Ahead



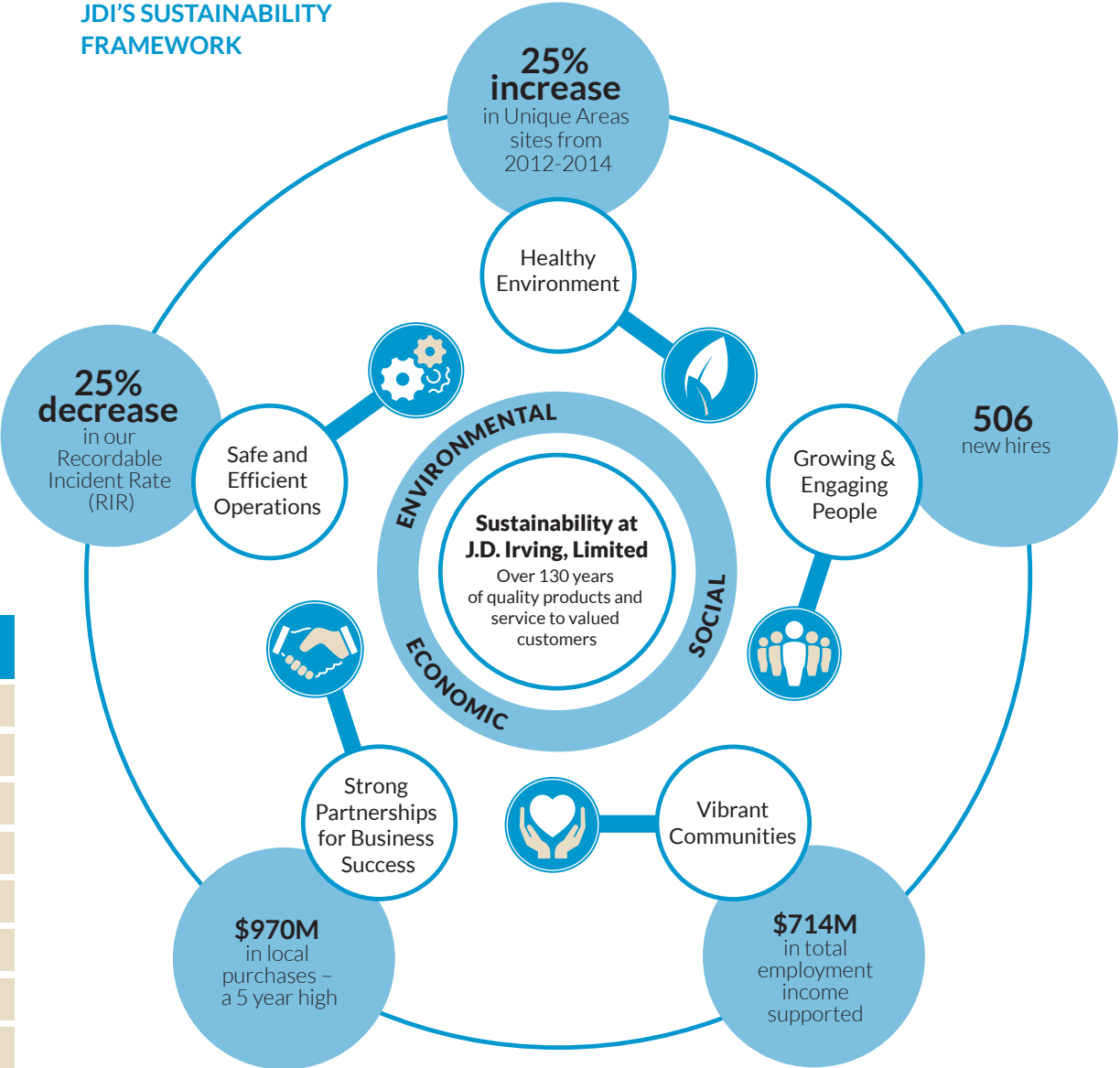
# OUR SUSTAINABILITY FRAMEWORK

## VALUES AND APPROACH TO SUSTAINABILITY

JDI's core values and approach to sustainability enable us to operate at the highest standards and to meet the evolving needs and expectations of our stakeholders. Our sustainability framework consists of five focus areas which provide the structure for communicating our environmental, social, and economic performance.

JDI Core Values
People & Teamwork
Quality Products & Service
Results Driven
Continuous Improvement & Innovation
Integrity
Fast & Flexible
Health, Safety & Environment
Customer Focus

## JDI'S SUSTAINABILITY FRAMEWORK



# PERFORMANCE AT A GLANCE



## HEALTHY ENVIRONMENT

Sustainable harvest levels Crown land .....	M <sup>3</sup> /HA/YR
Actual harvest levels .....	M <sup>3</sup> /HA/YR
Sustainable harvest levels freehold land.....	M <sup>3</sup> /HA/YR
Actual harvest levels .....	M <sup>3</sup> /HA/YR
Total sustainable forest management audit non-conformities ( /143 requirements) .....	#
Greenhouse gas emissions from energy produced on site.....	TONNES CO <sub>2</sub> e
Greenhouse gas from purchased electricity <sup>1</sup> .....	TONNES CO <sub>2</sub> e
Sulphur dioxide emissions .....	TONNES SO <sub>2</sub>
Permit non-compliances .....	#
Water usage .....	M <sup>3</sup>
Unique area sites protected .....	#
Size of unique areas.....	HECTARES
Mapped watercourse buffers.....	HECTARES

2012 2013 2014

	2012	2013	2014
Sustainable harvest levels Crown land .....	1.4	1.3	1.6
Actual harvest levels .....	1.4	1.5	1.4
Sustainable harvest levels freehold land.....	2.2	2.1	2.2
Actual harvest levels .....	2.3	2.1	2.1
Total sustainable forest management audit non-conformities ( /143 requirements) .....	3/143	2/143	2/143
Greenhouse gas emissions from energy produced on site.....	318,872	321,000	350,890
Greenhouse gas from purchased electricity <sup>1</sup> .....	727,784	731,062	741,889
Sulphur dioxide emissions .....	688	1,221	1,469
Permit non-compliances .....	7	1	4
Water usage .....	65,501,158	64,860,806	62,836,364
Unique area sites protected .....	923	1,136	1,155
Size of unique areas.....	80,638	80,933	78,976
Mapped watercourse buffers.....	192,270	192,270	192,270
Total direct energy usage .....	19,772,672	20,075,406	19,969,203
Total waste diverted from landfill.....	76	90 <sup>2</sup>	73
Renewable fuels used.....	60.8	62.6	58.3
Safety recordable incident rate (RIR).....	4.1	4.6	3.4
Lost time accident rate (LTA).....	1.2	1.1	1.0



## SAFE & EFFICIENT OPERATIONS

Total direct energy usage .....	GIGAJOULES
Total waste diverted from landfill.....	%
Renewable fuels used.....	%
Safety recordable incident rate (RIR).....	# FOR EVERY 200,000 HOURS WORKED
Lost time accident rate (LTA).....	# FOR EVERY 200,000 HOURS WORKED

All financial data throughout this report is in Canadian dollars unless otherwise noted.

<sup>1</sup> 2012 and 2013 data has been restated to be comparable to 2014 data using GHG emission factors from the National Inventory Report – GHG Sources and Sinks In Canada 1990-2012, which was released by Environment Canada in 2014. <https://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=83A34A7A-1>

<sup>2</sup> The capital investment made at our Irving Tissue operation in Toronto resulted in a 200,058 tonne increase in our total waste and an overall diversion rate of 90%. Without this one-time construction-related increase, our diversion rate was 81%.



**GROWING & ENGAGING PEOPLE**

Women in executive positions ..... %  
 New hires ..... #



**STRONG PARTNERSHIPS FOR BUSINESS SUCCESS**

Capital investment..... \$ MILLIONS  
 Total local purchases..... \$ MILLIONS



**VIBRANT COMMUNITIES**

Total employment income supported..... \$ MILLIONS

2012 2013 2014

29	27	27
325	372	506
52	244	189
779	965	970
639	674	714

# J.D. IRVING, LIMITED'S FOREST MANAGEMENT STRATEGIES

## NEW BRUNSWICK CROWN FOREST STRATEGY

On March 12, 2014, the Province of New Brunswick announced a new Crown Forest Strategy, "Putting our Resources to Work". In this landmark policy, the Province of New Brunswick identified the forestry sector as a mainstay of the provincial economy, pledging to strategically manage forest land to ensure that "both Crown and private woodlands can support economic development opportunities".

A key goal of the New Brunswick Crown Forest Strategy is to create the certainty of supply needed for industry to invest in its long-term future. With more Crown wood available, JDI has committed to substantial investments in mill modernization and equipment, creating new jobs and securing existing jobs for New Brunswickers. The strategy to harvest more is balanced by a shared commitment to a healthy, vibrant forest with trees at various stages of maturity and with practices that respect the principles of conservation and biodiversity.

### Tracking Performance Against Our Commitments

Addressing concerns expressed by New Brunswickers over transparency, a "results-based" framework was introduced by the Province of New Brunswick to make management practices of the Crown forests more accountable to the public. Additionally,

JDI posted a performance bond guaranteeing its compliance, which will be assessed by a third party.

Our performance is measured annually by independent third parties and will be publicly reported against our 1-year, 5-year, and 25-year management plans. The framework is based around three primary themes; the stewardship

of the environment, supporting a vibrant forest sector, and maintaining social license to operate. It includes seven specific values and related underlying goals and objectives which are listed below. This framework will be used for mandatory public reporting which will begin in mid-2015, after our first full year of operation under the New Brunswick Crown Forest Strategy (April 1, 2014 - March 31, 2015).

## NB FOREST MANAGEMENT FRAMEWORK

Values	Goals
Terrestrial Biodiversity	The full variety of healthy and resilient native forested ecosystems are present and sustainable across their ecological ranges.
	The full range of native forest-dwelling vertebrates are present and sustainable across their ecological ranges.
	Populations of consumptively used wildlife are maintained at desired levels.
Water Quality & Aquatic Ecosystems	The integrity of watercourses and wetlands will be maintained so as to preserve the physical, chemical, and biological properties and functions of these systems in their natural state.
Soil	Harvest and silviculture operations on Crown land will preserve soil function, processes, and health through minimizing disturbance and contamination.
Growing the Resource	Crown forests will be used to sustainably supply timber to NB's forest sector. Forest management will plan harvest and silviculture activities such to optimize the potential economic value of wood fiber from Crown lands.
Optimizing the Value Chain	Trees harvested from Crown forests will be used to provide maximum benefit to the people of New Brunswick.
Access to Crown Forests	Forest road networks will allow traditional non-commercial access to Crown lands.
	Forests surrounding waterways of traditional high-recreational use will be managed to maintain aesthetic quality, user experience, and integrity.
Transparency	DNR, Stakeholders, and members of the public will have access to important information regarding the management of Crown forests.



# HEALTHY ENVIRONMENT

Groups we work with to protect wild Atlantic salmon habitat:

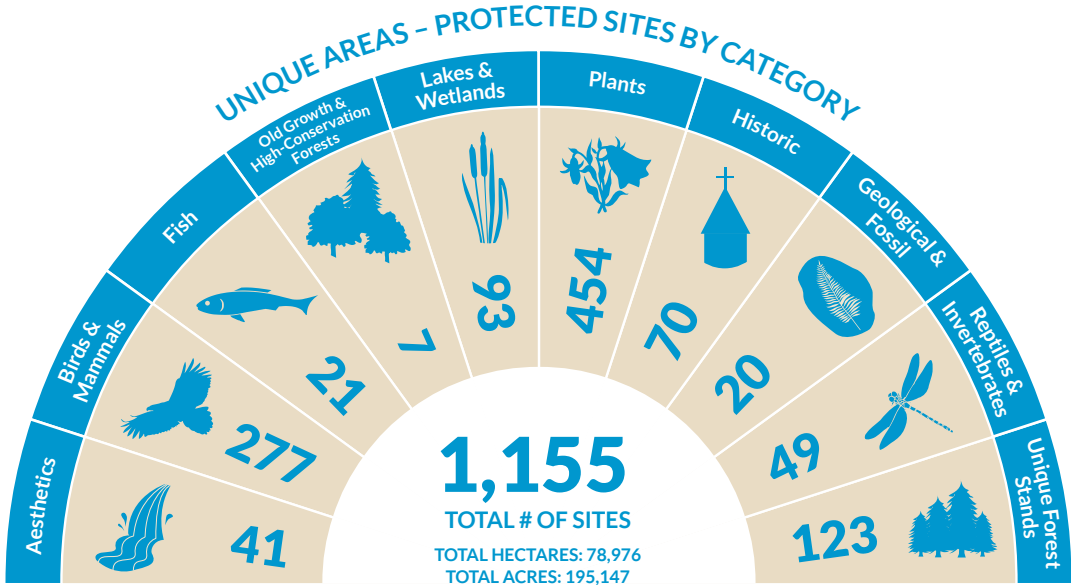
- Atlantic Salmon Federation
- Miramichi Salmon Association
- Canadian Rivers Institute at UNB
- NB Salmon Council
- Restigouche River Watershed Management

## LOOKING FORWARD

We are focused on fulfilling our commitments related to protected areas, conservation, and SFM. We will report on our progress related to these commitments in 2015.

We continue to preserve and enhance biodiversity on our owned and managed land. In 2014, we increased the number of sites we protect to 1,155 as part of our Unique Areas voluntary conservation program - the largest of its kind in Atlantic Canada. While the number of sites increased, the total area decreased as a result of land in Nova Scotia being sold as well as donated to Nature Conservancy of Canada.

Further, in 2014 our Woodlands division dedicated 1,300 hours to biodiversity and conservation-related training including rare plant identification, wildlife conservation, and watercourse buffers.



Additionally, JDI has set an objective to designate and maintain old forest within the working forest landscape – to date, more than 48,434 hectares (119,679 acres) have been designated towards meeting this objective.



## SPOTLIGHT ON THE NB FORESTRY AGREEMENT:

Investing \$513 million in modernization

In Spring 2014, with the certainty of a secure fibre supply, JDI announced \$513 million in major investments to upgrade and modernize our operations, including the largest investment in a kraft pulp mill in Canada since 1993. JDI's investments include:

### IRVING PULP & PAPER MILL (\$455 million):

- \$200 million
  - New chip screening and handling system
  - New continuous chip digester
- \$255 million
  - New pulp dryer

### SAWMILLS DIVISION (\$41.5 million):

- \$23 million
  - New equipment upgrade at Chipman's Grand Lake Timber Sawmill
- \$15 million
  - New sawmill at Doaktown's White Pine Value-added Centre
- \$3.5 million
  - Upgrades to sawmill equipment in St. Leonard and Kedgwick

### WOODLANDS DIVISION (\$16.5 million):

- \$7.3 million
  - Increased silviculture on freehold woodlands near St. Leonard
- \$6 million
  - New forestry equipment in northern New Brunswick
- \$3.2 million
  - New seedling research laboratory at Sussex Nursery

“This investment is a tribute to the everyday skill, passion, and dedication of all employees who help sustain world-class forest products operations from our home here in New Brunswick. The pulp mill is a cornerstone for thousands of jobs – from foresters and woods workers to private wood producers, sawmills, paper, corrugating medium and high value tissue products.”

Jim Irving  
Co-CEO of J.D. Irving, Limited



# SAFE & EFFICIENT OPERATIONS

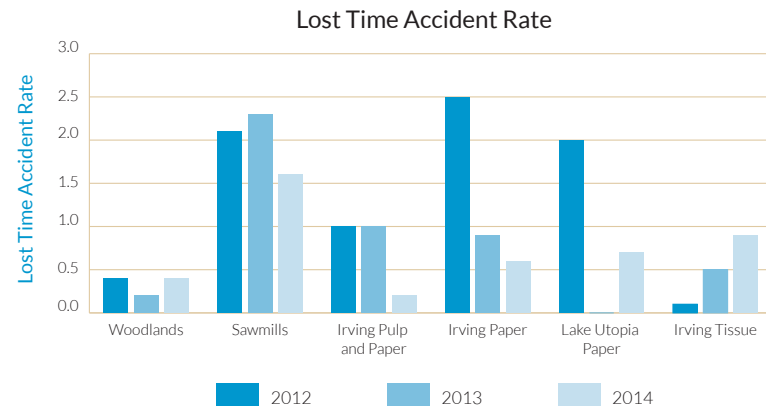
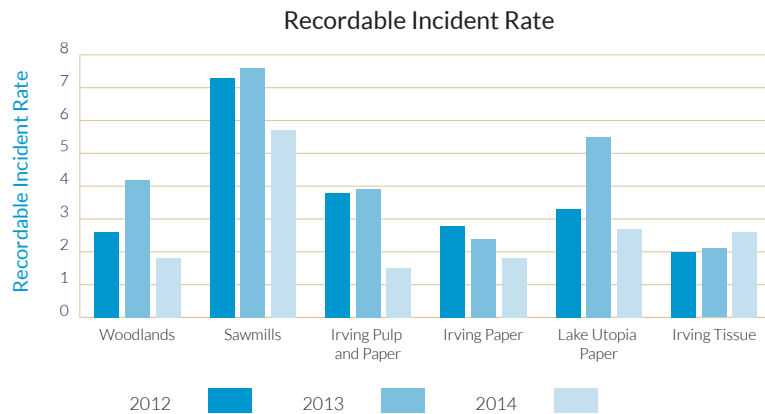
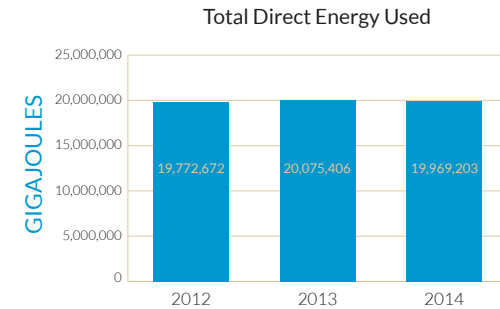
## Basis weight reduction is a win-win for the customer and the environment

At Irving Paper, we are continuously fine-tuning our paper-making process to meet the needs of our customers. Over the past five years, we've been able to reduce our basis weight without sacrificing key quality characteristics like opacity. Today, a 30-pound basis weight roll of paper would stretch 10% further than a roll of 33-pound basis weight. Overall, less weight means less trees, energy, and transportation used in the production of the paper. Imagine the savings of postage cost when mailing inserts, catalogs, and magazines to 20 million households. It's a win-win-win for customers, the environment, and our operations.

## LOOKING FORWARD

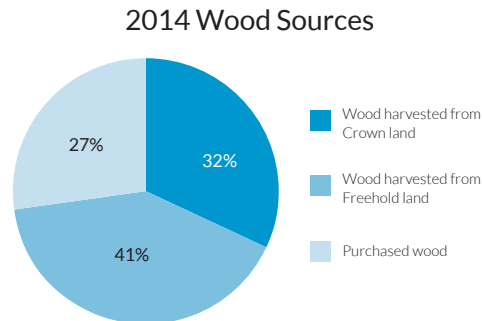
Safety training continues to be a priority in 2015, as we roll out SafeStart® to our other operations. In addition to SafeStart®, we will be implementing increased incident investigation reporting (near misses and root cause analysis) in the year ahead.

As our mill modernizations move ahead, the investment in new technology at Irving Pulp & Paper is projected to reduce energy consumption, GHG emissions, and wood ash generation while further improving our safety performance.



# STRONG PARTNERSHIPS FOR BUSINESS SUCCESS

Our customers value our commitment to research, innovation, integrated solutions, and superior customer service. Investing for the future enables us to build even stronger partnerships with businesses, universities, community organizations, and non-profit organizations.



## PERFORMANCE

Our forestry and forest products divisions depend on the strong relationships we've built with over 1700 suppliers in 250 communities, creating valuable partnerships and a reliable supply chain that benefit our customers. In 2014, total local purchases, including goods and services, wood purchases, and payments to woodlands contractors increased slightly to \$970 million – an all-time high over the past five years. In 2014 we purchased over 1,598,000 MT from private wood lot owners. JDI is the largest purchaser of private wood in New Brunswick.

To strengthen our competitive edge, we invest in our operations when we can and when opportunity arises. In 2013, we invested heavily in our Irving Tissue (Toronto) operations. 2014 was another significant year for capital investment with the beginning of Phase 2 of the pulp and paper mill modernization project, as well as the opening of the Ashland, Maine Softwood Sawmill, for a total of \$189 million.

## KEY INITIATIVES

Continuous product innovation

Our forestry and forest products businesses have an excellent track record of being on the leading edge of research, technology, and product development. This has increased operational efficiencies in the internal value chain and also has created value for our customers. Examples across our divisions include:

### WOODLANDS DIVISION

LiDAR

Seedling research & development

### SAWMILL DIVISION

Latest technology in one mill upgrade (Chipman) and one new mill (Ashland)

New, value added products (animal bedding)

### PULP & PAPER DIVISION

New High Performance (HP) corrugating medium grade developed

New Opulence® SCA++ Paper grade developed

Customer specific customized paper grades with world class technical support

### TISSUE DIVISION

New Through-Air-Dried (TAD) tissue machines

New Velour® brand developed

# JDI FOREST PRODUCTS SCORECARD

JDI forestry and forest products includes Irving Woodlands, Irving Pulp & Paper, Irving Paper, Lake Utopia Paper, Irving Tissue, and Irving Sawmills. It is headquartered in Saint John, NB.

ENVIRONMENTAL	2012	2013	2014
<b>SUSTAINABLE FORESTRY</b>			
Woodlands land base .....	2,388,000	2,375,000	2,358,506
Land base harvested (Crown).....%	1.2	1.1	1.1
Land base harvested (freehold).....%	1.9	1.8	2.2
Trees planted .....	19,161,244	24,802,323	20,462,290
Wood harvested .....	6,744,791	6,297,344	6,315,957
Actual harvest levels (Crown).....M <sup>3</sup> /HA/YR	1.4	1.5	1.4
Sustainable harvest levels (Crown).....M <sup>3</sup> /HA/YR	1.4	1.3	1.6
Actual harvest levels (freehold).....M <sup>3</sup> /HA/YR	2.3	2.1	2.1
Sustainable harvest levels (freehold).....M <sup>3</sup> /HA/YR	2.2	2.1	2.2
Average annual growth of the forest .....	2.2	2.1	2.2
Mapped watercourse buffers (total).....	192,270	192,270	192,270
Watercourse distances under management (total).....	27,422	27,422	27,422
Ability to successfully reforest (tree planting - second year survival rates) .....	91	91	85
Total forest management audits .....	3/143	2/143	2/143
Stream crossings.....	100	100	100
<b>BIODIVERSITY</b>			
Volunteer conservation areas on JDI land.....	80,638	80,933	78,976
<b>WATER</b>			
Water usage .....	65,501,158	64,860,806	62,836,364
Biological oxygen demand (BOD).....	3,666	4,148	4,023
Total suspended solids (TSS).....	6,201	6,909	7,129

# JDI FOREST PRODUCTS SCORECARD

	2012	2013	2014
<b>SOLID WASTE</b>			
Total waste..... TONNES	132,135	341,746	148,288
Landfill .....%	24	9	27
Waste diverted (recycled or reused).....%	76	90	73
Hazardous waste .....%	0.08	0.08	0.23
<b>AIR EMISSIONS</b>			
NOx (oxides of nitrogen)..... TONNES	1,481	1,459	1,512
SOx (oxides of sulfur) ..... TONNES	688	1,221	1,469
Dust Total Particulate Matter (TPM) ..... TONNES	2,387	2,442	2,780
<b>CLIMATE CHANGE</b>			
Total GHG emissions (direct & indirect) ..... CO <sub>2</sub> e (carbon dioxide equivalent) TONNES	1,262,020	1,257,292	1,092,780
<b>ENERGY</b>			
Total energy used ..... GIGAJOULES	26,177,893	26,453,528	26,596,816
Direct energy (produced on site) ..... %	76	76	75
Purchased electricity ..... %	24	24	25
Renewable fuels ..... %	57	59	58
Nonrenewable fuels ..... %	43	41	40
<b>ENVIRONMENTAL COMPLIANCE</b>			
Odour complaints..... #	16	13	36
Permit non-compliances..... #	7	1	4

# JDI FOREST PRODUCTS SCORECARD

SOCIAL	2012	2013	2014
Number of employees .....# FULL-TIME EQUIVALENTS	3,850	4,033	4,185
Recruitment .....% OF EMPLOYEES JOINING THE COMPANY	8.4	9.2	12.1
DIVERSITY			
Women in the workforce .....%	16.3	13.8	12.0
Women in executive positions .....%	29.3	27.0	27.0
HEALTH AND SAFETY			
Fatalities ..... #	0	0	0
Recordable incident rate...# OF RECORDABLE INCIDENTS X 200,000/TOTAL HOURS WORKED	4.1	4.6	3.4
Lost time accident rate.....# LOST TIME ACCIDENTS X 200,000/TOTAL HOURS WORKED	1.2	1.1	1.0
ECONOMIC BENEFIT			
Capital investment..... \$ MILLIONS	52	244	189
Total local purchases <sup>1</sup> ..... \$ MILLIONS	779	965	970
Total employment income supported ..... \$ MILLIONS	639	674	714

<sup>1</sup> Includes good and services, wood purchases and payments to woodlands contractors