# Aggregates in Our Lives

# What is Aggregate?

Aggregate is stone, sand and gravel used in construction and products in everyday life. It is used in everything from the buildings we live and work in, to the toothpaste we use daily. Aggregates are the foundation of our economy - an impressive contribution for something as small as a grain of sand.



Aggregates are only found in places where nature put them. When solid rock material is extracted for aggregate it is called a quarry. **Pits** are located in areas where glaciers left deposits of sand and gravel. Pits and quarries operate above and/or below the groundwater table. 

# Where Does Aggregate Come From?







# Aggregates in Our Lives

### **Gravel Facts**

- each day.

### Stone, Sand & Gravel Economics and Jobs

### **Protecting the Environment**



### **Aggregate Use in Numbers**

• The average brick home requires 250 tonnes of aggregate (12 truckloads). • The average school needs 13,000 tonnes of aggregate (650 truckloads). • One kilometre of a six-lane road uses 51,800 tonnes of aggregate (2,590 truckloads). • One kilometre or a subway needs 91,200 tonnes of aggregate (4,560 truckloads).

> • 90% of all aggregates are used within 80 km of where they are produced. • In Ontario, 745,454 tonnes of stone, sand and gravel are delivered to job sites

• The industry contributes \$1.6 billion to Ontario's GDP.

• Virtually every job and every home in Ontario relies on stone, sand and gravel. • Annual contribution of aggregate to the Ontario GDP \$1.6 billion.

• The aggregate industry creates 7,000 direct jobs and 34,000 indirect jobs.

• Approximately 4 additional jobs created for each quarry job in related fields: environmental consultants, equipment manufacturers, and more.

• Aggregate industry is one of the cleanest, and highly regulated industries in Ontario. • 25 pieces of legislation protect environment and future resources.

• Producers often go beyond requirements to protect wildlife.

• 293+ hectares of aquatic habitat created in rehabilitated pits and quarries.

• 1000+ hectares rehabilitated to nature, agricultural and recreational use each year.







# Where is Aggregate Used?

### Discover how stone, sand and gravel are used in rural, urban and suburban environments with the infographics below



### **Rural Environment**



#### RECREATION:

- Gravel on baseball diamonds
- Gravel or sand in playgrounds
- Sand for sand boxes

#### Skateboard and bike parks

Bike and walking trails

#### **PAVED ROADWAYS &**

**EXTERIOR INFRASTRUCTURE:** 

Paved driveways

Paved parking lots

• Curbs in parking lots, driveways and on roads Street lamp bases



 Concrete tunnels and platforms Gravel around tracks

that enters building is filtered through system that uses aggregate

#### bed below building, including bedding and fill for water, sewer and storm drain pipes

#### **ROOFING MATERIALS:** • Tar roof with stone laver

#### WINDOWS: Glass in buildings, cars,

subways, etc.

#### **BUILDING INTERIOR** (CONSUMER PRODUCTS):

- Glassware
- CorningWare
- Ceramic plates, vases, etc. • Clay in porcelain for sinks
- and toilets
- Tiles for bathroom and kitchen
- Glass in mirrors
- Cosmetics Toothpaste
- Paint
- Cleaning agents
- Paper
- Chewing gum
- Aggregate used to produce plastic and vinyl products

#### HARDSCAPING:

- Decorative armour stones
- Stone retaining walls for gardens
- Water features
- Stone and concrete walkways and paths
- Clay pots for plants

#### **BUILDING STRUCTURE**

#### (CONCRETE AND BRICK):

- Building foundation Exterior brick or
- concrete blocks
- Mortar
- Columns
- Underground parking lots Concrete roof
- Balconies
- Floors
- Interior walls
- Drywall (gypsum) Fiberglass insulation (sand)

## **Urban Environment**



- WATER: enters building is
- filtered through a purification system that uses aggregate





#### **RECREATION:**

 Concrete for swimming pools • Sand boxes and sand under swing set

#### FIREPLACE (STONE OR BRICK):

- Chimney Interior fireplace facade
- Mantle

# HOME STRUCTURE **BUILDING BEDDING:** Building foundation Municipal water that Compacted gravel

- bed below building, including bedding and fill for water and sewer pipes
- Bricks & mortar, stone,
- and/or stucco exterior Concrete block support
- walls in basement Fiberglass insulation (sand)
- Drywall (gypsum)

#### **ROOFING MATERIALS:**

• Asphalt shingles (includes filler plus grit on surface)

#### WINDOWS:

• Glass in buildings, cars, subways, etc.

#### **PAVED ROADWAYS & EXTERIOR INFRASTRUCTURE:**

#### Paved driveways

- Paved parking lots for business and retail
- Curbs in parking lots,
- drivewavs and on roads Sidewalks
- Storm drains
- Street lamp bases

#### HOME INTERIOR

- (CONSUMER PRODUCTS):
- Glassware
- CorningWare
- Ceramic plates, vases, etc. • Clay in porcelain for sinks
- and toilets
- Tiles for bathroom and kitchen Glass in mirrors
- Cosmetics
- Toothpaste
- Paint
- Cleaning agents
- Paper
- Chewing gum
- Aggregate used to produce plastic and vinyl products

#### HARDSCAPING:

- Decorative armour stone
- Stone retaining walls for gardens
- Water features and fish ponds Stone or concrete walkways
- and paths Clay pots for plants
- Concrete to anchor fence posts and deck structures

### Suburban Environment

Source: Ontario Stone, Sand & Gravel Association – www.GravelFacts.ca