

Appeal No. CA 019-92

L. Kamerman)
Mining and Lands Commissioner)

Tuesday, the 24th day
of May, 1994.

THE CONSERVATION AUTHORITIES ACT

IN THE MATTER OF

An appeal to the Minister under subsection 28(5) of the Conservation Authorities Act against the refusal to grant permission to alter an existing watercourse on Lot 50, Plan 65M-2730, Part Lot 4, Concession III, Town of Newmarket.

B E T W E E N :

A REISSING-REISSING ENTERPRISE LIMITED

Appellant

- and -

LAKE SIMCOE REGION CONSERVATION AUTHORITY

Respondent

ORDER

WHEREAS an appeal to the Minister of Natural Resources was received by the tribunal on December 18, 1992, having been assigned to the Mining and Lands Commissioner (the "tribunal") by virtue of Ontario Regulation 364/82;

AND WHEREAS a hearing was held on February 14, 1994 in the Holland Room West, Town of Aurora Offices, 100 John Way West, in the Town of Aurora, in the Province of Ontario;

UPON hearing from the parties and reading the documentation filed;

1. THIS TRIBUNAL ORDERS that the appeal from a refusal of the Lake Simcoe Region Conservation Authority to issue permission for the alteration of an existing watercourse on Lot 50, Plan 65M-2730, Part Lot 4, Concession III, Town of Newmarket is hereby dismissed.

2. THIS TRIBUNAL FURTHER ORDERS that no costs shall be payable by either party in respect of this appeal.

Reasons for this order are attached.

DATED this 24th day of May, 1994.

Original signed by L. Kamerman

L. Kamerman
MINING AND LANDS COMMISSIONER.

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REASONS

Sitting in the Holland Room West, Town of Aurora Offices, 100 John Way West, in the Town of Aurora, in the Province of Ontario, on February 14, 1994.

Appearances:

Jurgen Reissing Principal of A Reissing-Reissing Enterprises Limited

Kenneth C. Hill

Counsel for Lake Simcoe Region Conservation Authority

Preamble:

The appeal before the tribunal is from a refusal of the Lake Simcoe Region Conservation Authority (the "Conservation Authority") to grant permission to alter an existing watercourse on Lot 50, Plan 65M-2730, Part Lot 4, Concession III, Town of Newmarket ("the site"). The application (Ex. 1) for the alteration of an existing watercourse was made by Jurgen Reissing, a principal of the appellant, on September 11, 1989. A hearing was held before the Conservation Authority's Executive Committee on September 11, 1992, where the Executive Committee resolved that it would not grant permission.

An appeal pursuant to subsection 28(5) of the **Conservation Authorities Act** is to the Minister of Natural Resources. The Mining and Lands Commissioner (the "tribunal") is appointed by virtue of subsection 6(1) of the **Ministry of Natural Resources Act**. The Minister's authorities, powers and duties are assigned to the tribunal by Ontario Regulation 364/82. Pursuant to subsection 6(6) of the **Ministry of Natural Resources Act**, Part VI of the **Mining Act** applies to the hearing of appeals, with necessary modifications.

Background:

The site is located within an industrial subdivision, fronting on Kerrisdale Boulevard with Harry Walker Parkway running alongside immediately to the west. At the rear of the site is an open channel which is part of an engineered channel to convey flows of a tributary of the Holland River.

The purpose behind Mr. Reissing's application is to pipe the water flowing through the open channel to create more room for parking.

Witnesses:

Jurgen Reissing gave evidence on behalf of the appellant. He purchased his property, which is part of the Steeles-Jane Industrial Subdivision, in May or June of 1989. He intended to develop a multi-unit industrial condominium containing 11 units.

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He had originally intended to use one and sell off the remainder. However, now three units are for a bearing and supply company. Two units will be used by Reissing. The rest are idle.

Mr. Reissing does not dispute that an existing watercourse was altered through a series of storage channels and piped watercourses to facilitate the construction of the subdivision. However, he was not aware of this at the time of his purchase. Nor was he aware that one of the open channels would be contained in an easement along the south end of his property.

Mr. Reissing stated that at the time he viewed the property prior to its purchase, construction of the engineered channel had not begun and the whole of the property was flat. He put a deposit on the land and signed the papers. It was only when he observed a machine digging a ditch some two weeks later that he realized there might be a problem with the ditch.

Simultaneous with his purchase, Mr. Reissing commissioned plans for his development, intending that once the transfer had been completed, all of the necessary documents for the site plan and subdivision approval could be submitted immediately. When he became aware of the easement, his architect advised that the channel could be piped.

Mr. Reissing retained the services of Bryan Thomas in August, 1989, to attempt to find a workable solution. Based upon Mr. Thomas' calculations, revisions were made and calculations performed which resulted in the loss of only two parking spaces from his original plans. The revised plans were submitted to the city engineers in Newmarket for approval, which was given, subject to the approval of the necessary authorities, meaning the Lake Simcoe Region Conservation Authority.

The watercourse easement is 7.2 metres plus a buffer between the pavement. The channel is open to within 10 metres of the Harry Walker Parkway, where it becomes enclosed in order to flow under the road. His proposal is to extend this closed channel an additional 65 metres, so that it would be enclosed along the entire south end of his property. If the channel were permitted to be enclosed, Mr. Reissing stated that he could use his land to its fullest. The purpose of his application is to utilize all of his property, including eight percent which is currently ditch.

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As matters now exist, a piece of land 7.2 metres by 65 metres, or 23 feet by 213 feet currently collects water and traps debris. The opening to the enclosed pipe currently clogs up, causing flooding to his parking lot. The open channel traps a lot of garbage, much from a styrofoam factory. There are also plastic vapour barriers from construction site and coffee cups. Holes had to be punched in the plastic so that water could resume its flow. Mr Reissing indicated that there has not been a lot of construction in the area over the last two years and agreed that debris in the channel would be less of a problem when the construction is completed. However, the styrofoam continues and another mail sorting plant has cardboard packaging which blows in the wind.

Mr. Reissing stated that he was not satisfied that the decision reached by the respondent was logical in looking at the problem. He referred to the reasons given for refusal (Ex. 5, Schedule B), which is reproduced:

The Executive Committee felt that your proposal to enclose the watercourse would substantially reduce the carrying capacity of this channel. As indicated to you at the Executive Committee meeting, this channel has been designed as part of the overall storm water management plan. This open channel alternative was adopted by the Conservation Authority since it maintained continuation of the watercourse with a reconstructed channel at a location reasonably close to the original location. This open channel provides the required storage of water within this industrial subdivision to reduce post development peak flows to the predevelopment level and thereby prevents increased flooding downstream. The enclosure of the watercourse at the south limit of this lot for an increased parking area would create a loss of this storage and cause a back-up of water in the channel upstream to the east since this watercourse conveys the flows through the subdivision from the undeveloped area immediately to the east.

In Mr. Reissing's opinion, the statement that the enclosure of the channel would create a loss of storage capacity seems contradictory to him and he felt that the reasons given were not of significance. He submitted that the Conservation Authority knew of the consequences of its refusal, which resulted in his having to redesign the site plan which caused a one year delay in construction of the buildings.

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Under cross-examination, Mr. Reissing confirmed that his development was redesigned as a result of the refusal, with the building having been constructed further to the north. In light of this change, his current intent is to use the area over the enclosed channel as parking. Then he could offer indoor and outdoor storage. The outdoor storage could be used for items such as boats, and would be located beside the building, which currently is the parking area.

Asked to explain what he felt was contradictory about the letter explaining the reasons for refusal, Mr. Reissing disputed that enclosing watercourse would reduce carrying capacity. He stated that the water is currently stored in the parking lot.

Mr. Hill suggested that the channel has two functions, to carry water through the subdivision and to store water if the capacity of the channel is exceeded during a storm event. Mr. Reissing suggested that a piped channel would do the same thing, and asked that engineering questions be put to his engineer, Mr. Thomas.

Asked to describe the channel, Mr. Reissing stated that it does not have vegetation present until after winter. Then it becomes a jungle. The main concern in the vicinity is of an adjacent property owner, which manufactures chocolate bars and does not wish animals to burrow into the growth along the channel.

Mr. Reissing stated that he has not noticed deposition of silt, although he did notice the rip rap stone which had been placed as part of the original construction, which Mr. Hill suggested had been placed to slow erosion.

Under redirect, Mr. Reissing stated that, as the watercourse is already at least partially enclosed on his property, it should be allowed to be completely enclosed. The enclosed channelization continues some considerable distance to the west, perhaps 1/2 mile, and then again to the north where it exits into an open detention pond.

Bryan Thomas, P. Eng., specializing in municipal engineering for residential and industrial subdivisions, plans of subdivision and storm water management, gave evidence on behalf of the appellant. He stated that his firm was approached by Mr. Reissing in mid-1989 with a view to looking at the watercourse to see how he could make calculations for the town to provide same capacities for flow and storage as were handled by the open channel. He investigated the 5 year and 100 year storm events.

Mr. Thomas referred to the original design of the storm water management system, as set out in the "Functional Report", of the Steeles-Jane Properties Inc. Industrial Subdivision, prepared by Cole Sherman & Associates Ltd. in February, 1988 (Ex. 8). According to this, the enclosed channel which flows under Harry Walker Parkway would accommodate flood flows in a 5 year storm. Making the assumption that flood flows in excess of the 5 year flood would have been stored within the car park, Mr. Thomas calculated the volume of flood flows which would be displaced by enclosing the channel.

In his calculations, Mr. Thomas used the same size pipe as the one which conveys flows under the road immediately west. Considering the size of the channel and amount of ponding available to the channel, the required capacity for flooding to replace the open channel would be limited by the height of the road. In other words, the same amount of flooding which would have occurred and been contained upstream of the road at an elevation which does not exceed that of the road. Mr. Thomas stated that the difference in flood elevations between the 5 and 100 year flows in his proposal would be stored in the parking lot.

Currently, the intake structure is found on the west side of the subject lands. The application proposes to move this intake structure by transferring it from west of the property to the east limit of the property. The resultant ponding which would occur would be located east of the new intake structure and would be equivalent in amount to the ponding which is currently within the channel on the Reissing property.

Mr. Thomas stated that, through cooperation with the Conservation Authority, a safety feature offered by the application could provide more capacity for ponding than before. The level to which he will pond is that of the street. Anything more than a 100 year storm will overtop Harry Walker Parkway, and flow into the detention pond to the west. Depending on figures to be agreed upon by the Conservation Authority and the Town of Newmarket, Mr. Thomas feels that his design could provide greater capacity to store floodwaters than currently exists. It should also be noted that the design of the ponding is such that it is away from the channel, further to the north on the Reissing property.

Under cross-examination, Mr. Thomas stated that his firm does not specialize in hydrology, which must be done by a larger company having access to sophisticated computers and modelling.

Giving the background for his study of the site, Mr. Thomas stated that he took the low flow equalling the piped flow from Cole Sherman design. Using the same 825 mm pipe as was used at the west end of the property, the proposed enclosed channel would see the same size pipe used at the same elevation. This would be sufficient to capture the 5 year storm. Both the Cole Sherman design and his own proposal would have the same proportion of the 100 year storm contained within the channel itself.

Mr. Thomas stated that he did no calculations to determine the impact of moving the pipe, but stated that it is logical to assume that it would be less by cutting out the flow along the piped land. When asked whether Mr. Reissing's land would also have to flow into the storm pipe, Mr. Thomas responded that he believes these lands drain into the road at the north end of the property. Mr. Thomas estimated that the same flows would likely be found flowing into the pipe, whether they are measured at the west side of Reissing's land, as currently exists, or at the east side if the piping were allowed, within a certain margin of difference.

Mr. Thomas confirmed that he had a crew do site elevations on the property in and around the channel itself, allowing him to estimate how much water would be ponded in the channel in excess of the 5 year storm flood waters. Using a theoretical elevation of the streetline, the length and elevations of the channel were used to calculate the volume of flood waters which would be stored in the open channel.

The flood waters of a storm greater in magnitude than the 5 year storm would have to go somewhere while waiting to abate. If one looks at the 100 year storm, it is clear that the difference cannot be detained in the channel. For example, from the 5 to 100 year storms, using a width of 7.2 metres, and depths from the invert of the pipe to the street level, the area described would provide some storage capacity during a storm but Mr. Thomas was not sure how much of a 25 year, a 100 year or a regional storm would be captured.

Mr. Thomas agrees that some of the storage capacity offered by the channel would be lost by putting in the proposed parking lot. However, his design would allow the water to go elsewhere.

Mr. Thomas could not estimate the extent of ponding behind current intake. He once again described the method for its calculation, stating that one uses

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the street level elevation and the invert of the existing enclosed channel, and calculate volume moving back along the open channel. The elevation of the street level is approximately 273 metres, or more accurately 272.99 metres. This delineates the maximum potential height of flood waters. At the other end of the property, one uses the inverts of the channel and transposes it along the grade. In theory, this could extend beyond the Reissing property to adjoining property. Mr. Thomas stated that he made the assumption that the storm capacity was designed to be contained in the channel itself, and then flow over the Harry Walker Parkway. That is how he would design it, and assume it was designed that way.

Asked why he used the 100 year storm, Mr. Thomas stated that he had calculations which show the 100 year storm, which is known to overtop Harry Walker Parkway, so he did not feel there was any need to show that the regional storm would overtop as well. It is his understanding that this was part of the design of the storm water system.

Mr. Hill pointed out that Mr. Thomas' proposal would involve situating some of the resultant ponding on Mr. Reissing's parking lot and some of the property to the east. Mr. Thomas stated that he had performed no calculations for the property to the east, the elevations of which were looked at and found to be slightly higher than Reissing's. Therefore, the channel would have less storage capacity as one moved east from Reissing's property. Mr. Thomas agreed that the amount of ponding on the property to the east could be calculated, but he had not done so.

Turning to the parking lot, Mr. Hill suggested that the whole 25 feet would be ponded to building itself, bearing in mind that the site plan is not one looked at when these calculations were made. A storm in excess of 5 year would result in flooding in the parking lot, depending on the intensity of the storm. Asked whether he calculated the flood levels, Mr. Thomas stated that 273.7 metres is the maximum height of the flood. He did not agree that everything below that level to the east would be flooded, as this would only have been the case before the site for the building was moved north. With a 25 foot set back, the equivalent amount of flooding could be kept within that area before the road overtops. Mr. Thomas reiterated that the 100 year storm would never be kept on the site.

Looking at the lower right corner of the plan (Ex 4), where a set back of 8 metres is shown, with the new location of the building it is now something in excess

of 45 feet, or 20 metres more. The 100 year storm indicated a certain volume that had to be contained. All of the car parks were used for storage plus available detention capacity on the roof itself.

Mr. Hill asked whether it was safe to say that in providing that the storage lost by filling in the channel has been compensated for within the property, a grading plan would have been required. Mr. Thomas agreed that it would have, but as the application was turned down, he did not do it.

Since he built the building to the north of its original site, and Mr. Thomas was not responsible for on-site grading, he stated that he was not in a position to state that as site exists today, there is ample storage capacity on site.

Referring to the bottom of page 5 of the Andrew Brodie Associates Inc. Functional Report (Ex. 8), Mr. Hill quoted the following:

For the open channel alternative, a 22 metre easement is required. The easement will be located at the rear of lots 31, 32 & 33. Two culvert crossings are required at Streets 69 and 68. For the box culvert alternative, an 8.0 metre easement is required (see Plate 14).

It is recommended that the open channel alternative be adopted as it will maintain continuation of the watercourse with a re-constructed channel at a location reasonably close to the existing location and will provide a vegetative buffer strip to contain the watercourse.

Mr. Hill asked, in reference to the vegetative buffer strip, whether it was reasonable to take water quality into account. He suggested that the open channel provides opportunity for silt to be contained, rather than lost. All of these are given with an open channel, but would not be the case with a pipe. Mr. Thomas agreed that this would be the case only until rip rap becomes full, when it should be dredged.

Mr. Hill suggested that it would be possible to continue the piping of the watercourse along the properties to the east. Mr. Thomas responded that the property owners might be interested in applying for similar permission for piping.

Daniel Clemmens Frank, a Regulation Officer with the Conservation Authority, described the drainage pattern in the vicinity of the property. On the Ministry of Natural Resources 1983 Base Map (Ex. 14), the watercourse in question is shown by a solid line and identified in blue. The location of the subject property is identified in red.

Mr. Frank explained that the watercourse is now enclosed as it moves under Harry Walker Parkway and then north to Kerrisdale Blvd. (identified as Street No. 69 on Plate 7 of Ex. 8), where it flows west through an enclosed channel. He indicated that it flows north along an open channel, under Ringwell Drive (shown as street 68 on Plate 7, Ex. 8) to a detention pond. From there, it is open and flows northwestward to the Holland River. The water eventually drains into Lake Simcoe.

Mr. Reissing's property is within an industrial subdivision which has as its storm water management system a complex of what Mr. Frank described as being comprised of a minor drainage system through enclosed pipes and a major drainage system being a combination of open channels and overland flows. Mr. Reissing's land is adjacent to both the minor and major systems, as is evident from the open channel which is the subject matter of the appeal and the enclosed channel which extends ten metres onto the Reissing land and conveys the watercourse under Harry Walker Parkway. Mr. Frank stated that he is familiar with the site, having conducted inspections during the construction of the subdivision.

Mr. Frank referred to two photographs (Ex. 16A and 16B, respectively). The first is a view looking west on September 22, 1989 toward the Harry Walker Parkway. According to Mr. Frank, the raised catch basin can be seen in the distance. The second shows the same channel looking eastward, taken while standing on Harry Walker Parkway. Mr. Reissing's property can be shown on the north side of the photograph and the left side of channel. Although he could not recall the exact date, Mr. Frank stated that it was taken when the channel had been recently constructed. The building on the subject lands was constructed more than a year ago.

Mr. Frank stated that the parking lot had been paved, and he could not recall seeing much vegetation growing in the open channel. In his opinion, the storm water management system appeared to be functioning as intended.

Asked to discuss his concerns regarding proposed works, Mr. Frank stated that during the design and construction of the subdivision, every attempt was made to

allow the watercourse to remain as close as possible to its original location. The reason for his opposition to the application is that any departure from the original design would negatively impact on the function of the open channel, that of trapping sediment and pollutants.

Under cross-examination, Mr. Frank explained that the original design in 1989 contained the extent of open channels that it did in response to the Conservation Authority's concerns of the time. However, if the same project were to proceed today, the authority would be seeking to have a greater proportion of open channels due to the benefits provided for filtration of pollutants and prevention of siltation. Today engineered crossings would still be allowed, as long as they do not contribute to flooding. He acknowledged that the Conservation Authority could only play a limited role in overall design where control of flooding is not an issue. The Conservation Authority went as it could in preserving an open design in the development.

Through questioning, Mr. Frank agreed that a natural watercourse does not have rip rap and that some silt would be naturally washed away.

The Conservation Authority had been opposed to piping the whole watercourse due to the detrimental impacts. It is also concerned about the precedent which allowing this application would create. Asked whether there was a cut off set between piping and open channel, Mr. Frank stated that the design as it was finally implemented does exactly that. The Cole Sherman study was the rationale for the cut- off.

Asked about the concern regarding vegetation and buffering, Mr. Frank indicated that page one of the study does indicate buffering advantages. He indicated that, if the development were to go ahead today, the conservation authority would go further with a review on water quality impact than it had done in 1989.

Mr. Reissing suggested that a concrete pipe does not contribute to erosion further down and would give some benefit to either system. Mr. Frank explained that the disadvantage of piping the entire watercourse is the loss of filtering capacity, which can only be done through open channels throughout the watercourse. To pipe the whole system would result would be one big flushing of the area, the impacts of which would be extreme.

Asked how often the rip rap should be cleaned out, Mr Frank indicated, as needed. He was not aware of anything being cleaned out. If the inlet is blocked, should be removal of inlet. If the sedimentation fills the rip rap, Mr. Reissing suggested that the design would be affected, thereby removing any flood design benefits. Mr. Frank stated that over time, sediment deposition will cause a natural rooting of vegetation, which would be beneficial.

Mr. Frank reiterated that today one would see a further limitation on the extent to which an enclosed engineered channel would be allowed. In the Cole Sherman Report, it was suggested that there is some benefit to retaining an open channel as opposed to piping the entire watercourse.

Asked about the impact on others along the open channel, Mr. Frank expressed his concern that if Mr. Reissing were allowed to pipe his portion of the channel, the conservation authority could not be prevented from allowing other such applications. If one were to be allowed, the Conservation Authority would have a difficult time making its case in front of the tribunal for refusing a subsequent application. He maintained that the impact of potential loss of all of the open channel would be a factor.

On re-direct, Mr. Frank explained that the Conservation Authority is concerned with the precedent and cumulative effect. The design accepted by the Conservation Authority was the Cole Sherman design. If it is altered through one application then there is no longer a rationale for refusing other applications. Also, the control of flooding will be affected, and there would be an impact on pollution, through the loss of opportunities for sediment to be trapped and filtration to occur in the channel.

Thomas George Hogenbirk, P. Eng. has been employed by the Conservation Authority since September, 1993. His areas of expertise are hydraulics and hydrology, computer modelling, water and floodline analysis for industrial, commercial and residential plans of subdivision.

Mr. Hogenbirk stated that he reviewed the documents filed with the appeal and had two main concerns, being the control of flooding and the impact of enclosing the watercourse. He stated that nothing in Mr. Thomas' calculations is designed to examine the impacts on upstream flood levels, and whether they will be increased by significant amounts. The benefits of an open channel are seen as a better 13

and more environmentally friendly form of storm water management. Mr. Hogenbirk visited the site in the fall of 1993 and observed heavy vegetative growth, which has a beneficial effect on water quality and preventing sedimentation.

Mr. Hogenbirk explained that the thinking behind storm water management design has changed substantially. As little as eight or nine years ago, it was thought best to direct the water off the streets and into pipes as quickly as possible. Now, thinking has turned to "at source" controls, such as swales and dry wells on the properties being drained. Through the distribution of such controls on site, storm water problems associated with piping necessitating further downstream water treatments can be overcome. Years ago such downstream treatments as marshes were quite common. Now, it is thought to be better to distribute treatment throughout a drainage area, because a system which accepts the pollutant load downstream cannot be used. This new design of storm water treatment can be observed in residential subdivisions as well.

Under cross-examination, Mr. Hogenbirk described potential pollutants of concern being hydrocarbons, sediments and farm chemicals. He is not familiar with the source of water handled by channel and the level of development to the east. However, with the current thinking, it is not automatically assumed that the area surrounding a watercourse will be further developed.

Mr. Hogenbirk explained that fertilizer and manure used in farm fields can be filtered in vegetated swales, the term for which is nutrient uptake.

Referring to the detention pond, which has become a bog, located at the north end of subdivision, Mr. Reissing suggested that it is designed to look after pollutants and provides greater opportunity for nutrient uptake than is required by the subdivision. Mr. Hogenbirk stated that the use of source controls will prevent downstream areas such as the pond from becoming overwhelmed. While he did not feel an extra 65 metres of piping would not be devastating, he believed that it would have an impact. He noted that as piping increased greater impacts would be observed.

Mr. Hogenbirk agreed that greater erosion of the channel would occur with rip rap than with a pipe as any type of silt upstream of the open channel will be flushed. However, the rip rap is designed to minimize erosion and only paving would completely eliminate erosion.

On re-direct Mr. Hogenbirk confirmed that there are intervening industrial properties between the farms and Mr. Reissing's property.

Final Submissions:

Mr. Reissing expressed concern that, at the time his application was made, the issue which resulted in the refusal was one of control of flooding and potential loss of flood storage capacity. He believed that these concerns were addressed with the engineered solution. He pointed out that, along with the piping, he had proposed a grass buffer and planting of trees. As matters currently exist, the channel, through lack of maintenance, does not function properly. There is flooding in front of the intake grate. If he were to be allowed piping, there would not be a need to conduct ongoing maintenance on his property.

With respect to the Conservation Authority's concern about precedent, Mr. Reissing submitted that there already was a precedent set at the west end of the property where the watercourse was piped underground for much further than just under Harry Walker Parkway. Mr. Reissing submitted that the design of the storm water management set the precedent.

With respect to the design of open channels with source control, Mr. Reissing submitted that it should not be the industrial subdivision which should be made to use source controls, but the farmer located upstream who should be forced to deal with the pollutants which are their responsibility. Mr. Reissing submitted that, according to Ontario Regulation 153/90, it should be the responsibility of those creating the problem and not of those whose land the water crosses, to maintain water quality.

Mr. Reissing stated that the he felt the issue of water quality has him at a disadvantage, as it was not raised in the original refusal. The tribunal commented that the witness statements filed dealt with the issues of deposition of silt and filtering capabilities. Mr. Reissing stated that it had not been an issue at the time he made his application. Mr. Hill indicated that he opposed allowing Mr. Reissing further time to prepare on this issue.

Mr. Hill submitted that Mr. Reissing had misunderstood the issues surrounding the benefits of an open channel with aesthetics. Mr. Reissing could plant the area with suitable

vegetation to be less of an eyesore. If Mr. Reissing's concern is one of maintenance, Mr. Hill suggested that an enclosed pipe requires more maintenance than a grate. If the issue is the accumulation of garbage, should he be prepared to spend time, effort and money on landscaping of the easement containing the open channel.

If the problem is one of clogging of the grate, it will not be solved by moving the intake grate to his neighbour's land.

Referring to Ontario Regulation 153/90, section 4 states that the tribunal may grant permission to interfere with a watercourse, if it does not affect flooding, control of pollution or conservation of land. If Mr. Reissing's appeal is allowed, it will increase flooding on the property to the east.

According to Mr. Thomas, there is less storage capacity in the channel in the property to the east. Mr. Hill pointed out that the appellant has not investigated the potential impacts of his proposal. Mr. Hill submitted that before allowing the piping, greater information is required before an adjoining property is put at risk.

Mr. Hill submitted that the proposal would also result in increased flooding on the subject property. The existing channel has the capacity to handle flooding within itself of the 100 year storm. If permitted, there will be flooding on his property outside of the channelized area in any storm of greater magnitude than a 5 to 10 year storm. Mr. Hill submitted that it is impossible to tell from the evidence presented where the water will go, or the extent of the flooding which will be caused. No information has been provided on the current grades of the property, notwithstanding that the building is complete and grades are established. Mr. Hill submitted that there is no evidence of the location or extent of flooding, nor of what changes to grading are necessary to control flooding under current conditions.

According to the documents filed, in particular the Cole Sherman report, the capacity of the open system to buffer impacts on the watercourse was appreciated. The decision was made to use the open channel. Mr. Hill pointed out that upstream of the Reissing land, there is a significant open channel. Downstream, after it emerges from its piping, it once again flows through an open channel to the overland detention pond.

Mr. Hogenbirk's evidence is that engineers are working towards this open channel approach. Mr. Thomas agreed that there was an impact filtration and siltation. Mr. Hill submitted that the retarding properties of open channels are important.

The appellant's proposal has a paved parking lot on the site, which would take water into the enclosed drain. In any storm greater than a 5 year storm water would be ponded and drained. The impact of hydrocarbons will be significant. Also, the benefits of an open channel would be lost with respect to the subject property, because the effects of the parking lot would be swept into the system.

The length of the proposed piping is significant, making the effects of pollution significant. The Conservation Authority is concerned with the precedent which would be set. If the appeal is allowed, the appellant would be granted 8 percent more operating room on their property. The Conservation Authority would be unable to deny other such applications.

Mr. Reissing submitted that issues of control of flooding are looked after with the calculations in the channel and in the parking lot. Any floods over what can be contained on his land would be stored on property to the east. The channel is designed to give the same benefits to flooding while freeing up 8 percent of the land.

The length of the existing open channel is not significant, in Mr. Reissing's estimation, being 1/6 of the system that conveys water across the subdivision, east to west.

Mr. Reissing pointed out that any cost of improving the landscape would have to be offset by some means of increasing his income from the investment. Also, there is less of a likelihood of garbage collecting with an enclosed channel.

With respect to flooding, the land to the east is higher, so it will not be a problem. The flooding will occur on the parking lot. Also, whether or not the enclosure is allowed, flooding will occur. Mr. Reissing submitted that the reasons for use of the open channel were not for their beneficial effects on siltation and pollution, but economic as the enclosure is more expensive.

Mr. Hill objected to these last points, submitting that they are not evidence. He submitted that the tribunal cannot go beyond the Cole Sherman report itself. Mr. Hill reiterated that, whether or not the appellant anticipates flooding on his

property, not enough is known about the points of entry and impact.

Findings of Fact:

Mr. Reissing's land is located within the southeast quadrant of the industrial subdivision. As such, it receives water flowing from 53.8 hectares located outside the subdivision (See Ex. 8, Appendix A, page 4, paragraph 4, Report of Andrew Brodie Associates Inc.). The potential impact of these external flows in a regional or even 100 year storm event is significant in determining whether the appeal should be allowed.

In examining the Minor Storm System and Major Storm System of the Cole Sherman Function Report (Ex. 8, Plate 5 and Plate 7, respectively), only two open channels are shown, being the one at the rear of Mr. Reissing's land which runs east to the limit of the subdivision. The other conveys flows north on the open land between Street No. 69 and Street No. 68, which ultimately flows under Street No. 68 to the detention pond. It is quite apparent from looking at Plates 5 and 7 that the extent of enclosed piping on the subdivision far exceeds that of open channels by quite a wide margin.

While Mr. Reissing attempted to demonstrate that the enclosed piping done on other properties in the subdivision created a precedent to allow enclosed piping on his own, the tribunal finds that it does not accept this reasoning. At the time the subdivision was planned and approved, the enclosed piping and open channels were part of the initial design. To the extent that Mr. Reissing believes that unfairness has resulted, it is clear that the principle of buyer beware will be applicable in this case. As to whether some duty was owed to Mr. Reissing either by the real estate agent showing the property, the owner of the lot selling to Mr. Reissing or his own lawyer is for some other forum to determine, should Mr. Reissing avail himself of that route.

There was no argument from Mr. Thomas that the enclosed piping which runs along 10 metres of Mr. Reissing's property is part of the minor storm drainage system, designed to accommodate a 5 year storm. Indeed, at the time the Cole Sherman Functional Report was prepared, the concept of an enclosed channel was only examined for purposes of conveying flows through the land between Street No. 69 and Street No. 68 (See Ex. 8, Plate 4).

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However, the enclosed piping along Street No. 69 is also designed to accommodate a portion of the major storm flows, as is shown on Plate 7 of Exhibit 8 and set out at the bottom of page 4 of the Cole Sherman Functional Report:

Storm sewers along Street 69 have been sized to accommodate the 5 year storms from both the external and internal flows, in addition to the major flows which cannot safely be accommodated along the street right-of-way. An estimated flow of $6.0 \text{ m}^3/\text{second}$ has been calculated as the maximum overland flow on local industrial streets. . . .

The importance to the storm water management system of the 26 metre right-of-way along Harry Walker Parkway from the enclosed piping starting on the Reissing property and running north on both sides of the Parkway to Street No. 69 cannot be underestimated. Examining Plates 4, 5, and 7 of Exhibit 8, it can be seen that the overland rights-of-way create a substantial corridor along each of the enclosed piped components of the major and minor storm water management systems.

Three areas have 26 metre rights-of-way, being the westerly portion of Street No. 68, located west of Harry Walker Parkway, and that portion of Harry Walker Parkway located north of Street No. 68 and south of Street No. 69. The remaining rights-of-way shown are 20 metres in width. It must be remembered that the 26 metre rights-of-way create rights-of-way on either side of the road effectively 30 feet wider than those created by the 20 metre rights-of-way.

Examining the area of 26 metre rights-of-way further, it is noted that north of Street No. 68, there are no enclosed pipes, so that the overland flow represents the entire storm water management system conveying flows to Street No. 68. Once this flow meets Street No. 68, the right-of-way is immediately increased to 26 metres.

The question which arises in viewing the major and minor storm water management systems is what happens at the south end of the Reissing property and what are the potential impacts to the system as a whole.

At page 6 of the Report of Andrew Brodie & Associates, which is Appendix A of the Cole Sherman Functional Report, paragraphs 5.2 states:

5.2 Channel to Convey Flow from the Eastern External Area

A preliminary analysis of the size of the channel required to convey all flows up to the Regional storm is as given in Figure 7. The total top width is 7.5 m. (depth = 0.7 m, slope = 1.2%). Alternatively, a 1950 mm diameter concrete culvert can also be used to convey the flows.

The open channel on Mr. Reissing's property is 7.2 metres in width plus a vegetative buffer between the channel and the pavement of Mr. Reissing's lot leading the tribunal to conclude that it was designed to accommodate both on-site and off-site water in the regional storm situation. The size of the intake pipe which extends 10 metres onto Mr. Reissing's land is not designed to handle all of the regional flood flows. Therefore, at the intake, the overland storm water management system kicks in. The 26 metre right-of-way does not appear to handle all of the floodwater stored in the open channel, as the right-of-way west of Harry Walker Parkway is only 20 metres in width on either side of Street No. 69 and the enclosed pipe is 1200 mm, having combined flows from the 975 mm pipe from the south and the 675 mm pipe from the east.

The importance of the open channel in its role as a vast opportunity for flood storage cannot be underestimated. It accommodates off-site flood waters as well as those draining from the adjacent land.

If the channel were to be piped a further 65 metres to the east through an 825 mm pipe, as proposed, the volume of water displaced would have to flow somewhere else. The original design provides that no more than 6.0 m³/s will flow over local roads, in keeping with municipal standards. Nothing in Mr. Thomas' Storm Water Management Report (Ex. 3) calculates the impact of requiring a greater amount of overland storage on the overland flow on Harry Walker Parkway. Also, the calculations which are performed address the building plan as it was prior to revisions and grading, so that the information provided is not reliable.

There appears to be no argument that there is more water being conveyed along the open channel than could be accommodated by the 825 mm pipe

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proposed by Mr. Thomas. If the application were to be changed to a 1950 mm pipe as recommended in the Andrew Brodie & Associates Inc. report, there is a paucity of information on the impact on the Harry Walker Parkway and on both upstream and downstream reaches of the overland flow.

The tribunal finds that it does not have the same confidence as was expressed by Mr. Reissing and Mr. Thomas that the impact of enclosing 65 metres of the channel can be limited to Mr. Reissing's property. The tribunal is similarly not convinced that the extent of flooding expected on Mr. Reissing's land will be safe. The lack of adequate and accurate flood elevation modelling for the adjacent property to the east, the overland right-of-way on Mr. Reissing's land and the absence of any information on the impact on Harry Walker Parkway reduces any potential findings to speculation. However, it is clear that the tribunal can make its determination to disallow the appeal based on an absence of convincing calculations.

It has never been an adequate proposition to move potential flooding to an adjacent property without informed consent of the adjacent property owner, which Mr. Reissing clearly does not have. In the experience of the tribunal, enclosing an open channel, even through a relatively short reach, will impact on flood levels upstream.

The open channel which flows along the south side of Mr. Reissing's land functions not only to drain waters from a severe storm event from Mr. Reissing's land. It stores flood waters which come from outside of the industrial subdivision. The means employed for facilitating the drainage of this and on-site floodwaters to the stormwater detention pond utilizes a system of enclosed piping and extremely wide rights-of-way for overland flow. The tribunal finds that to allow the installation of an 825 mm pipe on Mr. Reissing's land will not adequately accommodate the off-site flood flows which drain into this area. A modified proposal, allowing installation of a 1950 mm enclosed pipe would overload the downstream enclosed piping so that potential flooding will occur along any of the 20 or 26 metre rights-of-way in excess of flood levels which they were designed to accommodate. This in turn could cause dangerous flood levels or flows the extent of which have not been shown.

Mr. Reissing indicated that the subdivision design has resulted in an unfairness to him, by his being forced to accept the open channel. Upon review of the storm water management plans, it is quite clear that it has been designed to control the flow at the outfall located at the northwest of the subdivision. Mr. Reissing has

suggested that the source controls should be imposed on the farmers upstream. While farmers should be accountable for the water quality leaving their land, the issue insofar as the water entering the subdivision is concerned is one of quantity and not quality.

The tribunal finds that it accepts the evidence of Mr. Frank that, if the subdivision were designed today, a greater proportion of the drainage would be by means of overland open channels and not the enclosed piping with rights-of-way. The reason for this is one of water quality rather than quantity. The benefits to water quality of an open channel, even one which is manmade with rip rap, far outweigh those of a piped system, which provides no opportunity for filtration and trapping of sediment. However, Mr. Reissing's appeal fails not on the basis of water quality. Rather, the evidence presented in his appeal does not alleviate the very serious flooding concerns raised by removing regional storm flood storage capacity and replacing it with storage which will occur on impervious and highly utilized parking areas. Nor have the potential effects on the surrounding properties and public roads been adequately explored.

The precedent value of allowing the appeal is greater in this case than it might be had the property been upstream. While the anticipated affect on flooding will not change considerably, the proximity of that reach of the watercourse being considered for alteration to an enclosed pipe with overland flow and to rest of the open channel is at a particularly sensitive juncture of the entire storm water management system. As such, it puts the adequate functioning of all of the system in jeopardy. This case is illustrative of the fragility of a storm water management system design once it is in place. Tinkering with any reach of the system has the potential to impact on the whole system, which was designed to operate as an integrated system. It is not clear that either end of the system could tolerate the proposed change.

The tribunal will not deal with the affect on pollution which this proposal may have. The impact on flooding clearly is sufficient that the appeal will be dismissed. However, the absence of any findings concerning the increased potential for sedimentation and loss of opportunity for nutrient uptake should not be projected onto similar situations in prospective appeals. The entire subject of affect on pollution has increasingly come to the fore and impacted on decisions of other conservation authorities as well as those of the tribunal. This change in the paradigm is recent, as evidenced by the fact that it was not the major feature of the refusal issued in October of 1989. A more adequate canvassing of the issues on appeal prior to the hearing, perhaps through a Pre-Hearing Conference or Procedural conference, would have raised this as a valid and timely issue. However, in light of the fact that Mr. Reissing was of the opinion that he

did not have adequate notice to prepare for this issue, the tribunal is of the opinion that no unfairness has resulted, as the decision is based solely on the issue of flooding.

Conclusions:

The tribunal concludes that the appeal of the refusal to allow permission to alter an existing watercourse on Part Lot 4, Concession III, Lot 50, Plan 65M-2730, Town of Newmarket, should be dismissed as the proposed alteration will affect the control of flooding.