Planning Board Meeting
Library, Elementary School
July 22, 2010 - 7:00 P.M.
Work Session - July 22, 2010 - Work Session
Shane Csiki, NH DES Geomorphologist and expert in fluvial erosion
and
Kyle Pimental, SRPC Communications Technician –
Presentation on the benefits of a fluvial overlay district and address the multi - hazard mitigation plan updates
Review of plans scheduled for hearings on August 5, 2010

Members present: Chairman John Huckins
Edward Lemos
David Mott
Dawn Hatch (Alt)

Town Planner: Constance Brawders

NH DES Geomorphologist & Expert in Fluvial Erosion: Shane Csiki
SRPC Communication Technician: Kyle Pimental

Chairman Huckins opened the meeting for a conference with Shane Csiki and Kyle Pimental concerning fluvial erosion hazards. Shane Csiki gave the Board his background in river science, a DES data collector, working with the River Program, water wells, and GIS work and scientific support. He said the project was on the Isinglass River which will be referred to as the River.

Csiki said his group study the land forms and how rivers shape landscapes. He said his program had been in effect for 2 years. He said they studied the damage from the Mother's Day storm around the State. He said they had collected the run-off data for erosion damage. Csiki said the eroding stream banks, undersized culverts, and homes close to the river banks were issues they were studying.

Csiki said Vermont had a good river program and was the leader in the United States at the State level. He said segments of the River were identified for the hazard zone maps. Csiki said that they had walked the 17 miles of the River. He said the Exeter River was the first river completed. Csiki said the Isinglass River Group had brought it to the attention of the Department of Environmental Services.

Csiki said a fluvial erosion hazard plan, the sensitivity to erosion, and the high sensitive sections of the stream banks were what was being studied to watch and document how the River moves in the flood plains. He said the River moves with erosion which was acceptable if in an unstable condition. Csiki said sand and gravel banks had high erosion where banks with rooted trees were better protected.

Csiki said they did a complete River condition assessment. He said the State permits allow stream restoration projects with the proper permits. He said they observed and documented the conditions up and down stream. The up and down flood backup causes sediment to move downstream and in some cases affects public safety. He said they go around the state and collect flood data. Csiki said with this data they can

document the state of a river.

Csiki said a watershed management plan that would target culverts would make the data available to identify areas in the watershed that needed improvement and upgrades. He said he had access to a GIS component in the office along with topography and geological maps, grade controls – dams, valleys, and flood and sediment transfers.

Csiki explained reach river break process which divides up segments of the river. He said they do a windshield survey then a walk through. He said there were 21 reaches along the Isinglass from which they collect measurements of the depth, width, the pebbles on the bottom, erosion counts, bedrock outcroppings, and beaver dams. Csiki said impoundments and the level of quiet water data were collected. He said the sensitivity rating, the vegetation on the banks, fast flowing water, unstable conditions, sand, and erosion data was also collected.

Csiki said there was not a lot of development in the flood plain nor was there a lot of development along the banks of the Isinglass River. He said he thought that the River had straightened out where it joins the Cocheco. He said it had an extreme sensitivity rating. He said there was downward movement in the River.

Csiki said there were 3000 pictures available on the River. He said the end results would set fluvial erosion hazard zones. He said this included bridges and culverts. Csiki said if a community adopts a fluvial hazard plan he would work with it as the State land use guide. He said they would help draft a chapter for towns to adopt. Csiki said it would be public data. He said they had adopted the Vermont protocol.

Hatch asked if Csiki could send the Board information on the fluvial erosion hazards. He said he would email the information to the office. Hatch will also give the Conservation Commission this material.

Csiki said that when the information and data was complete it was released to Strafford Regional Planning Commission. He said he provided the scientific portion of the data and SRPC took it from there with communication with the member towns.

Huckins asked if asked the tributaries of the Isinglass River were included in the study. Csiki said they worked with the main channel of the River. He said SRPC worked with the corridor of the River. He said there were 12 crossings with a corridor width of a quarter of a mile each side.

There was a backlog of communities with rivers that they would like to see studied. He said the Isinglass River Advisory Committee had worked on the Isinglass River Project. He said the Isinglass, Cocheco, and the Lamprey Rivers were a combined total of 120 miles. Csiki said the next river under consideration would be the Suncook beyond the Piscatuqua. This was a request from the Department of Safety.

Funding of a project was discussed. Csiki said outside funding could be available. He said communities could do their own project. He suggested working with him for the data available and SRPC for places to apply for funding.

Mott said we look at the Town as the headwaters as there are 5 watersheds in it. He asked if the Mallego or Oyster River were on the list to be considered. Csiki said not at this time.

Csiki said the data collection for the designated River consisted of a survey of the flood elevations along it and was tied to the bank at full height. He said a mapping grade not survey grade was used for the development within the River corridor. Huckins said this might be a model for storm water management.

He said the Board was concerned that the rate of flowage off the parcel would not increase but the duration could be a longer flow. He asked what the best way to address this problem was. He said we do not want to see flowage increased off a site. He gave as an example the flowage on Gerrior Drive where 1 culvert was replaced with 5 which increased the flow rate.

Csiki said culvert data and or bridges should be put in a data base. He said there were stream crossing rules from the State that had to be met. Csiki said when new culverts were installed the input should be based on the watershed area. He said the changes in the rules and requirements should be on the DES website, Water Division which should address the stream crossing effect. He said culverts should be sized properly for the 100 year flood. They should be sized for the shape of the channel. Csiki said the website should answer these concerns.

Mott said the Board would like to see no water off site. Csiki said addressing stream crossings was part of the process. He said nothing had changed in dredge and fill. He said there were several criteria for permits. One that needed no engineering, a second does need engineering and supporting material. He said a third was a permit by notification.

Csiki said there was a change that would reduce flood potential. He said there was federal funding that could help a community meet the changes. Csiki said flooding was hard to predict like the weather. He said a guide would be different widths with a higher rating for the greater rate of change. He said 7 stream types were developed.

Mott asked how this would apply to Barrington. How will SRPC use this data. Brawders asked if the 50 year storm requirement should be changed to the 100 year storm. Mott asked if they came up with different criteria with the number of events that had been close together in the past few years.

Csiki said the meaning of a 100 year storm was the 1 in 100 chance of it happening. He said climate and flow data was used in the calculations. He said the data was done in 30 year intervals, example 1971 – 2000, 1981 – 2010; climate records change every 10 years. He said in 2011 it will extend to 2030. He said the fluvial overlay, flood – flow data, and flow gauge were used by the Geomorphological Specialist.

Kyle Pimential, SRPC said options for communities were mitigation with zones and approaches to reduce flood loss. He said the fail pattern of levies and berms was studied. Pimential said they were moving away from instanable types of engineering including ones for wild life habitats. He said FEMA funds controlled projects that were sites specific.

Csiki said they had completed a 2 month hazard mitigation plan that had been funded by FEMA. He said there was more of a chance to get money because of the update of map assessments. Csiki said they were now looking at a natural channel design which was stronger. He said they were moving away from channel locations.

He said if a house on a river bank was destroyed FEMA turns the parcel into open space. He said they were elevating and flood proofing homes. Csiki said that a town or city would need to apply for the funds. It cannot be done by an individual. He said there was not much available at this time. He said that a zoning hazard mitigation overlay district needed to be established to set what should be restored. He said this was where the Town was lucky as the River in Barrington had not been fully developed.

Huckins asked where and how do we define what areas should be preserved. Csiki said Vermont had divided zones for each reach. The data was created using GIS. Huckins said that probably there were a lot of areas already protected along the Isinglass. Pimential said that the Strafford Regional Planning Commission would provide detailed maps.

Csiki said when the Board looks at where development occurs we would need experts to look at reach areas that could be affected. He said they would find where the reach was located. He said there was a process to define where the limit of the zone would be.

Csiki said Raymond had tried to pass a fluvial erosion hazard zone ordinance which did not pass. He said the maps were done at a 1-5000 scale with GIS. He said a site assessment and the measurements of any affected structures were represented. Csiki said that the zones represented were adjusted per conditions. He said mapping had been provided by DES.

Csiki said if Barrington considered adopting a fluvial erosion hazard ordinance it would be a local level decision. It would need to be evaluated to decide whether it fit in a business plan. He said if one passed he would be the contact person for the Town.

Mott said we would need to set the criteria and methodology needed for the process to take place during the development of a site. The expertise of a geologist educated in river science and geology would be needed. He said contractors would need to have a geologist on a retainer for this process. Csiki said there were 2 located in New Hampshire who would work with the Town if an ordinance was passed.

Huckins said there would need to be a time line set so it could be reviewed. Csiki said he would send a copy of the material presented tonight. He said he would email the points of his letter. Pimential said SRPC would have the role of working with the communities. He said they would help come up with projects that we could get funding for.

Csiki said that there would need to be an inventory and assessment of culverts. Mott said the science and impacts of the reaches and the effects of erosion would be needed. Csiki said there were training sessions which addressed stream crossing rules. He said impervious surfaces in developments had a large impact down stream. Mott said the constructed areas and the impounded ones should be located and shown on the maps.

Brawders asked about public outreach. Csiki said after the failure in Raymond he was unsure whether it would pass in another Town. He said he would help a town achieve an ordinance. DES should be contacted for input. There would be information on flooding that would be available.

Csiki said there would be a long list of suggestions for other communities. Outreach and education should be used for guidance. He said a town should start with the science of the river conditions. He said he would give a talk to bring the ordinance into perspective. Brawders asked if it the voters in Raymond looked at the proposal as a taking. Csiki said probably many of them did. He said an ordinance would be worded for a specific town. He said if Barrington passed an ordinance the language would be adapted to the town.

Pimential said a town would not have to be so strict that a person could not use his/her land. He said it should be specific for the Town and reflect what works best. Huckins said the map should show what the impact to the Town could be. Again Csiki

said that we were fortunate that the Isinglass was sparsely developed. He said we would need to reach out to people that could be affected. We should educate the voters.

Mott asked how far away from the Isinglass River would the zone be. He said we had a protected zone of 100 feet. Pimential said we should overlay both sides. Mott said we would need to create an overlay district or hazard mitigation district and get the data for the River.

Pimential said Julie LaBranche had written the Raymond document. She said it was applicable to the Exeter River. He said the Lamprey River was also being considered for future designation. Huckins said we would look at the map overlays. Brawders asked if transfer of development rights would work with this procedure. Huckins said he did not think so. He said we would need to do our homework to educate ourselves and the voters. Huckins said the Isinglass River was protected by our ordinance. He said we would need to find out how many parcels would be affected. Csiki said everyone's address within 150 feet from the River would need to be known.

Pimential said we should look into funding explore the FEA zone and view the LTA maps. He said that any work done for this project would be paid by the dues paid to SRPC by the Town. Huckins said a charette could be designed to educate the people. Mott said we were always looking for available funding. Pimential said at present there were no FEMA funds available. He said any funding would need to be approved by the Selectmen and DES.

Brawders said the FEMA insurance had lapsed in April. She said it was being worked on to get it reinstated. The insurance was through Strafford Regional Planning Commission. Brawders said they were doing a value and risk update. She said the Selectmen have to approve the process.

We will discuss the possibility of creating a fluvial hazard ordinance on August 19 at the review of plans. Hatch said that the Commission members were interested in looking at a storm water management program as they felt that this would have value to the whole town not just along a specified river. Wallace said the Natural Recourse Inventory was a good planning tool that could be used toward lands that could be protected. Brawders said she was pushing for connecting open space.

Huckins thanked Kyle Pimential and Shane Csiki for attending the meeting and presenting this program.

Huckins asked about accepting the minutes of July 15. Mott said he had not read them yet. They will be tabled until August 19. The Board will meet on August 19 to review any plans that were ready for hearings on September 2 and discuss fluvial hazards. The meeting adjourned at 9:30 PM, motion by Mott, seconded by Lemos, all in favor.

Dawn Hatch, Clerk